

# **An Investigation into the Cycle and Prediction of Organisation Facility Management Procurement**

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A thesis submitted to the University of Technology, Sydney, in  
Candidacy for the Degree of Doctor of Facility Management

by

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## **CERTIFICATE OF AUTHORSHIP/ORIGINALITY**

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Paul James Luciani

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## ABSTRACT

Facility Management (FM) is an emerging industry in Australia and in various nations throughout the world. The annual Australian national investment of the FM *industry* contributes approximately 4% to GDP and there are more than 404,000 people working in FM service industries.

Some conjecture exists to whether or not FM is a discipline in its own right. However, a review of FM history reveals its existence embedded within various organisational operating environments, however, under differing labels. The creation of an acceptable global FM definition is yet to be achieved.

The procuring and delivering of FM services is an activity that is predominantly managed from inside an organisation through direct employment (in-house), or by others outside the organisation (outsourcing). The latter has gained considerable popularity of late, yet it is argued that it remains an ill-defined term, resulting in its possible incorrect application to the FM function.

Further, there has been some suggestion as to the existence of indiscriminate cycling through these two main forms of FM procurement and delivery methods by organisations that has attracted some debate. Limited research has been performed on the dynamics associated with the decision to manage FM in-house or to outsource the function.

It is argued that on a medium to long-term basis there may exist an inadequacy in identifying and associating the drivers of value and costs, as they are perceived by organizations, for the two main procurement and delivery methods of FM.

By researching organisational operating environments it was found that in-house and outsourced methods may have different cost and value drivers. Further, each method, under certain conditions, was found to produce a different set of perceived value and costs, seemingly independent from each other.

Also, these operating environments seemed to change over time, influencing the perceived FM value and cost levels. This apparent link with organisational operating environments and perceived FM procurement and delivery value and cost suggests that neither method may be regarded as a permanent solution.

Thus, under certain conditions, the dynamic alteration of outsourcing levels during these changes in organisational operating environments may capture this value for longer periods of time, whilst minimising the costs associated with FM procurement and delivery.

**KEYWORDS:** Facility Management (FM), outsourcing, in-house, value, cost, time.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 BACKGROUND TO THE RESEARCHED TOPIC**

It could be argued that Facility Management (FM) has emerged over the last twenty years as a diverse and multifaceted discipline throughout the world, having developed from foundational disciplines such as engineering, architecture, building and construction, and other early disciplines which emerged from industry growth.

Cotts (1998, p. 3) states:

Facility Management ... is a fairly new business and management discipline. Widespread use of the term dates from the creation of the Facility Management Institute at Ann Arbor, Michigan, in 1979 and the founding of the National (later International) Facility Management Association in 1980. However, facility management of large and diverse facilities has long been practiced by the military, government, and North American College and university campus officials, usually under the name of postengineering, public works, or plant administration. In the private sector, commercial owners and developers have practiced property management , or managing properties for a profit.

Thus, it could be argued that FM has always been around, and, in fact, in its various forms has served the “market, or industry” in a support function; which has diversified its roots into many parts of industry and organisations.

Therefore accepting this, without FM, industry as we know it today could not function. It would be as if a piece of the puzzle was missing. Payne (2000) argues that as a profession, an area of management practice, and an area of business practice, it is still developing; drawing from pure organisational management and the skills of different property, engineering and service professions to slowly gain a place at the top of the table of organisations in different sectors.

Concurrently, as general industry itself developed, so did the way in which FM delivered its services. As various external and internal forces dictated change, reshaping the way we do business, and new industries emerged in the developing world, methods of delivering this FM service also changed and reshaped.

The practice of FM has been adapted within and implemented across a wide range of organisations, covering a broad spectrum of both public and private sector companies varying in both size and complexity, with many permutations of service delivery and scope of services which may also represent a mixture of in-house and contract service-providers delivering services under the facilities banner (Payne 2000).

It can be argued that such methods of “delivering” this FM function can be broadly categorised into two main forms:

1. In-house (or Insourced)
2. Outsourced

Both strategies are commonly linked by the use of people, either employees directly employed by organisations, or contract employees who are either directly or indirectly employed by the client organisations<sup>1</sup> themselves, or by service companies.<sup>2</sup>

These two main forms of procuring and delivering FM will be discussed in detail throughout subsequent chapters of this thesis.

## **THE GREAT EMERGING DEBATE – IN-HOUSE OR OUTSOURCED?**

Recent Literature suggests, though, that these two simple forms of FM delivery methods are not exhaustive in themselves, and are in fact the result of an evolution of management thinking to which the latter, outsourcing, has or is emerging as the ultimate efficient method of delivering FM services (CRC for Construction Innovation 2006); (Lankford 1999). This thesis will also investigate that argument in detail.

Nelson-Nesvig (1998, p. 2) states:

There appears to be confusion about the definition of outsourcing. Some professionals believe it is simply contingent workers or flexible standing options. Others think it occurs whenever an organisation outsources a specific function like security, payroll, or marketing. We would like to set the record straight by saying, it's all of that and more. Outsourcing occurs anytime the organisation elects to utilise outside, independent workers to conduct work-related tasks. The how, what, where, and when of the working conditions are driven by the needs of the organisation and may

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<sup>1</sup> The term “client organisation” refers to those firms that procure FM services from an outsource provider. This definition will be used throughout the remainder of this thesis.

<sup>2</sup> Service-providers refers to companies that provide FM services to client organisations.

vary from assignment-to-assignment, day-to-day, and worker-to-worker. Independent workers are as varied (with varying degrees of skills, abilities, education, objectives, and titles) as the work they perform.

These comments suggest that outsourcing is more of a daily decision based on looking outside the firm<sup>3</sup> for resources, heavily reliant on the source of labour, rather than the function(s) targeted (Atkinson & Meager 1986); (Handy 1989). However, this description of outsourcing may be too vague and overly ambitious, attempting to differentiate outsourcing and in-sourcing through employment structures rather than market forces. This will also be discussed in detail in this thesis.

However, as the FM services in Australia contribute approximately 4% to GDP and there are more than 404,000 people working in FM service industries in Australia (Facility Management Association of Australia 2005); (Dept. of Industry, Tourism and Resources, 2005), procurement of these services, whether treated by the source of labour or by the type of function, is therefore an important consideration when considering the efficiency<sup>4</sup> of the FM delivery methods available.

Should any wastage or inefficiency result from an ignorant decision process around FM sourcing (that is, Insourced or outsourced), then this could amount to an enormous amount of loss financially and limit future productivity gains. Investigation of both these procurement and delivery methods for FM services is therefore extremely important and is the main area of research in this thesis.

## **CYCLE BETWEEN IN-HOUSE AND OUTSOURCED FM**

In addition, there is little empirical evidence to substantiate any findings with regard to the existence of FM procurement cycles<sup>5</sup> and determinants of causal relationships (that is, cause-and-effect studies), especially within the FM discipline.

There has, however, been substantial research in the area of outsourcing, contracting, competitive tendering, and other forms of procurement of goods and services (CRC for Construction Innovation 2006), however, little research has been specifically targeted at the FM industry (Burdon & Bhalla 2005); (Burdon 2004); (Grimshaw 1999); (Cairns & Beech 1999) and in particular, what effects, if any, the two main forms of procurement and delivery methods for FM services, insourcing or

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<sup>3</sup> For the purposes of this thesis, "Firm" refers to an association of persons to carry on a business enterprise. "Client organisation" and "organisation" are also used in the same context.

<sup>4</sup> Efficiency for the purpose of this thesis represents certain value and cost indicators which will be discussed in subsequent chapters.

<sup>5</sup> "Cycles" refers to the switching between the two main forms of FM procurement and delivery methods.

outsourcing, have on an organisation over time, and more importantly, what the existence of cycles means to the individual organisation, and not just an industry at large.

This gap in the literature raises the following questions:

1. Is there a best-fit approach to procuring and delivering FM services and what influencing variables apply?
2. Does switching from one main FM delivery method to the other occur, and what effect does this switch have on the perceived return on value versus costs when considering FM procurement and delivery strategies in the medium to long term?

This thesis investigates the two simple, yet common forms of FM procurement and delivery strategies, the relevant influencing variables associated with each form, and makes some observations on the resultant effects on perceived value versus costs over time.

## **1.2 HYPOTHESIS**

Therefore it is now put forward that the initial FM procurement and delivery method, regardless of whether it is insourcing or outsourcing, causes a perception of a positive value<sup>6</sup> versus cost<sup>7</sup> ratio. And:

1. Without alteration, the perceived positive value versus cost ratio will degrade over time until cost exceeds value.
2. This then causes organisations to switch to the alternate method of FM procurement and delivery.

And indeed, under certain conditions, the furtherance of time will continue this cycle (refer to Figure 1). This issue has not been considered by previous researches and is a new concept.

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<sup>6</sup> “Value” refers to both direct financial benefits and non-financial benefits, such as ease of management. Value for the purposes of this thesis will be further defined in subsequent chapters of this thesis.

<sup>7</sup> “Cost” refers to direct financial costs and non-financial indirect costs. Cost will be further defined in subsequent chapters of this thesis.



**Figure 1 – FM Procurement and Delivery Degradation Cycle**

Figure 1 represents an assumed theoretical rate of degradation that takes place after a wholesale switch from either in-house or outsourced FM procurement and delivery methods, where B is to be avoided and represents a negative overall return, and where t represents the time it took to reach B. The “y” axis therefore represents the maximum and minimum levels for either value or cost.

### **1.3 AIM**

The primary aim of the research is to test the hypothesis by investigating under what conditions perceived value and costs associated with FM procurement and delivery methods remain optimum, and at what rate do they seemingly degrade over time, if any.

The secondary aim of the research is to then ascertain to what extent this degradation influences changes between insourcing and outsourcing, if at all.

### **1.4 OBJECTIVES**

The objectives of this thesis are to build a conceptual framework from existing literature for FM insourcing and outsourcing. To then analyse data obtained from within a large retail organisation (case study) that has adopted both of the two main forms of FM procurement and delivery methods at different stages throughout its history. And also to analyse data obtained externally through a survey from other organisations for the same purpose, and for comparison purposes.



**Research objectives are to:**

- (i) Define the term Facility Management as it relates to insourcing and outsourcing to allow for the formation of a conceptual framework in researching the hypothesis.
- (ii) Define the term outsourcing as it relates to Facility Management to quantify and qualify its use amongst organisations.
- (iii) Build a conceptual framework that identifies perceived value and cost for both insourcing and outsourcing and the circumstances surrounding any individual drivers as they relate to FM.
- (iv) Analyse data made available from a single organisation to examine in detail, through a naturalistic case study technique, the FM procurement and delivery methods adopted over time and the resultant perceived value and cost implications, which can be used as a reference to compare with the survey results.
- (v) Analyse data made available from a survey of multiple organisations to compare against the case study findings, and to further investigate the dominant forms of FM procurement strategies.

## **1.5 RESEARCH METHODOLOGY**

The research methodology will primarily test the hypothesis using the questionnaire data through t-test averaging, multiple correlation (using the ranking (Spearman) method) and polynomial regression analysis.

The use of a descriptive single-case explanatory–exploratory study using multiperspectival analysis, for both contemporary and historical information on a large retail organisation (that is, a case study) analysis is to be performed to support and compare the finding, and to add detailed information where required.

The adopted methodology will be further discussed in subsequent chapters of this thesis.

### **The overall methodology therefore comprises:**

1. Definition of research questions through initial hypothesis – this aims to identify issues surrounding FM procurement and delivery methods used to compare to any conflicting theory that may emerge. The literature review will put boundaries around the research through the use of definitions and thus flesh out the concept of insourcing and outsourcing to build a framework for the research.
2. Holistic case-study technique for a multiple-site, single organisation with theoretical sampling – this is to replicate or extend theory by filling the conceptual categories in the hypothesis through the use of archives, interviews, questionnaires, and observations. Its purpose is to investigate in detail each FM procurement method adopted throughout the organisation's history. This will be used for comparison purposes against any emergent theory from the literature review and the findings from the analysis of the data obtained from multiple organisations.
3. Questionnaire survey from different organisations for multiple qualitative (thick description) and quantitative data collection. T-test averaging will be used to identify significant differences with outsourcing and insourcing results, multiple correlation analysis (using the ranking or Spearman method) will be used to identify the relationships between the identified variables of FM procurement and delivery value and costs, and statistical regression analysis (polynomial) will be used to identify any trends that may exist between FM procurement and delivery method, value, cost and time. This is undertaken to gain a synergistic view of evidence and strengthens grounding of the theory by triangulation of evidence (Feagin, Sjoberg & Orum 1991).

## **1.6 STRUCTURE OF THE THESIS**

The structure of the thesis comprises seven Chapters. Figure 2 illustrates the logical relationship between the chapters.

**Chapter One** (Introduction) defines the nature of the problem being investigated in broad terms. This problem concerns the possible cyclical wholesale move by organisations through the two main FM procurement and delivery methods, insourcing

and outsourcing, in an attempt to achieve perceived positive value versus cost ratios<sup>8</sup> over a given time period. The chapter also presents a hypothesis to benchmark against theory. The principal aims and objectives of the thesis are described, as is the adopted research methodology. A sequence and logical path of the thesis structure are presented to give the reader a construct understanding.

**Chapter Two** (Definitions and underlying theory – Facility Management, Maintenance, Contracting Out, Insourcing<sup>9</sup>, and Outsourcing) is a literature review surrounding the research topics for this thesis. The purpose of this chapter is to define what FM is, analyse the functions of FM, and define the two main forms of FM procurement and delivery methods currently in practice. This chapter will limit the field of research to then allow further investigation into the critical issues presented in the next chapter.

**Chapter Three** (Review of Current Practice) investigates and critically reviews previous research and practice, and identifies the underlying theory of outsourcing and insourcing and their application to FM. This will form the basis of a conceptual framework to be presented in the following chapter.

**Chapter Four** (Conceptual Framework) formulates the major issues developed in the preceding chapters and applies them to industry – allowing the formulation of the research methodology outlined in the next chapter.

**Chapter Five** (Methododology) outlines and discusses the methods used in analyzing both the qualitative and quantitative data – Discusses the strengths and limitations of each method adopted and their significance.

**Chapter Six** (Case Study – Industry Example) is a descriptive single case explanatory–exploratory study, using both contemporary and historical information techniques based on the conceptual framework developed in the chapter four.

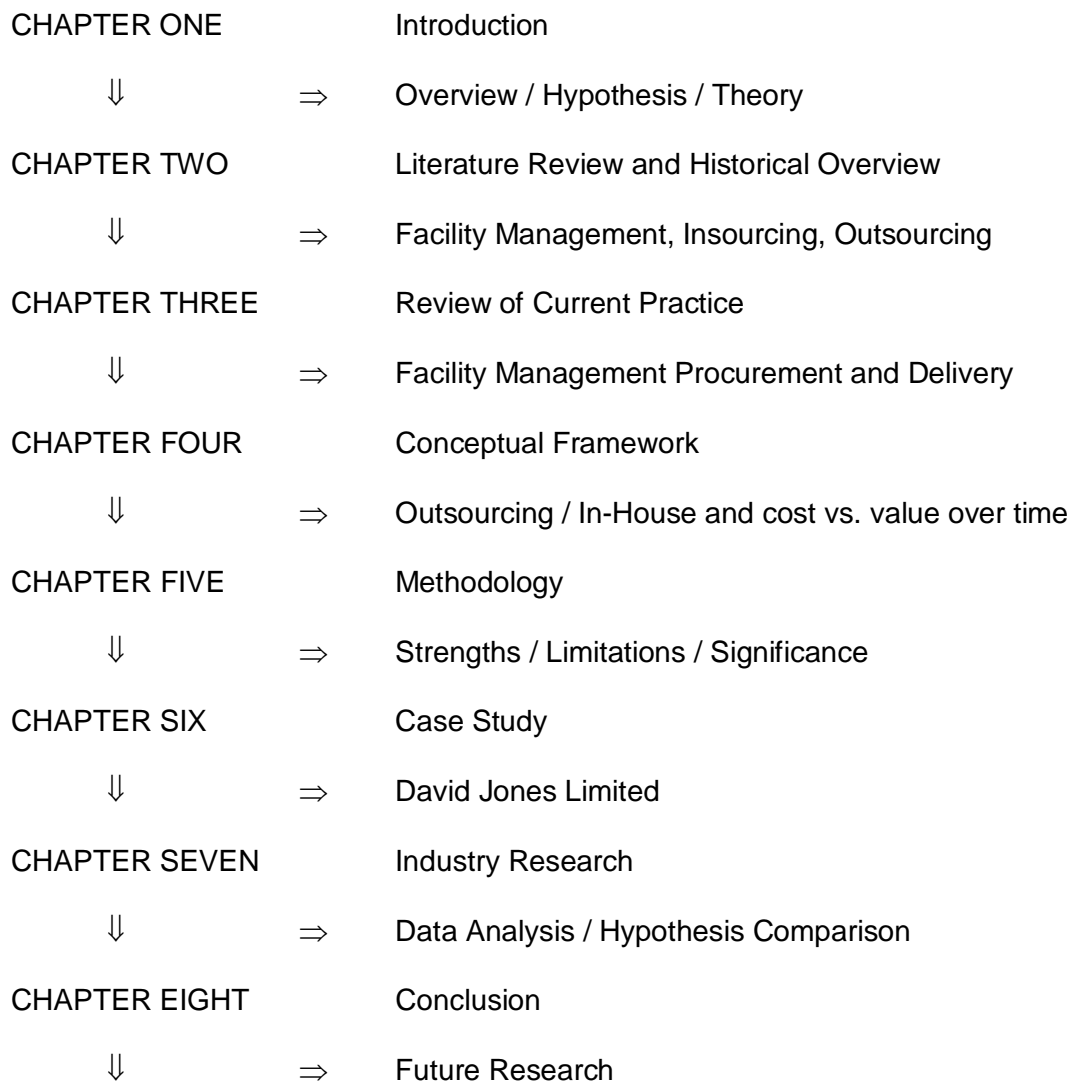
**Chapter Seven** (Industry Sample) is a multiple qualitative and quantitative research application, applied to an industry sample, comparing the case-study findings.

**Chapter Eight** (Conclusion) conceptualises a new approach to FM procurement and delivery based on the findings in the previous chapters. Describes the outcome of the research, reviews the set objectives and makes recommendations for further application to industry and future research (refer to Figure 2).

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<sup>8</sup> A negative value and cost ratio refers to the sum of costs exceeding the sum of values listed in this thesis.

<sup>9</sup> The term “insourcing” is to be considered to have the same meaning as the term “in-house” and will be used throughout this thesis.



**Figure 2 – Thesis Structure and Logical Flow**

## **CHAPTER TWO**

### **LITERATURE REVIEW AND HISTORICAL OVERVIEW**

#### **2.1 PURPOSE AND APPROACH**

The purpose of this chapter is to investigate and critically review the definition<sup>10</sup> of FM and the main forms of FM procurement and delivery. It is also intended to provide an historical account of the emergence of both FM and its related procurement and delivery methods to contextualise these into the path that the thesis will adopt, ensuring synergies with the case study and external samples.

Facility Management, being a relatively new term, has been given many definitions (Lankford 1999), and is a broad term. Outsourcing is also a broad term and means different things in different contexts.

It is therefore important that these concepts are further investigated and rationalised to:

1. Draw conclusions as to the “best-fit” interpretations and definitions of FM and Outsourcing
2. Identify the main areas that apply to the thesis and review these areas in detail.

What constitutes FM is still debatable today (Green & Price 2000). This may jeopardise the “discipline” into becoming a Fad (Price 2002) linked with the rise of the outsourcing industry. The definition of outsourcing is also debatable (Bendor-Samuel 2000). Thus this lethal combination of ill-defined industries and disciplines may, in fact, be a major contributor to FM's under-realised value.

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<sup>10</sup> It is intended to examine what Facility Management means to the industry at large for the purposes of this thesis, and not to introduce a new definition for the industry to adopt.

## **2.2 FACILITY MANAGEMENT**

### **2.2.1 HISTORY**

FM is not a new concept. The label “Facility Management” may be, however, it could be argued that the discipline or disciplines that constitute(s) FM have been around in Australia since the first settlement of Europeans.

Price (2003) offers a comprehensive history of the emergence of the “term” FM and state that the first signs of the term surfaced in the 1970s, attributed to the beginnings of the evolution of the modern office environment and also to the early practice of financial institutions outsourcing their data-processing operations. By 1980; he adds, the term FM was linked with outsourcing of computer and other office services, and by the end of the decade FM became intrinsically linked with workplace management and also linked with the term outsourcing.

The end of the 1990s saw the establishment of FM into an industry throughout the world.

In about 30 years a diverse range of building and workplace related activities collected together under the banner of facility (or facilities) management. Many even claim this as a new professional discipline (Alexander 2003). FM embraces many quite different interpretations, yet they are all linked by some common characteristics. During the 1990s we have seen the rise, and increasing global spread, of the FM industry (Price 2003)

It seems that FM has only been recognised as an “enterprise” in the last twenty years, and that the last ten years have witnessed growth and diversification in FM activities throughout the world. “Much progress has been made in a short space of time” (Nutt & McLennan 2000).

In addition, Nutt & McLennan (2000) say that these early development years for the FM industry were dominated by the priorities of the office and health sectors, influenced by short-term corporate objectives for cost reduction. This suggests an industry built on a need to increase efficiency within firms! There was also some focus on increasing competitive advantage and increasing shareholder value in the commercial office sector.

However, there was more to contributing to office design, attending to maintenance, and other pure “operational functions”. Less tangible areas that are also included in the role of FM, such as managing risk, conflict, and quality were also emerging (Best, de Valence & Langston 2003). The FM industry widened its demographic reach to include leisure, retail, education, manufacturing, transport,

communications, business infrastructure, utilities, and regional and city management sectors (Nutt & McLennan 2000). However, as previously stated, the management of large complex facilities was not a new discipline. "Many municipal public works directors, corporate facility managers, or collegiate plant administrators were formally military post engineers, public works officers or base civil engineers" (Cotts 1998), suggesting that cost-efficient FM has always been required.

This is not, of course, surprising, given that most of these industries sectors developed out of the fundamental needs of human beings. It is therefore logical to conclude that FM, being grounded in these base industry sectors, would also take on the very nature of less tangible, yet no less unimportant organic human influences found in organisational cultures as they developed (Venkatraman 1998).

Smith (2003) describes the very nature of a facility itself as an agent of change. A facility, as an agent of change, can be an agent of meshing cultures. There are three basic types. They are:

- The culture that exists within an organisation that is renewing its workplace
- The cultures that collide when two or more organisations merge
- The integration of the customer as an influence on the defined product value.

He further reports that the facility is the one element each of these types has in common, allowing people to grow with as it is also the tangible element of change. Because as new culture takes shape, the facility adapts with it (Goffee & Jones 1996) .

The same can be said for the FM industry itself when applied to the evolving nature of industries at large. The result is a competitive, developing, yet confusing marketplace of FM providers, FM Consultants, FM Contractors, FM Suppliers, FM Practitioners and "in-house" teams (Nutt 2000).

Today, just about every industry sector, both privately and publicly managed, has some connection with FM.

Due to different dynamics and circumstances, it seems that FM has taken on many forms and many different degrees of importance within organisations. Thus the importance of FM can not be downplayed. Without FM, in all of its multifaceted shapes, industry may eventually become affected by its omission! It has become an important and essential part of everyday life today.

Price (2003) claims that, in its widest sense, the FM industry is the largest contributor to gross national product on a worldwide scale, and that the importance of the industry to global issues (such as sustainable development and the minimisation of environmental impact) is undeniable. He claims that buildings alone consume more

resources than any other infrastructure type, including transport. Thus the quality of facilities is directly proportional to perceptions of living standards and economic progress, and even underpins the very fabric of society.

Is FM possibly becoming “too large”? Certainly FM will not disappear, but may even become too complex to sustain itself as a viable discipline. The danger is that it may lose some of its functions, or be associated more with its delivery method (mainly outsourcing) rather than its potential overall total solution to industry.

### **FAD OR STRATEGIC?**

There exists debate whether FM is a support function, or that FM is strategic and “core” to the organisation.

In his book *Moving Up in the Organization in Facilities Management*, Damiani Migs (1998, p. 1) believes that FM is largely ignored by top management compared to other areas in the organisation, and *that* “Facilities Management is considered an overhead, inefficient and nonproductive”.

He asserts that many companies consider the function of a facility manager to be at middle-level management at best, and that “Many companies have outsourced, downsized and pushed down the facilities management function even further in the organization”.

FM has also been labelled a “Fad”, just a name, or at best a created industry which is opportunistic by nature and purely a service industry. Formed simply to offer a service for a price via market forces, as opposed to an industry emerged from within an organisation’s genuine needs.

Price (2003) declares that interest in the “new workplace” is reaching fad status; and that it is showing exponential growth. However he further claims that most of this interest appears to be pushed by practitioners, advisers or professionals rather than pulled by line managers or even business and organisational theorists. He claims there was an explosion in the plethora of new terminology, as property or real estate specialists, facilities managers and workplace designers all lay claim to a (or often the) strategic role, claims for which evidence is frequently lacking.

Nutt & McLennan (2000) believe it is important to define the term FM and argue that any assumed ongoing stability in FM may originate from a stable definition and a stable scope and boundaries for FM activities.

It would be a fallacy to state that FM is a Fad without due consideration given to what FM constitutes. It would also be erroneous to judge its strategic worth without first



properly identifying its contribution to individual organisations (Trouw, F. & Oleczek, B. 2002).

It may then be found to be strategic under certain circumstances (Hallam 2000), and, more than likely, found to be intrinsically linked and possibly directed by the rise of outsourcing and the outsourcing industry.

### **2.2.2 DEFINITION**

This thesis will adopt a FM definition in a way that will allow the hypothesis to be tested. That is, one that will encompass both insourcing and outsourcing in its application.

Without such a definition, the research will have no base for application to the industry once findings are established.

The function of FM has been given a wide variety of definitions, from pure maintenance provision, to people and space management and everything in between.

As previously outlined, the FM industry has developed from diverse industries. Facilities managers come from a range of backgrounds, and it is unlikely that they will have all the experience from all the industries out of which FM developed (Best, de Valence & Langston 2003). It is therefore not surprising that there is also a multiplicity of different definitions; however, this in itself is an issue.

Before we can define what FM is, one must understand “where” FM is and what the practitioners within FM do.

FM is about infrastructure. Infrastructure such as buildings, plant and equipment, the physical space, and the resultant workflow processes. It is preferable to consider facilities as infrastructure that supports people, and FM as empowering people through provision of infrastructure that adds value to the process that it supports (Smith 2003).

### ***ORGANIC FM***

Consider the physical units of a building as the central nucleus in which human beings reside (either temporary or permanent) and extend this unit outward. Many paths of travel emerge from the nucleus; orbit around the nucleus and eventually form a complex “existence” that is infrastructure. The infrastructure’s purpose is to support human activity, which is mainly to produce goods and services (refer to Figure 3).

Facilities can therefore be said to be the infrastructure that supports business, covering land, buildings and other infrastructure such as telecommunications, equipment, furniture, security, childcare, catering, stationery, transport and satellite

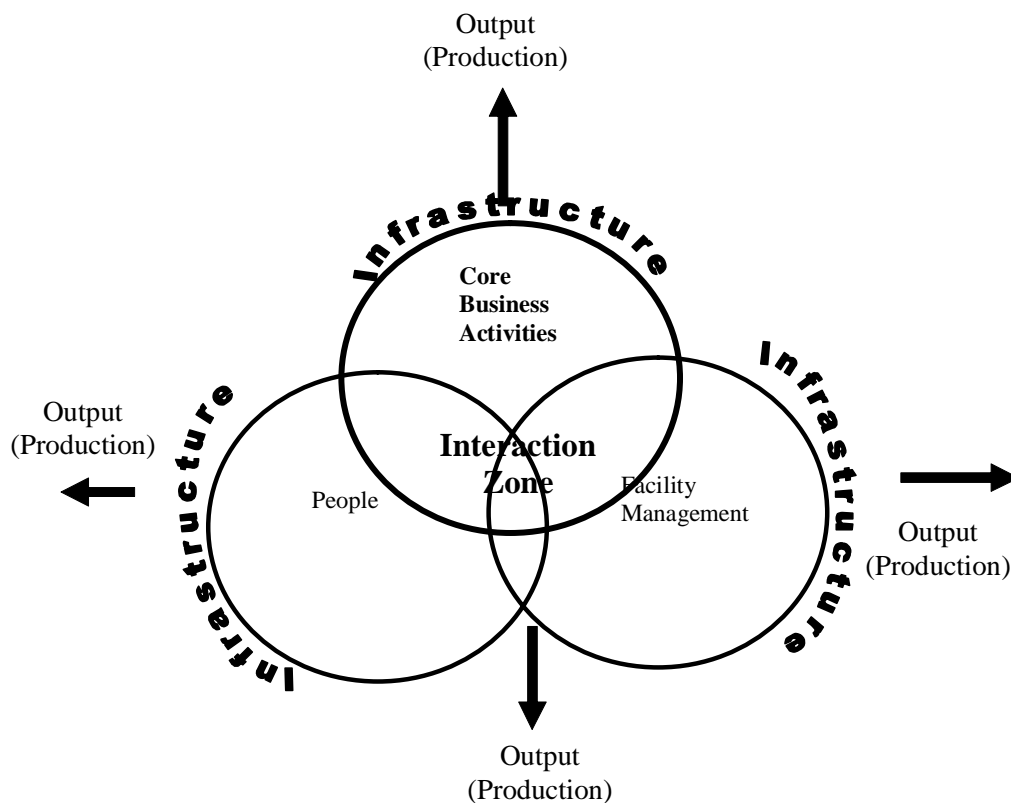
work environments such as home, car, client office etc. Facilities therefore should be seen as an integral part of an “ecosystem” enabling people (Price 2003).

Furthering this, consider a Facility Manager as the “substance” that shapes, bonds, energises and directs this infrastructure.

Facility Managers are responsible for the infrastructure to ensure it is available, operational, strategically aligned, safe and sustainable. Encouraging high productivity through continual improvement on quality, reduction of costs and the minimisation of risk (Smith 2003). The very development of FM is attributed “to a need for specialist people who can add value to business and organizations that control infrastructure”. And:

Facilities Management requires a broad knowledge base and skills that cross traditional discipline boundaries, and it shares a common strategic focus. It is a blend of technical expertise, business administration and entrepreneurialism which draws people from a range of backgrounds including architecture, design, engineering, business management, property and construction (Price 2003, p. 30).

The main point here is that FM was “formed” from the collectivising of people into organisations as they sought to produce goods and services. The traditional core disciplines with FM remain fairly constant to this day, thus FM is largely a resourcing issue. This is the main area of focus of this thesis, namely the human resources of FM and how they also collectivise to deliver FM (Alexander 2006).



**Figure 3 – A Graphical Representation of How FM Interacts**

### ***DIVERSITY***

Furthering this, the people in the FM industry can best be categorised into three areas, namely facility managers, specialist consultants and service-providers, and the distinctions between these categories are important to ensure a balance in the various roles within the FM industry (Price 2003).

Price (2003) further adds that there is an imperative that the higher strategic aspects of FM are allowed to flourish, as it is at this level that the maximum value-adding occurs (Alexander 1996). Too much emphasis on operational aspects will have the effect of slowing the growth of the profession. FM therefore has an extremely broad scope serving a wide variety of sectors and industries with different cultures, objectives and modes of operations, having local, operational, strategic and global levels of management application (Nutt 2000). There is no single definition that would easily satisfy all stakeholders (Smith 2003).

In some organisations FM is expressed as a maintenance function, however in other organisations it takes on a much wider application. It has been common practice to group FM services under delivery methods such as in-house or outsourced. This is to be expected as facilities departments are necessarily tailored to meet the individual

needs of the organisation. There are various ways to organise the facilities department; however there is no one method that will guarantee success<sup>11</sup> (Barrett 1995).

Thus the three categories of people mentioned who operate within FM could operate either internally through insourcing or externally through outsourcing. The comment by Price (2003) that FM is required to become more strategic thus becomes relevant to both forms. Any definition should consider this.

### ***A TARGETED DEFINITION***

Considering this, it could be argued that any definition given to FM should be applied directly to the sector, industry, organisation, and finally to the department level from which it has originated. This is to ensure that the given definition is meaningful and applicable.

Experience has demonstrated that facilities management departments vary considerably from organisation to organisation. They have developed in response to the specific needs of the organisation (Barrett 1995).

Smith (2003, p. 12) comments:

There is no neatly packaged dictionary definition for a facility in this context: a facility is a place for work and a place where social bonds are forged and broken, a facility is also a place for play and a place where people learn. To keep things simple, in this context, the facility to be defined, and understood, is the workplace. It is the most familiar.

However, for the purposes of this research, namely the measurement of perceived value and cost and their drivers, any definition must cover a wide and varied “workplace” environment. If FM as an “industry” is still evolving, and it is the “collectivising” of people from different disciplines that makes up FM, then a “broad definition” is required to “capture” the entirety of the function or parts of the function could be omitted.

Thus the following definition has now been formulated for FM that would suit these criteria:

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<sup>11</sup> This statement will be further examined in subsequent chapters of this thesis.

## **A FACILITY MANAGEMENT DEFINITION**

Facility Management is the activity of maintaining and further developing the physical workplace and space (environment), encompassing the entire infrastructure constituents, utilising all available resources, for the sole purpose of achieving the organisation's overall objectives.

A broad definition such as this is required in order for FM to be relevant to the varied industry sectors and organisations in the data sample used for the research. It is expected that individual organisations may adopt a different definition to suit their particular operating environments (Alexander 1996). However, as there was found to be no universally accepted "one fit" FM definition (for reasons listed previously), this broad definition will be adopted throughout the remainder of this thesis.

### **2.3 OUTSOURCING**

#### **2.3.1 HISTORY**

This definition of FM thus suggests that the function of facility management may affect the organisation's ability to maximise its productivity, either negatively or positively. It could be then furthered that FM services should be seen as an integral part of an organisation's decision-making strategies, both in the type and extent of FM service procured and delivered.

Take a typical organisation such as a department store. Management has to procure and deliver FM services to ensure the department store's infrastructure is maintained appropriately, consistently, and effectively with regard given to the specifics of the type of industry and organisation itself (for example, lighting levels, and the general ambience of the store).

This act of "procuring and delivering" FM services may consist of a varied number of approaches. In their simplest form they can be summarised as:

1. Utilisation of existing or internally placed "in-house" resources
2. Utilisation of external resources
3. A mix of both internal resources and external resources.

Barrett (1995), after researching by case study different types of organisations, in his book *Facilities management towards best practice*, comments on a further decision

relating to the choice of services, that is, whether they are to be provided in-house or contracted out<sup>12</sup> (outsourced). He claims that the latter gained in popularity, but also refers to case studies performed that demonstrated that there were no hard-and-fast rules concerning what should be kept in-house and what should be contracted out. Some organisations favour a totally in-house option, while others literally contract out every service possible and then there are those that will use a combination of both. He claims that due to the number of possibilities and issues involved, contracting out is a major subject area in itself.

Agreeing with Barrett, it is correct to say that there may be no hard-and-fast rules on whether to outsource or insource. This being the case, ignorance of both options could adversely affect decision-making. A stable definition of outsourcing and insourcing is therefore required to ensure their correct application.

It was previously hypothesised that there is a correlation between facility management procurement strategy adoption and delivery, and perceived facility management value over a given time period. And that regardless of the strategy adopted, under certain conditions, this perceived positive value versus cost ratio may degrade over time until perceived cost exceeds value, until another procurement strategy is adopted. And indeed, the furtherance of strategy adoption will continue this cycle (Luciani 2005b, 2005c; Luciani & McCormick 2006; Luciani 2004).

It is therefore important to gain an appreciation of the *development* of these main forms of FM procurement and delivery methods to investigate any existence of this cycle, and to gain insight as to why they may develop.

## ***A BRIEF HISTORY OF FACILITY MANAGEMENT OUTSOURCING***

A review of literature on these two main forms of FM procurement and their various modes of adoption historically confirms the development of cycles.

Securing “outside” services is by no means a new concept (CRC for Construction Innovation 2006). In Australia, the First Fleet arrived containing many contracted<sup>13</sup> services. In fact, subsequent fleets of ships were operated and maintained by private contractors. The same can be said for Australia’s postal service which dates back some 150 years, in fact, the majority of Government services were delivered using contracted services since the turn of the 19th century (McIntosh, Shauness & Wettenhall 1997).

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<sup>12</sup> The term “contracted out” will be further defined in subsequent chapters of the thesis; however it is not to be confused as sub-contracting – depending on the context given.

Domberger (1998) adds that contracting of mail delivery and postal services In Australia goes back over 150 years, and that the mail delivery was entrusted to private operators prior to the formation of Australia's official mail network. He points out that this was similar in the USA during much of the nineteenth century.

Also, the use of “outside” service-providers in America can be traced back as far as 1492, when King Ferdinand and Queen Isabella contracted Christopher Columbus to find the “New World” for the Spanish Crown (Savas 1988).

As previously established, in its simplest form, the history of FM can be traced back to base industries and disciplines such as architecture, engineering and public works activities. Similarly, outsourcing (sometimes referred to as contracting out) seems to have had a parallel development.

In their book *Contracting out in Australia – an indicative history*, McIntosh, Shauness & Wettenhall (1997) outline this history from very early beginnings. They explain that after the early private firms’ foray into Australia during settlement, work was then undertaken from an employee/employer relationship, that is, without use of private firms. This is attributed to a nation built on immigrant labour, namely the convicts of the first settlement. These “government servants” (Convicts) embarked on a wide variety of developmental and commercial activities (Bland 1945), including the design, construction and maintenance of mills, mines, public buildings, port facilities, bridges and roads. They explain this era to be the “infrastructural impetus” (Cusack, Notermans & Rein 1989); (Castles 1989) for the high public employment levels of the time (P14).

Once transportation of convicts ceased, this impetus subsided and governments had to look elsewhere for labour. This was the beginning of a shift back towards contracting out for services in Australia, as governments sought the services of private firms to complete public works. Newitt (1988, pp. 132,246) adds:

... an official bicentenary commemoration volume records that, in the early period, roads were built “largely by the forced labour of the transported felony of Britain”. On instructions from the British government, however, Lieutenant-Governor Arthur had somewhat reluctantly made a place for private contractors. From 1833 the government contracted with them to undertake particular projects, and the convicts now worked for the contractors!

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<sup>13</sup> The term “contracted” is widely used in the public sector and more resembles outsourcing than sub-contracting. This will be further examined in subsequent chapters of the thesis.

At the same time, the private sector in England also embarked on the contracting of services in areas such as specialist metal manufacturing, prison management, road maintenance, the collection of public revenue, and refuse collection. Street lamps were made, fixed, cleaned, and lit under contract (Domberger 1998).

Some twenty years later, difficulties in contract labour began to surface in Australia, where the authorities of the time noted dishonest work, ignorance of the business they were working for, and covering up of poor workmanship, which no amount of supervision could rectify.

However, it wasn't until the 1890s that these services were being brought back in-house, through use of direct government labour under the public works system.

By 1891 the building and construction industry of NSW comprised fourteen per cent of the labour force, all contracted out. The public works formed a substantial component of this industry. However, due to the then dissatisfaction with this contract labour, by 1901 most contract labour was replaced with day labour directly employed by the Public Works Department.

Sheldon (1989) claims that it was the largest industrial organisation in the southern hemisphere.

Similarly, in continental Europe, just before and during the industrial revolution, contracting out services was the preferred procurement method for organisational production (Domberger 1998).

In these "Victorian times", firms were small and loosely co-ordinated with plentiful labour and stable product markets and supervision was in the hands of "gang masters" working for an owner or manager (Reilly & Tamkin 1996). However, from the mid-nineteenth century up to the end of the twentieth century (excluding the last twenty odd years or so), the dominant procurement and delivery methodology was by internal means rather than contracting out – abandoning the early contracting methods (Domberger 1998).

So not only does history recognise the two main forms of procuring and delivering FM, it also may be indicating that a level of cycling between them may have existed when considering a very long term view. This is not an unreasonable proposition, given that the internal labour market seemed linked with the rise of the "organisation" and the development of the FM industry seemed linked to the rise of Outsourcing. Both these emerging trends could be in direct conflict, especially during growth stages.

Political motivated ideology may have also played some role in the shifting forms of procuring and delivering FM throughout history. There is some consensus that governments are also motivated to shift procurement strategies dependant on the degree of political support (Carver, 1989; Ferris, 1986; Hirsch, 1995; Lavery, 1999;



O'Looney, 1998). It is, however, not intended to investigate this dynamic in detail. For the purposes of this thesis, focus is to be given to investigating contemporary drivers of cost and value as they relate to FM, notwithstanding political motivations.

### ***SHIFTING TRENDS***

However, this possible cycle from contracting out to in-house and back again has seemed to be evident throughout the subsequent decades in both the public and the private sectors to this day (Administrative Review Council 1998).

Domberger (1998) explains that two reinforcing tendencies played an important part in this reversal from contracting to in-house. The first was the growth of direct government involvement in economic activity, particularly in continental Europe, the UK, Australia, and New Zealand. The second was the development of production technologies that favoured large, vertically integrated enterprises in both the private and the public sectors.

This trend will be discussed further in subsequent chapters, however, from 1950 to 1970 large vertically integrated and diversified companies flourished (Greaver 1999) (McEntee 1985). In fact, after the Second World War, large diversified companies became commonplace for the model of organising production activities – with the belief that there was “security in size”.

However, Domberger (1998) adds that since about the mid-1980s, with the onset of harsher and volatile trading conditions, the vulnerable nature of the corporate behemoths were becoming highly visible.

It was said that by their very nature and large size they stifled entrepreneurship. The result was a move away from this organisational structure and internal integration, or “in-house”, towards small diversified and outsourced production (Greaver 1999).

One notable development, particularly in FM procurement trends, then took place in the 1980s. Organisations began downsizing and re-engineering their structures. Large organisations outsourced more and more of their services to outside providers.

Thus there is a suggestion that both forms of procuring and delivering FM are effective under different circumstances, however, both have unique attributes driving perceived value and cost in different areas under different conditions.

### ***PARALLEL DEVELOPMENT – OUTSOURCING AND THE FM “INDUSTRY”***

As previously outlined, this occurred at about the same time as when the FM industry began to take shape. This outsourcing trend therefore extended into the FM industry,

both from a client perspective and a service-provider perspective. Barrett (1995) states that this trend resulted in the outsourcing of all non-core business activities (Salvetti & Schell 1995). Such as a broad range of support services, mechanical/electrical and fabric maintenance, internal painting and landscaping, security, cleaning, catering, vending, and the supply of general clerical staff, telephonists, receptionists, mailroom, messengers, chauffeurs.

It was becoming popular to downsize organisational structures. Terms such as rightsizing then followed, in particular for the administration departments. Staff reductions were accomplished by increasingly contracting out functions (Cotts 1998). This organisational change pattern had a profound effect on business operations and staff.

Teicher, Holland & Van Gramberg (2000) report that according to an Australian Workplace and Industrial Relations Survey (1995: 408), agency employment more than doubled between 1990 and 1995, and organisations using agency staff also increased from 14 to 21 per cent for the same period.

Teicher, Holland & Van Gramberg (2000) also state that further analysis of this data revealed an annual growth of 7.5 per cent in the use of contractors and their employees, compared to a 1.6 per cent per annum growth in direct employment (Wooden, 1999; AWIRS, 1995).

This shift in staffing and job roles directly affected Facilities Managers, as either the change instigators or managers of change decisions.

Best, De Valence & Langston (2003) claim that a large part of the functions of many facilities managers is the management of outsourced services. Activities such as monitoring the level of service, selecting providers, negotiating, and managing and reviewing service contracts.

Teicher, Holland & Van Gramberg (2000) claim that in Australia this trend to outsourcing during this time was the result of downsizing in the sense of workforce reductions, resulting in some form of strategic intention<sup>14</sup> – with the public sector being the leader for these initiatives. And as such, the *“spread of outsourcing occurred at the same time as a process of labour market de-regulation which lowered the locus of employment regulation from industrial tribunals to the workplace. This led to an increase in the types and varieties of contract-based employee relations”* (refer to Flow Chart 1<sup>15</sup>).

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<sup>14</sup> “Strategic intention” infers pre-determined government policy.

<sup>15</sup> The flow charts are a graphical representation of the content throughout this thesis and are not necessarily based on causality or chronology.

During this period contract values awarded by the NSW Government alone amounted to \$1.5 Billion in 1995, a significant growth over the \$500 million from just a decade or so earlier. Building maintenance was one of the most commonly contracted services (Domberger & Hall 1996).

Teicher, Holland & Van Gramberg (2000) further claim that in the public sector the use of contracting out, particularly in Victoria, was widespread, with utilities at the forefront of changes. They claim that a report (the AWIRS (1995)) found that among twelve industry groups outsourcing was highest in public utilities (69 per cent of respondent firms) and fifth highest in government administration (52 per cent).

This public-sector-driven outsourcing development (Aulich 2005); (FMlink 2002a); (FMlink 2002b) was also happening in other parts of the world, where a widespread shift towards outsourcing and competitive tendering was spearheaded by local authorities (Payne 2000); (Bishop, Kay & Mayer 1994).

As Domberger (1998, p. 9) observes:

With the coming of the Thatcher era, the frontiers of the state began to be rolled back in earnest, first in Great Britain, then in other Anglo-Saxon countries such as Australia and New Zealand.

Thus there seemingly was a need to “correct” the insourced management in organisations and outsourcing was the most effective solution. This is to be expected as; post the rise of the “organisation”, FM was emerging as the answer for managing this newly developed associated infrastructure. Many organisations believed that this was best serviced externally and not of strategic importance to the firm.

## ***OUTSOURCING – AN ATTEMPT FOR EFFICIENCY***

As previously stated, it was argued that this outsourcing trend was directly attributed to the organisational structure of the time (for both the private and public sectors) being heavily hierarchical in nature, with large numbers of middle management.

Drucker (1990), in an article in the *Wall Street Journal*, supports this view by claiming that in-house support services (such as FM) within organisations have become de-facto monopolies with little productivity incentives, due to lethargy. When required to improve productivity, more staff are then likely to be employed, thus perpetuating the problem. It is therefore argued that outsourcing relieves this situation.

Also, due to the rapid advancement of technology (Salvetti & Schell 1995); (Doherty 2002); (Robinson & Kalakota 2004); (Bartel 2005) globalisation (Burdon 2004);

(Eades et al 2002), and improved communications, management structures became notably flatter in many organisations, with many of these redundant middle managers being used in new, often technical specialists, roles that reflect the organisations' changing circumstances (Heywood 2001).

Greaver (1999), in his book *Strategic Outsourcing*, concurs by adding that this embracement of outsourcing was a result of a changing of the traditional workforce of full-time workers, wherein organisations had downsized, stripping away whole layers of middle management .

Thus, outsourcing or contracting, as the predominant method of delivering FM services, experienced growth and diversity. According to a P&O commissioned report, 70% of facilities managers in the UK expanded their contracting out operations in the period 1988–1990 (Cotts 1998). This trend was also taking place in Australia – notably in the public sector where, from 1994 to 1996, there was a dramatic increase in the spend and number of contracts let using contracting-out arrangements (Domberger & Hall 1996); (El-Haram & Agapiou 2002).

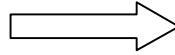
According to a report undertaken by the International Facility Management Association (1999), the use of outsourcing for FM services was expected to increase for the next five years (however, 22% of facilities managers surveyed had started to bring services back in-house).

Globally, the outsourcing market in general went from an estimated US \$41 billion in 1996 to US \$107 billion in 2001. This is supported by research undertaken by the PA consulting group, which reported that the average number of functions outsourced by organisations was 225 over the past five years and, they state, will go on growing (Amiti 2004; Corbett 1998). At present the most frequently outsourced activities are property services (FMlink 2002d); (Lyne 2002), catering and information technology, however, there is now clear evidence that outsourcing is moving from peripheral activities towards more central ones (Oates 1998) .

**Flow Chart 1 –The Rise of FM and Outsourcing**

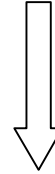
**Existing Base Function**

The function of Facility Management has been evident from early beginnings under different banners, for example, engineering, maintenance, building technicians.



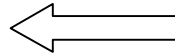
**An Emerging Discipline**

Facility Management recognised as a discipline from 1970–1990 with the modern office evolution & the increase in the health sector.



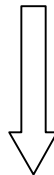
**Workplace Importance**

Facility Management recognised as a valuable conduit between people and infrastructure.

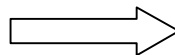


Facility Management becoming established as an industry with the increased rise of outsourcing.

**An Emerging Industry**



Debate emerged as to whether Facility Management is recognised as a strategic function within organisations.



**In/Outsourced Delivery**

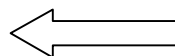
Facility Management delivered through both insourced and outsourced methods, however, outsourcing linked more to the “label” of Facility Management.



**Strategic Worth?**

**An Outsourcing Industry**

Outsourcing and the “industry” of Facility Management now the dominant trend in Australia.



Facility Management delivery becoming cyclical in nature (i.e., insourced to outsourced etc.).

**Cyclical Delivery**

This then leads to the observation that growth of FM has been largely driven by outsourcing (refer to Flow Chart 1).

Best, de Valence & Langston (2003, p. 399) state that “the future of FM and the industry’s potential for growth are connected to the extent of outsourcing of the FM function by property owners and users”.

However, this “corrective action” by the utilisation of outsourcing may have reached its effectiveness as insourcing becomes a viable option once again (Damiani Migs 1998). This then puts the rise of FM in the spot light once again.

### ***FM SURVIVAL LINKED TO ITS STRATEGIC WORTH?***

Best, de Valence & Langston (2003) and Drucker (1995) also add that FM itself is not yet recognised as strategic. In a presentation to the FMA, de Valence (2004, p. 1) claimed that “This has left FM in something of a quandary – how can FM overcome this skepticism and reach its full potential” (that FM is reliant on outsourcing yet not considered strategic).

Price (2003) adds that FM had enjoyed an evolutionary bloom radiating from its original niche into a range of others by virtue of the fact that most organisational activities still need a facility. Additionally, while the idea that businesses use their facilities as a strategic resource is not controversial, the claim that FM itself is essentially strategic in nature, rather than operational, has not been widely accepted by senior management.

The argument as to whether FM is a strategic function, or can become a strategic function, has been widely debated (Nutt & McLennan 2000); (Nutt 2000).

In a further study conducted by the International Facility Management Association (1997), it was found that two thirds of respondents claimed that the organisation had a strategic plan for its facilities management. The report went on to say that cross-examination of these findings showed little support for this claim, based on the inability for Facilities Managers to distinguish between FM strategic plans and other strategic plans developed within the organisations.

Curiously, this perceived link between strategic influence and survival of FM was also applicable to FM delivered via in-house methods. The report makes further observations and states that the challenge for facilities managers facing outsourcing is to demonstrate to senior management that the facilities management function is a core function which makes a positive impact on an organisation’s productivity and competitiveness.

This “strategic” view linked to outsourcing growth is supported throughout the literature. Payne (2000) argues that FM outsourcing must take on a more strategic view, especially in “what” is outsourced, to ensure a balance between what the “market” will accept and what is good for the organisation. This is supported by Nutt & McLennan (2000, pp. 29, 248) who believes that “One of the biggest outsourcing challenges is driven by the disparity between the business world’s needs and the property world’s offering”. They further claims that in order for FM to be a strategic lever for business, then there needs to be a focus on core business issues that are synergistic and business outcome orientated. And that:

At the start of the new millennium our experience shows that to support future business need a fundamental change in facilities management must occur with our priorities shifting in balance from tactical management to strategic direction.

Oates (1998, p. 6) further adds that there is a significant shift in attitudes to outsourcing as most companies now see it as a strategic tool and not just a cost-cutting exercise. He adds:

Writing in a special supplement on outsourcing on the 28th May 1997 issue of the Daily Telegraph, Nuala Moran notes: “The search for multiple and strategic benefits signals a new stage in the development of the outsourcing market. Rather than merely a way to reduce costs, it is now perceived as a route to improve business performance and competitive strength”.

Considering this, it could be argued that FM's failure to become perceived as truly strategic, and given that FM's outsourcing's growth itself could be linked to FM being strategic, there may be a shift back towards integration, namely in-house provision of FM Services, as firms become reluctant to outsource.

In his article “Outsourcing: Ensuring survival with strategic global partners”, Incognito (2002) asserts that the outsourcing industry will see customers going back inside, a trend never seen in the last twenty years. He claims that this is because of potential cost savings but, more importantly, the inability of their outsource provider to anticipate their requirements and switch to proactive cost-savings solutions. He links this reversal to the managing facility professionals measuring the overall performance of their respective outsource providers and discovering that the contract is not

delivering the value anticipated. He believes that, overall, it may become apparent that, at best, the entire outsource experience has been a break sparking a trend to insourcing.

However, FM becoming strategic or not could be irrelevant under these conditions, as would be the notion that the FM industry's growth is intrinsically linked with the growth of outsourcing.

If there were to be a shift back to in-house FM delivery, FM thus would have become a critical function, whether strategic or not, no longer reliant on outsourcing to deliver results. This would therefore perpetuate any industry-wide cycling.

Thus there is some supporting evidence throughout literature that, when researching the history of outsourcing, contracting out, and in-house FM delivery, there may exist evidence of cycles through the various forms of FM procurement strategies and delivery methods.

This will be further investigated in subsequent chapters of this thesis.

### **2.3.2 DEFINITION – OUTSOURCING**

Thus it is important to not only define outsourcing but to also separate it from FM, if we are to identify the “stand-alone” benefits of the FM function.

Also, understanding that such cycles and trends may exist, it is therefore important to gain an understanding of just what *defines* the various FM procurement strategies and delivery methods. That is, if we are to effectively understand why these trends take place. This is important and essential to effectively measure both the perceived cost and value associated with insourced and outsourced FM. Any incorrect application of either method may cause inefficiency, which may lead to the cause of cycling or “switching” between the two.

As can be seen through history, various methodologies have been used to procure and deliver FM services. Throughout the body of knowledge there have been many variations on what to call these strategies. Terms such as outsourcing, Insourcing, out-tasking, contracting out, in-house services, partnering, and other terms have been used to describe procurement strategies and delivery methods for goods and services relating to FM.

It seems, however, that these terms are used differently according to who is using them. For example, a service supplier/-provider typically uses the term outsourcing, whilst a Facilities Manager within an organisation may use the term contracting out. Also, the type of industry also bears on a definition of procurement and delivery strategy. For example, in the manufacturing sector the term “maintenance” is



heavily used to define what is being provided, however, this term is not used in the sense of building maintenance but mainly for plant and equipment maintenance. In the information technology sector, the term “FM” has meant information technology support functions and not the definition of FM given in the preceding chapters of this thesis.

Public-sector organisations also use the terms “contracting out” and “competitive tendering”, rather than outsourcing. However, in the private sector, the term outsourcing is almost exclusively used to define a procurement and delivery strategy that utilises an external resource – where competition is assumed within this process.

The term “outsourcing”, therefore, can refer to any situation wherein an organisation or company enters into a contract with another “external” organisation or individual (Hidaka 1999). It is assumed that these services can also be performed in-house if preferred, without seeking these external organisations or individuals.

A standard definition is given as “to obtain (goods, etc., esp. component part) by contract from a source outside an organization or area; to contract (work) out (OED 1993).

Notice the use of the term “contract work out”. Others make a distinction between the terms “outsourcing” and “contracting out” to distinguish between simply entering into a contract to supply services that could equally be undertaken in house, to that of *transferring* an *existing* in-house function – including assets, people and management responsibility to an external provider (Barrett 1995).

### **THE “TRANSFER” DYNAMIC**

This definition of outsourcing is based on the presumption that there is a transfer of *control*. It is said to differentiate outsourcing from other business relationships in which the buyer retains control of the *process* (Bendor-Samuel 2000).

Bendor-Samuel (2000, p. 28) further adds that: “It is the transfer of ownership that defines outsourcing and often makes it such a challenging, painful process”. And “The concept of process ownership is the single most misunderstood concept in outsourcing.”

He thus makes a clear distinction between outsourcing and contracting, whereby, with contracting, the buyer retains ownership of the process and is under a contract for the procurement of the goods or services. However, if ownership of the process is with the supplier, then it is an outsourcing arrangement.

Katsanis (2003, p. 388) concurs with this, by adding:

Outsourcing, as an organizational variable, may be defined as the output generated by assets outside the direct control of a principal organization. In this definition, output refers to products or services and assets refers to the physical or intellectual resources that an organisation owns or has under its direct control.

This view of *transferring the process as a distinct quality of outsourcing* is supported by Teicher, Holland & Van Gramberg (2000), who also believe that outsourcing involves the transfer of assets from an organisation to a service vendor. They add that it is where the responsibility is also transferred for the outsourced activity for the duration of a long-term contract.

However, in their reasoning they further add that the work may be performed outside the workplace by contracting to another organisation or within the workplace by staff contracted by the service-supplier. The duration of employment is fixed either for a specific project or for a specified time.

Thus it can be confidently stated that FM work that is “out-tasked” or sub-contracted seems to be excluded from an outsourcing definition due to no or little transfer of control and ownership. This is an important distinction, as it may have signalled the separation of “FM” from being automatically associated with outsourcing.

### ***SPECIFIC TIME DYNAMIC***

However, it is also important to note the use of a *time frame* within their definition of outsourcing. This specified time frame suggests that an integral part of outsourcing is to include a specified time frame. This may be an attempt to differentiate from normal traditional staff placement strategies.

However, reference to a time frame, possibly erroneously, is not always used in defining outsourcing. Human resources departments use the term outsourcing to include any act of utilising outside independent workers to conduct work-related tasks, including the use of agency temporaries, contingent workers, contract workers, part-time workers, and outsourcing firms (Nelson-Nesvig 1998).

Nowhere in this definition does the word employee appear. If an employee/employer relationship exists between the two parties this may not be considered an act of outsourcing. (Nelson-Nesvig 1998)

Under these conditions, long-standing partnerships or “similar relationships” such as joint ventures (that do not have a specific time period as a contractual obligation), could now be excluded from a possible definition of outsourcing. Given that FM is

usually a long-term permanent requirement of an organisation, this will seem to further separate FM from being intrinsically associated with outsourcing.

### ***NON-EMPLOYEE/EMPLOYER DYNAMIC***

However, this employee/employer distinction alone may not be sufficient to define an outsourced arrangement. Many employers regard independent contractors and consultants, who may have been former employees, as outsource providers; whereas in reality they really resemble an employee/employer relationship. This is because the hiring organisation can exercise considerable control over the individual, thus making distinction between employee/employer difficult (Johnson 1997).

This difficulty in distinguishing what is an employee/employer relationship also has legal and social ramifications attached. In Australia and in the USA, it is common for courts to make this employee/employer versus client/supplier distinction by identifying the type and level of control which the organisation has over the worker. Should it be found that certain aspects of their (the workers) compensation and terms and conditions of employment are similar to those of a direct employee, then they are to be treated as employees.

Nelson-Nesvig (1998) further adds:

Washington watches intently for evasive behaviour from employers who would intentionally classify employees as independent contractors to avoid paying taxes or benefits. As a check and balance, the IRS has created special task forces to conduct employment audits of small and medium-size employers who consistently rely on independent contractors.

Similar problems have been experienced in other parts of the world, resulting in similar legislation. In Europe there is the "Acquired Rights Directive" legislated under the European Union Directive. In England there is the "Transfer of Undertakings" legislation, namely the Protection of Employment Regulations 1981 (TUPE).

This legislation was implemented to protect employees' rights in the event of transferring over to an outsourcing relationship. It is intended in part to put rigour around the distinction between the employee/employer relationship and a client/service-provider relationship (Barrett 1995); (Reid-Thomas & Phillips 2005). The regulations apply when an undertaking or part of an undertaking is transferred from one employer to another (Heywood 2001). Therefore, any reference to a worker being an outsource provider must first be tested under this legislation.

Considering this, any definition of outsourcing that is not conducive with vertical disintegration (that is, not under hierarchical internal control, as would be the case with any employee/employer relationship within an organisation) should be discounted.

This distinction is supported through literature by others who argue that outsourcing is the contracting of any service to a third-party organisation with the aim of vertical disintegration (Langefield-Smith, Stringer & Smith 2000).

This then contradicts claims for embedded outsourcing within an organisation by merely switching ownership of staff under contract – thus making a distinction between mere labour transfer and that of performing a new function for a specified time as a service-provider.

Greaver's (1999, p. 1) definition of outsourcing supports this view:

Outsourcing is the act of transferring some of a company's recurring internal activities and decision rights to outside providers, as set forth in a contract. Because the activities are recurring and a contract is used, outsourcing goes beyond the use of consultants. As a matter of practice, not only are the activities transferred, but the factors of production and decision rights often are too. Factors of production are the resources that make the activities occur and include people, facilities, equipment, technology, and other assets. Decision rights are the responsibilities for making decisions over certain elements of the activities transferred."

Heywood (2001, p. 27) also supports the view that outsourcing includes the transfer of staff and further supports the view that there is a time frame attached. He defines outsourcing as:

... the transferring of an internal business function or functions, plus any associated assets to an external supplier of service provider who offers a defined service for a specified period of time, at an agreed but probably qualified price.

In fact, proponents of outsourcing as a preferred method of procuring goods and services claim that market forces coupled with long-term contracts are to be preferred over spot transactions (as would be the case with contracting out). This thus supports the view that true outsourcing exists under contract rather than on an as-needed basis (Domberger 1998).

It is also argued that a distinction between new work and work “previously undertaken” should be included in any definition of outsourcing. True outsourcing usually takes place when there is a transfer from an existing function, further supporting a stronger definition of outsourcing using transfer as a defining attribute (Reilly & Tamkin 1996). However, this may not be an essential defining quality on its own.

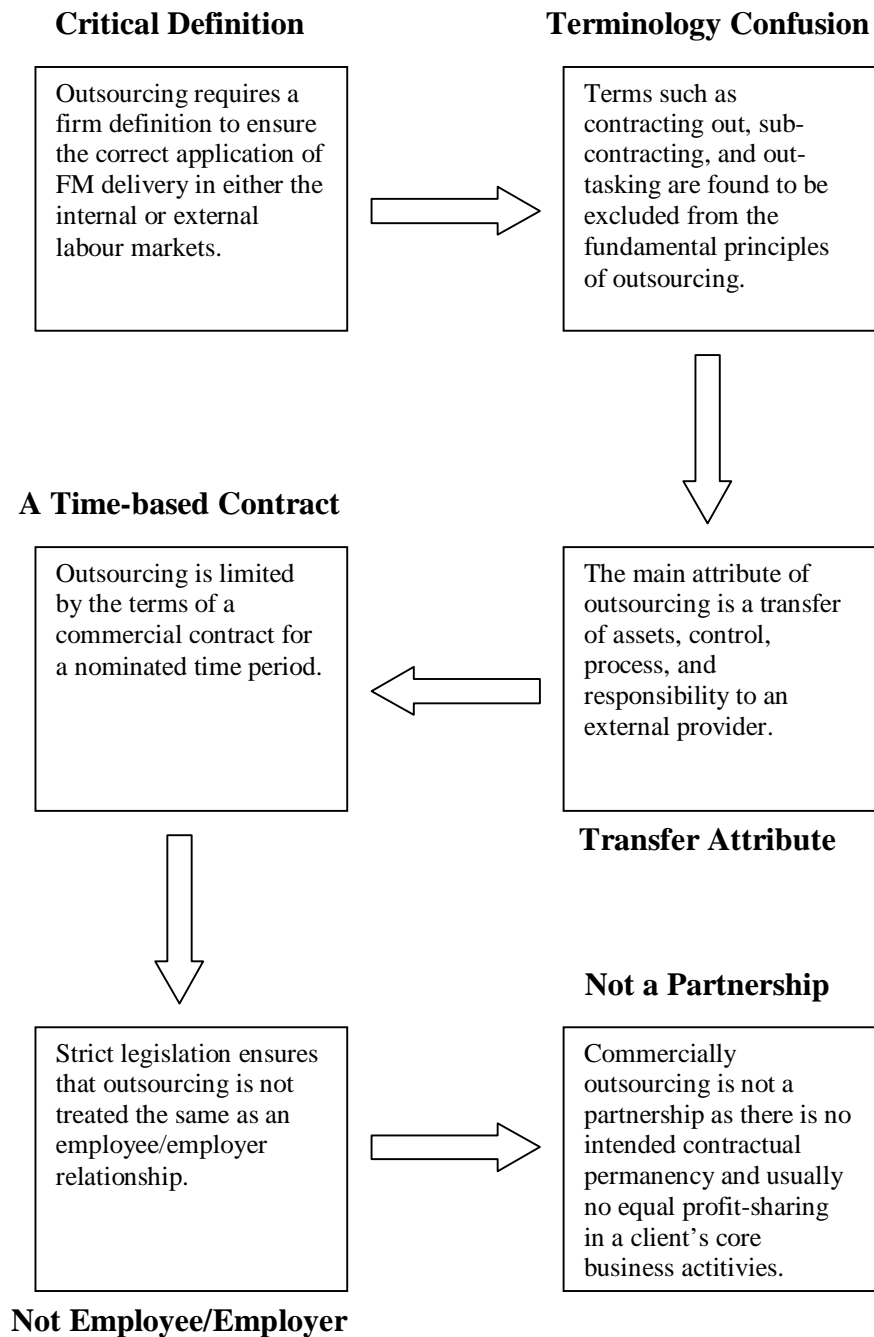
Many longstanding sub-contractor arrangements resemble more of an employee/employer relationship than they do outsourcers. And given that recently sub-contracting has been a popular method of delivering FM for both In-house teams and outsource providers, there could be some suggestion that not only is FM becoming more “stand alone” from its association with outsourcing, but also may be indicating a shift to insourcing, should the parameters of these definitions be applied.

### ***OUTSOURCING NOT A STRICT PARTNERSHIP***

Considering outsourcing as a transfer of assets and control, it has recently been argued that outsourcing should continually be evolving into more of a partnership between two parties for mutual benefit which is not like any other customer/supplier arrangement (Williams 1998); (CRC for Construction Innovation 2006); (Cunic 2003); (Sommerhoff 1998); (University of Technology Sydney, Transfield Services Ltd & Boston Consulting Group 2004). William's view of outsourcing is based on a partnership wherein both companies should be prepared to share in the profits and losses throughout the term of the contract (Kakabadse & Kakabadse 2002); (Todeva & Knoke 2005); (DeFrieze 2001).

Note the use of the term “contract”, it is implied in this definition that a formal instrument is used to bind the parties. This is an important “trademark” of an outsourcing arrangement, however it could be argued that a contract is, in-fact, not always present to the same extent in a partnering arrangement.

However, others view partnering as a management process generated to solve problems created by this very traditional organisational/contractual process (Marcella 1995) (refer to Flow Chart 2).



**Flow Chart 2 – Outsourcing Definition**

This view of a partnership is also supported by Katsanis (2003, p. 384), who also does not support William's view. He states that partnering is not really outsourcing and may be a result of adversarial contract management between both parties usually resulting in litigation for remedy, which has resulted in "... other collaborative contractual arrangements such as partnering".

Thus the claim that the term partner implies ownership bound under a permanent relationship, whereas in outsourcing there is no such permanency (Bendor-Samuel 2000).

Assuming that FM and outsourcing were inseparable, then there would be a lot more partnerships in existence as infrastructure matured. This is simply not the case, indicating further that FM is a stand-alone function, as is outsourcing. Thus, for the purposes of this thesis, partnering will be discounted as contributing to a definition of outsourcing.

However, this is not to say that partnering, or alliances, are not practiced as a method to deliver FM. On the contrary it has been reported that alliance/performance based contracts are growing as a percentage of FM procurement and delivery methods (Burdon 2004); (CRC for Construction Innovation 2006); (Ventovuori 2007). Burdon further argues that these alliances are in-fact second generation outsourcing contracts which have evolved over time (usually after the first three years) to become more of a partnership built on trust (Eilenberg 1996) and flexibility through a closer relationship between the parties (Kakabadse & Kakabadse 2005).

If this is to be accepted, then it is argued that the definition of outsourcing adopted in this thesis, which is assumed applicable under the first generation contract mentioned, is no longer applicable in the new second generation environment due to the introduction of mutuality of outcomes<sup>16</sup>. Certainly the contract conditions would have to change to accommodate this evolved relationship built on trust and flexibility (and in some cases profit share). Thus it is assumed that partnerships and alliances are excluded as an outsourcing relationship as defined in this thesis. In this context the research in this thesis, therefore, addresses first generation outsourcing contracts.

The term "out-tasking" has also been identified by some as separate from outsourcing again, in that it is used in lieu of outsourcing when a firm hires individual *specialised* vendors for certain tasks (International Facility Management Association 1999).

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<sup>16</sup> Partnering and or alliances may include a mutual share between two parties on risk, profit, decision making, strategy development, resource management, capital investment, asset ownership, and intellectual property

But it may still be considered similar in meaning to the term outsourcing, as long as transfer and ownership of process resided with the out-tasked vendor. This should not be confused with sub-contracting<sup>17</sup>, where there is merely an assignment of tasks with little real transfer of ownership, control, and financial risk for a specified period of time under contract. Thus for the purposes of this thesis, out-tasking will be given to mean outsourcing, as long as it falls within the framework described, however, sub-contracting will not be included in any definition given for outsourcing.

Thus the adopted definition for external resource procurement strategies and delivery for FM, known herein as outsourcing for the remainder of this thesis, will be:

*The procurement of goods and services from an external provider where there is a transfer of ownership and control of processes and or assets for a specified period of time, under the terms and provision of a contract.*

## **2.4 CONCLUSIONS**

It was resolved that the “function” of FM began at an early period in Australian history, however, the term FM was only used in the last twenty years or so and that this coincided with a rise in outsourcing.

It was also established that during this period the focus was on cost-cutting and the short-term objectives of the organization. Usually focus was given to the office and health sectors and their environments. However, a further review of the history of FM from that point forward indicated a broadening of FM Services with a focus on core business enhancement. It was also suggested that survival of FM as an emerging “industry” in its own right may be dependent on its becoming more strategic in nature. And that a reliable definition played an important part in this regard.

Infrastructure plays the pivotal role in defining FM.

Due to the wide range of definitions that could be given to FM, it was established that a definition should be tailored for the specifics of the target organization., Alternatively, it may be defined in broad terms, depending on its intended use, as FM was found to be an integral part of the productivity matrix within an organization. Delivery of which was then summarised into resource allocation from within, external, or both.

There was also some suggestion from history of a cycling through these two main types of procurement strategies – which may directly affect FM delivery.

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<sup>17</sup> It is assumed that in most cases the client organisation would procure the services of a sub-contractor directly. Meaning that an organisation acts as the principle contractor without an outsource provider.



That is, the choice of FM procurement and delivery strategies may also be linked with its being considered a strategic decision. Functions that are considered strategic are being considered more and more for outsourcing. This indicated that the current trend, to outsource FM, may shift back towards integration – should FM found not to be a strategic function, thus alluding to a cycle phase continuum.

It was also established that there was a distinction between the terms outsourcing and contracting out. The former involves a complete transfer of control, process, and assets for a specified time under contract. The latter did not, thus being excluded from a definition of outsourcing, along with sub-contracting.

Having now established the boundaries of both FM and its two main forms of delivery, further investigation of these two delivery methods will allow critical appraisal of their influencing variables.

## CHAPTER THREE

### FACILITY MANAGEMENT PROCUREMENT and DELIVERY: A REVIEW OF CURRENT PRACTICE

#### 3.1 PURPOSE AND APPROACH

The purpose of this chapter is to further investigate the identified Facility Management procurement and delivery strategies adopted by the industry.

A critical appraisal of each type of the two main forms of procurement strategy and delivery will be undertaken, with a review of the underlying theory.

Influencing variables surrounding the decision-making process for each type of procurement and delivery strategy will be identified, documenting emergent issues for the purpose of constructing a conceptual framework for the research.

This will constitute a literature review of the procurement and delivery of FM, wherein FM is defined as:

*The activity of maintaining and further developing the physical workplace and space, encompassing the entire infrastructure constituents, utilising all available resources, for the sole purpose of achieving the organisation's overall objectives.*

The review will focus on the two main types of FM procurement and delivery strategies identified, being:

1. Internal resource procurement and delivery (herein known as insourcing)
2. External resource procurement and delivery (herein known as outsourcing)

Therefore, through this literature review, it is intended to develop the unique and independent attributes of insourcing and outsourcing. This will allow for commentary on their individual interaction and impact on the function of FM

For the purposes of clarity, the adopted definition for the external resource procurement and delivery strategy will be:

*The procurement of goods and services from an external provider where there is a transfer of ownership and control of processes and or assets, for a specified period of time, under the terms and provision of a contract.*

The definitions of outsourcing and facility management adopted will help contextualise the review process. This will allow for an “industry-wide” application of this thesis and its findings. This is important, as it will allow a holistic capture of perceived value and cost and their associated drivers for the FM function. Thus, this will provide for complete separation of the Internal Labour Market (ILM) (insourcing) and the External Labour Market (ELM) (outsourcing).

### **3.2 INTERNAL FM PROCUREMENT AND DELIVERY**

Organisations are the dominant feature of contemporary society. They are the primary vehicle for accomplishing collective purposes, whether the purpose be to engage in business or other economic activities, to put a man on the moon, or to govern ourselves (Pinfield 1995).

Of course these “organisations” referred to by Pinfield have FM requirements. Usually there is a core management responsibility held within the organization (regardless of whether the function is outsourced or not), which, it is strongly argued, has the discretion to outsource or insource part or the whole of its FM function. As such, and when considering the adopted outsourcing definition, this is a “misunderstood” concept.

#### **STRUCTURE VARIANTS**

Organising the internal facilities department is influenced by a number of factors such as the type, size, and span of control, whether a single site or multiple site portfolio; private or public sector, centralised or decentralised operations. However, all facilities managers must perform the same basic functions for the organisation.

Little work has been undertaken on the role and structure of internal FM departments throughout the body of knowledge, which some claim is a neglected area (Cotts 1998).

A survey conducted by the International Facility Management Association (1999) reported that only half of the respondents’ organisations undertook formal structured

performance reviews of facilities operations, with 17% never performing such reviews at all, and manufacturing and production facilities the least likely to conduct formal reviews.

Some argue that an important factor in organising the facilities management function is the geographical location of the organisation (Barrett 1995). Others support this geographical consideration as influencing delivery of facilities services on a centralised or decentralised basis (Cotts 1998).

This is important, as it will affect decision-making policies and ultimately impact on the choice of FM procurement options.

Cotts (1998) states that an organisation with branch offices spread across a state has to give each office some autonomy in facility matters or run the risk of paralysis through centralisation. He goes on to say that this is so even though the latter generally is the most cost-effective way to organise.

Another influencing variable is the amount of standardisation<sup>18</sup> of facilities services as opposed to services tailored for the user on an as-needed basis. It is argued that standardisation and cost-effectiveness are linked (Cotts 1998).

Ownership as opposed to leasing properties has also been linked to departmental organisational differences. Ownership is said to lead more towards staff /managers structure, whereas leasehold properties, it is said, result in more contracts and lease administration models (Cotts 1998). Where there is a mix of the two, organisational structures will reflect this.

In his book, *The Facilities Management Handbook*, (Cotts 1998) offers the following generic organisational models in which FM is performed, and categorised these in order of increasing staffing levels

1. Office manager model
2. One location, one site model
3. One location, multiple sites model
4. Multiple locations, strong regional, or divisional headquarters model
5. Fully international model.

So what influences this decision to outsource or insource, especially in operating environments in which there is no formal decision-making process on the subject? Certainly the “natural” structure of the organisation may play a role in influencing this “core” management team, knowingly or not.

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<sup>18</sup> Standardisation is defined as the regular, consistent FM functions that can be applied across the entire organisation without deviation from standard industry practice and/or delivery methods.

## **STAFFING VARIANTS**

To perform FM from within any of these organisational structures will require the direct employment of management staff, and in some cases, technical trades staff.

The actual “doing” of the work could also be performed by utilising staff from within the organisation. In this case it is said to be an employee/employer relationship (refer to Flow Chart 3).

It is common for this relationship to also be a mix whereby management of facilities is performed by employees of the organisation and the actual “doing” of the work is contracted out, and/or sub-contracted out.

It could be argued that in both these situations sufficient control is asserted by the organisation on the contracted workers to discount this as an outsourced arrangement.

As previously established, the term “contracting out” was shown to be discounted from an outsourcing arrangement as control and ownership still rest in the hands of the client organisation. Even though these contracted services are external to the organisation, they are controlled by the facilities manager within the organisation.

This is a common practice within facilities management departments, as Barrett (1995) claims, stating that most, if not all, companies will contract out some FM functions, probably on a regular basis. He adds that this is without including the need to resource one-off project work, such as a major building scheme, or the search for new premises.

According to the International Facility Management Association (1999), 50% of respondents used contracting out as part of their FM procurement and delivery strategy.

They also state that senior management reported the use of out-tasked sub-contracting as well, however, control was maintained by the company.<sup>19</sup>

Obviously any research performed on this internal type of procurement and delivery strategy should consider the influence by the specific organisation itself. It could be argued that it is the dynamics of the insourced firm that will influence the productive return for internal procurement and delivery of facility management.

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<sup>19</sup> It must be pointed out that for the public sector, the term “contracting out” is used extensively, however, closer scrutiny of the term and its application reveals that the term outsourcing is more applicable and thus will be considered as an outsourcing arrangement and not a contracting out arrangement as previously defined.

However, sub-contracting is the most misunderstood aspect of FM delivery when it is confused with outsourcing, simply because sub-contracting in actual fact is more aligned to the dynamics of insourcing than outsourcing.

### Internal FM Structures

Limited scientific rigour is placed around various Facility Management structures found within firms.

### Influences on Structure

A number of variables are found to influence the different FM structures found, such as centralised or decentralised firms, single or multi-site firms.

### Benefits of the ILM

The Internal Labour Market (ILM) has benefits which are not found through External Labour Market structures (outsourcing)

All firms that have employee/employer FM structures are operating in the Internal Labour Market, even if the “doing” of the work is sub-contracted (contracted out).

### Internal Labour Market (ILM)

### Increased Flexibility & Control

Internal management discretion is said to be free to alter in/outputs which provides flexibility via control not found when dealing in the marketplace.

### Less Transaction Costs

Transaction Cost Economics indicate that integration within a firm reduces the amount of transactions necessary to achieve the desired outcome than external market transactions do.

### Less Opportunism

The ILM is shielded from opportunistic behaviour which may be created if transacting in the External Labour Market

Flow Chart 3 – Insourcing Model

## ***THE INTERNAL LABOUR MARKET (ILM)***

Furthering this, Demsetz (1992) sees the idea of the “organisation” as a vehicle for advantage due to its integration qualities. That is, there is potential from within the “organisation” to achieve greater productivity than with an external procurement option. There is a common acceptance that a firm<sup>20</sup> is in a different set of dynamics from that of the outside organisation of economy (Baron, Davis-Blake & Bielby 1986); (Bill 1987). It is said to be described as exempt from many of the market forces that take place in the marketplace.

It is said that this organisational “theory” is influenced by the internal employment systems adopted.

There exists a body of belief that within these organisational systems the employee/employer relationship is critical for economic and social roles within society and that these employment systems contextualise organisational behaviour.

In his work *The operation of Internal Labour Markets*, Pinfield (1995, p. 3) describes this as the Internal Labour Market, which is a phenomenon whereby competition for jobs and wages inside organisations is dominated by administrative rules, regulations and market principles. And:

The internal labour market, governed by administrative rules, is to be distinguished from the external labour market of conventional economic theory where pricing, allocating, and training decisions are controlled directly by economic variables. ... Consequently these jobs are shielded from the direct influence of competitive forces in the external market.

Thus, the firm can best be described as separated from the external market to some varying degree. It could be argued that this is of value in raising productivity. An explanation of this was put forward by Coase (1988) in his lectures titled “The Nature of the Firm”.

## ***ILM COST CONTAINMENT***

Coase’s theory evolves around the measurement of productivity of the firm. He argues that a firm has the ability to produce goods and services more efficiently than in an open marketplace, due to lower transaction costs. He thus makes the conclusion that

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<sup>20</sup> The term “firm” represents any organisation that operates with an Internal Labour Market, that is, has employee/employer relationships.



allocation of resources within a firm becomes viable when the cost of co-co-ordinating resources through the market is greater than managing them from within the organisation.

Demsetz (1992), in his work *The emerging theory of the firm*, further adds that transactions are to be reduced in order to reduce transaction costs, and that the firm exists if and when the cost of co-ordination is reduced upon the substitution of conscious management for price-guided allocation of resources.

Thus Demsetz states that the reduction of transaction costs brought about by a reduction in co-ordination yields performance productivity, all possible by the unique hierarchical nature found within an organisation.

This “uniqueness” has also been expounded by Oliver Williamson (1967) in his work titled “Hierarchical Control and Optimum Firm Size”, examining the organisational structure within the firm.

He argues that the internal organisation of the firm (with its “unique characteristics”) is not an exogenous (sic) given, but rather a variable to be explained by underlying economic forces (Demsetz 1992), thus reinforcing the transaction cost reduction importance.

Thus in the absence of any scientific reasoning, it could be argued that as a first option, existing firms should seek to deliver FM internally. This is to capture transaction cost reduction, otherwise it will have no true base to compare with if seeking FM efficiency from external means through outsourcing.

Misunderstanding the dynamics of the internal labour market would dilute its advantages. In today’s society there are numerous organisations in existence, indicating that the collectivisation of people is the preferred method for achieving the desired output. In other words, it is unlikely that the ILM concept will go away as some may predict (Hughes et al. 2003).

However it must also be said that eventually there may also be a rise in costs of coordination as the firm continues to integrate vertically (Coase 1988); (Brown & Potoski 2004). This also will be discussed in subsequent chapters of this thesis.

### ***ILM – FLEXIBILITY DISCRETION THROUGH CONTROL***

However, apart from the reduction of costs through the reduction of transactions, there is also said to be greater flexibility within the firm, and in particular with labour markets (human capital). It is said that there is considerable management discretion in applying rules (that is, Control) which direct the employee and assign specific roles, thus creating flexibility in the structuring of employment relations. This flexibility is said to be

useful in adjusting to labour market imbalances and technological changes. This then leads to the conclusion that *bureaucratic control produces stable and predictable behaviour from employees*. This is said to simplify and legitimise managerial control (Pinfield 1995).

This has led others to the observation that within a firm there are teamwork synergies that result in heightened production otherwise not found in the external marketplace. Here it is argued that co-operation is more productive through team organisation than the linking of individual efforts across impersonal markets. Further, this can only be realised through a employee/employer profit/wage compensation system (Demsetz 1992).

Thus it could also make sense that if a firm must have a “core” management team directing FM delivery (or at least making decisions), then the ILM model should be the first method tested. An employee/employer dynamic is already in existence within the firm in this case.

### ***ILM – OPPORTUNISM AVOIDANCE***

Another proposed benefit of internal organisation is that of the avoidance of opportunism by vertical integration (Williamson 1973). Here it is argued that when ownership of assets is under a single owner (as is usually the case in vertical integration) there is a reduction for the potential for separate owners of co-operating assets to behave opportunistically toward each other. This would ultimately have the effect of productivity reduction through opportunism costs (Demsetz 1992). Thus, within the organisation there is immunity to opportunism of this kind with no effect on production. Vertical integration can then take place as a substitute for market transactions without hindrance of opportunism.

Once again there is a strong argument to suggest that the first position should be not to introduce unnecessary risk to the firm through outsourcing. However, as we will see in proceeding chapters of this thesis, this is not always possible. If the organisation itself through the ILM offers protection from opportunism, then it should be grasped as an immediate advantage where possible.

### ***X-EFFICIENCY***

However this pure “theory of the firm” is obviously not the only model to which firms can have effective efficient FM.

Vertical integration in itself, it is argued, is not the sole cause of productivity gains through transaction costs or opportunism reductions. Instead, reduction in transaction costs and opportunism are also a result of the durability and directability of co-operative association – wherever it exists (that is, in the market or within a firm) (Demsetz 1992).

That is, it is the competence of the organisation that dictates productivity improvements, and not solely vertical integration.

Through adopting technology and workplace incentives, large gains in productivity are realised, known as X-efficiency.

X-inefficiency occurs when firms do not adopt this approach. This phenomenon of different competencies was first theorised by Leibenstein (1978).

Domberger (1998, p. 40) agrees:

Behind this concept lay the empirically incontestable proposition that the level of output of any organisation can vary significantly and independently of the level of inputs.

However, the problem with relying solely upon X-efficiency as the means for efficient FM output is its inability to provide an explanation for the influence and possible benefits of “competing forces”. That is, if the ILM and the ELM were truly interchangeable as comparable methods to achieve X-efficiency in FM delivery, then there simply would not be any unique benefits of either the ILM or ELM for FM delivery. The level of co-operation necessary to achieve the efficient FM delivery would indeed create one large ILM. Simply, this is not evident in today’s marketplace. The unique advantages offered through the ELM remain separate, “purchased” by the ILM and not fully integrated into the ILM. This is indicating that market transactions may play a significant role in either a negative or a positive way regardless if they are efficient or not. This will be discussed in subsequent chapters of this thesis.

### ***ILM – SPECIFIC ASSETS and UNCERTAINTY***

In addition, this x-efficiency argument, that the benefits outlined are not unique to the type of procurement and delivery method of the organisation, does not explain the impact of firm-specific assets<sup>21</sup>.

Here, it is argued that a major determinant of integration (insourced procurement and delivery) is the effects of asset specificity and its interaction with uncertainty.

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<sup>21</sup> Firm-specific assets are defined as “the unique physical or intellectual resources that an organisation owns or has under its direct control”.

It is argued that when there is asset specificity in an uncertain environment<sup>22</sup>, then outsourcing will cost more than the costs of transacting internally, regardless of competence.

It is argued that transactions requiring specific assets, physical or human, are more likely to be integrated. Increasing environmental uncertainty will increase the likelihood of integration, given that transactions require specific assets.

For firms subject to efficiency pressures, the decision to integrate or outsource will thus be more sensitive to asset specificity and uncertainty than for firms less subject to efficiency pressures (Coles & Hesterly 1998). This will further benefit the firms.

Thus infrastructure may itself play a key role in deciding which method is best, insource or outsource. Consider “management focus” as a key indicator on whether to insource or not. It is fair to say that the more “focus” an asset requires, the more likely that firms will integrate the management of these assets internally through the internal labour market, rather than externally through outsourcing. The belief here would be to minimise the risk in misdirecting management focus away from the asset. This will be discussed further in subsequent chapters.

### ***ILM – BENEFITS OF SIZE***

This reasoning has also been furthered to incorporate the size of firms. It is argued that large firms will integrate more than small firms (Institute Of Data Processing Management 1995). This is a typical economies of scale argument first put forward by Williamson & Masten (1995).

They argue that small firms will not have efficiencies in production as large firms will, thus will outsource to external providers which, it is assumed, will be able to aggregate production across many small firms (Coles & Hesterly 1998) (refer to Flow Chart 4). This will be discussed in more detail in subsequent chapters.

However without confusing sub-contracting with outsourcing, it would make sense to say that large firms may well sub-contract work out, but do not have the need to outsource in the true sense. They simply do not “need” to outsource because they have scale within the firm; that is, if scale were the driving factor.

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<sup>22</sup> “Uncertain environments” refers to the amount of probability that unfavourable conditions will affect assets.

## ***ILM – IDIOSYNCRATIC ADVANTAGE***

There is also an argument that the internal labour market (insourcing) has non-economic advantages as well. That within the employee/employer relationship there is a unique evolving set of skills that cannot be obtained through outside markets. This is known as job idiosyncrasy, whereby idiosyncratic exchange takes place within the internal labour market, resulting in job efficiencies (Williamson, Wachter & Harris 1975). These idiosyncrasies are said to be grouped as:

1. Equipment idiosyncrasies, due to incompletely standardised yet common equipment whose individual attributes are “learned” by experience only.
2. Process idiosyncrasies, due to worker adaptations during production and individual fashioning and styles.
3. Informal team accommodations, due to specific team changes which are only known by the team from mutual adaptations.
4. Communication idiosyncrasies which are information codes and channels only of value within the specific firm and which the employees are able to monopolise for best-fit purposes.

The above firm-specific idiosyncrasies are said to lead to integration and are said to influence the decisions of in-house versus outsourcing choices. They become an advantage to insourced options, but a disadvantage or opportunity lost during outsourced transitions. This will be discussed further in subsequent chapters of this thesis.

These idiosyncratic advantages are also said to overcome the problems of bounded rationality<sup>23</sup> (where the human mind is limited in comprehension and communication, yet the complex tasks of production are not). Allowing for sequential learning by doing through experience (Williamson, Wachter & Harris 1975). That is, to collectivise the requirements on a regular consistent basis, combining skills and focus to overcome individual inadequacies.

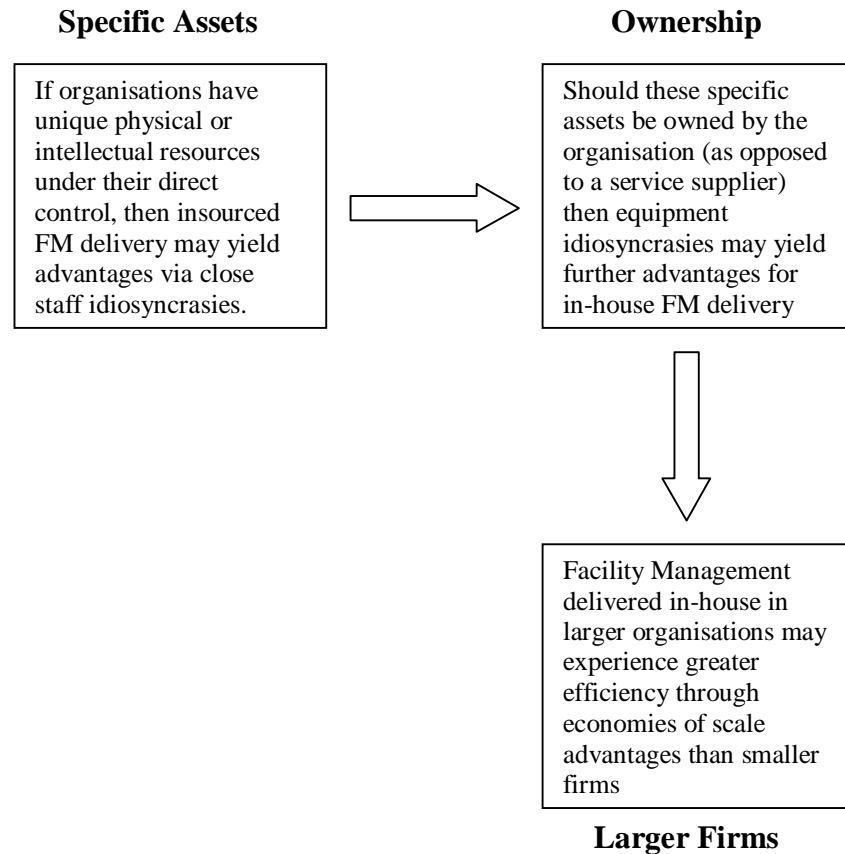
And, once again, opportunism is said to be minimised through internal labour markets because job idiosyncrasies are said to reduce information impactedness.<sup>24</sup> Information impactedness is said to be present when there is uncertainty, when

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<sup>23</sup> It should also be noted that bounded rationality is also a driver to outsourcing if the firm is unable to leverage existing skill sets. This will be further researched in subsequent chapters.

<sup>24</sup> Information impactedness is defined as when the ability of the firm to “be across” all things is limited and, as a result, efficiency is hindered.

bounded rationality limits production, and when opportunism exists (Samson & Daft 2003). Job idiosyncrasies are thus said to overcome information impactedness.



**Flow Chart 4 – The ILM Environment**

In their book *Understanding the employment relation*, Williamson, Wachter & Harris (1975, p. 1) describe this as:

Collectivising the employment agreement alleviates these conditions in that it serves to economise on transaction costs in both bounded rationality and attenuate opportunism. And transactional difficulties thus beset both contingent claims and sequential spot market contracting for the idiosyncratic tasks

Certainly, the notion of equipment idiosyncrasies has been supported by observations that when there is high inspection frequency required on production critical equipment, then integration is favoured over market procurement (Bradford & Rothwell 1998).

Thus the concept of job idiosyncrasies is supported by the Internal Labour Market view (insourcing), and particularly the way in which the internal labour market forms internal mobility of jobs (Pinfield 1995); (Chase 1991); (White 1970); (Stewman 1986).

These “mobility clusters” are said to create on-the-job training, incentives for employees to learn and develop new skills. And also provide seniority and security of employment, thus enhancing productivity (Doeringer & Piore 1971).

Pinfield (1995) states that:

The putative economics of transaction costs notwithstanding, a significant tension between market and administered processes can be found in the operations of Internal Labour Markets.

These advantages can be said to be unique to a firm (thus the existence of organisations in today’s society (Stinchcombe 1965); (Stinchcombe 1990)) which cannot be found through outsourcing. They are unique to the ILM as there is no real buying or selling involved. In comparison, there are fewer formal transactions, amounting to reduced costs.

Thus there is a strong argument for the existence and advantages of the Internal Labour Market, or insourced/in-house FM procurement and delivery methodology.

### **3.3 EXTERNAL PROCUREMENT – OUTSOURCING**

The other major FM procurement and delivery option is that of outsourcing the operations to an external provider.

Some would argue that FM is especially suitable for wholesale outsourcing due to the ease as to which service levels can be specified for FM related services. This allows for ease of measurement (Bendor-Samuel 2000).

That is, the very nature of FM, being reasonably easily quantifiable or “scoped” even though multidisciplinary (compared, say, to medical services) can be “packaged up” and outsourced. In general terms, this seems to be a reasonable proposition.

#### ***NON-CORE ACTIVITY***

Another reason cited for FM being particularly suited for outsourcing is because some consider the FM function as “non-core” and peripheral to the company’s operations as

a support service (Drucker 1995). This was discussed in previous chapters of this thesis.

This focus on core competencies is widely accepted throughout literature as one of the most fundamental reasons why firms outsource (Peters & Waterman 1982); (Prahalad & Hamel 1990).<sup>25</sup> It is claimed that by outsourcing non-core processes, organisations can shift management time and money into core processes (Greaver 1999); (Ventovuori & Lehtonen 2006).

In an article in the *Harvard Business Review*, Quinn, Doorley & Paquette (1990) claimed that by focusing on what the organisation does best (whatever that may be), an organisation should strip itself down to essential core building activities and keep as lean as possible to avoid distractions. Then, be able to leverage itself off these core skills to new heights of productivity.

This view seems to have been supported by the actions of the public sector, wherein many facilities functions have been outsourced to private firms, especially over the last twenty years.

Hence firms opt to identify non-core activities in an attempt to outsource these functions (Bendor-Samuel 2000).

This is especially so in arenas of high competition and globalisation. Nutt & McLennan (2000) even argue that the rise of FM as a discipline was due in part to this search for core and non-core activities.

In a presentation given to the FMA, de Valence (2004, p. 3), Senior Lecturer of the Faculty of Design, Architecture and Building at the University of Technology, Sydney stated:

The response of many large organisations to the increase in demands for better performance, global competition or pressure on their balance sheets was to identify core activities and outsource as much of the rest as possible.

Indeed, the growth of FM as an industry has been underwritten by the increasing use of outsourcing for non-core functions as business put the ideas of (Hamel & Prahalad 1994) into practice. This has been crucial in establishing FM as an industry sector in its own right as organisations moved responsibility for asset management to specialists.

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<sup>25</sup> As previously mentioned, outsourcing as a strategic tool is increasingly being linked to its ongoing use as a procurement option, whereas traditionally it was linked to non-core processes.



However, it can also be argued that whether FM is core or not core is dependent upon the individual circumstances surrounding the organisation and not on the nature of FM as a discipline overall.

It may be impossible to predict whether a multidisciplinary function such as FM would be considered core or non-core to all organisations in general.

A core competence is said to be a bundle of skills and technologies rather than a single skill or technology or solely a physical asset (Quinn & Hilmer 1994); (Hamel & Prahalad 1994). Thus the FM service provision under these circumstances may be found to be core (that is, being a bundle of skills etc.).

The decision of whether FM is core or not is then best made by the organisation at the time of deciding whether or not to outsource the function; or even parts thereof. Should FM be found to be a non-core service to the organisation, then it would be suitable to outsource.

This is especially so given that others (Price 2002) argue that core and non core distinctions maybe too restrictive if used in blanket terms for services and process. Here it is argued that a service may be critical to a business and impose high risks if it fails, without being either a core competence or even a core commodity.

However, it stands to reason that there is less risk in outsourcing FM, whether regarded as a service, process or commodity if it is found to be non-core in any way. This is especially so if it is easily measurable. That is, why operate a function within a firm when it can be sold externally to a provider without risk?

### ***GLOBALISATION and CORE FOCUS***

Also, there is growing consensus suggesting that it is the forces of global competition that have prompted organisations to adopt more “market” disciplines. This is by releasing peripheral business to focus on their core business and move away from vertical integration (Miles & Snow 1986) by using outsourcing as the preferred option (Domberger, Fiebig & Fernandez 1999).

Another explanation given as to why outsourcing, as an FM procurement and delivery option, is adopted, is the existence of bounded rationality, due to increasingly complex working environments.

Certainly globalisation would force firms to look closely at all of their activities, not just FM, in an endeavour to increase or maintain efficiency. It is logical to expect low tolerance to functions performed internally that could be “easily” performed externally. This would allow a re-focus on those activities that can not or should not be outsourced. This will be discussed in subsequent chapters.

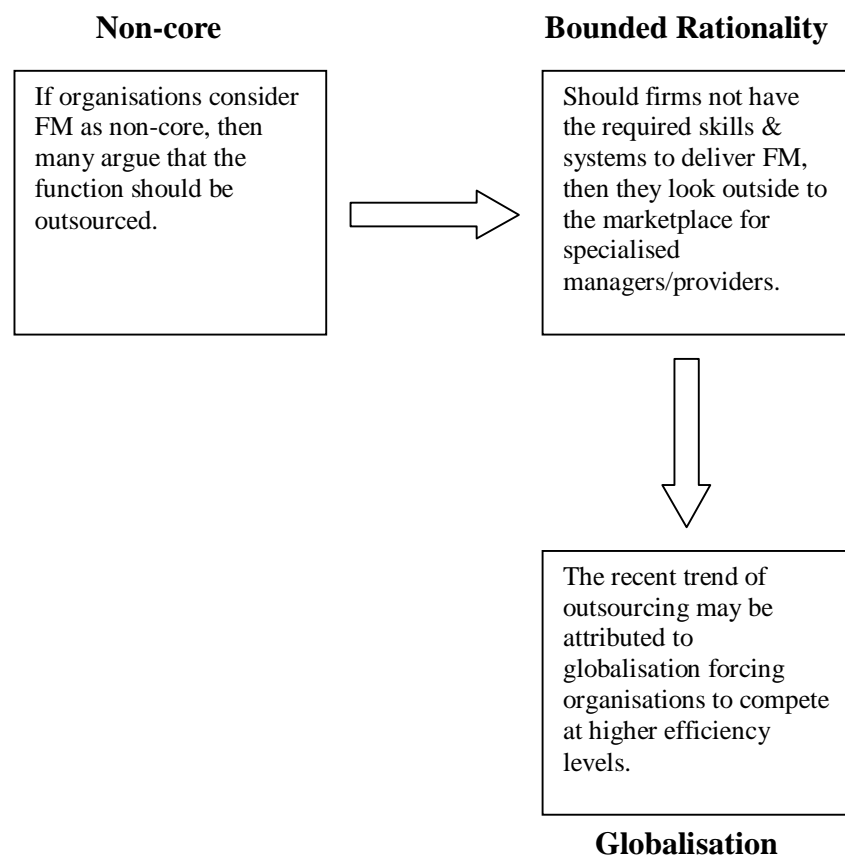
## **BOUNDED RATIONALITY**

As previously defined, bounded rationality occurs where the human mind is limited in comprehension and communication, yet the complex tasks of production are not. It is said that this leads firms to seek help from outside of the organisation to “specialist” firms that concentrate on certain tasks, such as FM (refer to Flow Chart 5).

Katsanis (2003) adds that the intrinsic complexity of products and processes attains such high levels that the expertise required to deliver them cannot be found within hierarchically integrated organisations.

Some state this as a commonly accepted observation that arises from a “conflict” between the speed of thought and action and a change in market commerce (Nutt & McLennan 2000).

Obviously even non-core tasks “compete” within and between firms as a global marketplace emerges. “Best-of-breed” outsourcers would flourish in these conditions, as they provide focused provision for these functions and tasks, helping the firm to compete. “Raising the bar” is now essential, and not just a luxury.



**Flow Chart 5 – Key Outsourcing Drivers**

## ***SPECIALISATION ADVANTAGES***

It is argued that this “specialisation” adds value to the process by allowing the FM activity to take place on a large scale (by the service-provider to its clients). This then leads to economies of scale by the division of labour (increased productivity in labour) and fixed investments (one-off fixed set-up costs) (Domberger 1998); (Beaumont & Sohal 2004). This is all due to firms being unable to solve problems within their current level of skills. They then seek the services of an external provider to perform the work for them, being specialists in this area (Bendor-Samuel 2000); (Cannon 1989); (Harrison & Kelley 1993); (Edwards 1994).

Another specific reason cited for the adoption of outsourcing for the FM function was to increase flexibility (Burdon 2004) to meet changing market conditions. Here it is argued that the FM discipline tends to solve one problem, yet create another, due to the conglomerate of different disciplines under the banner of FM.

So the evolution of FM outsourcing is mainly driven by the specialised service provision of these emergent, focused service-suppliers. This would put pressure on firms to outsource FM in order to simply compete, especially with other like organisations.

## ***FLEXIBILITY***

As discussed previously, the development of FM as an emerging discipline was said to spawn empire-building, thus becoming inflexible. Organisations adopted outsourcing to overcome this inflexibility which, it is argued, will ultimately reduce inefficiency costs (Bendor-Samuel 2000).

Benson & Ieronimo (1996) and Harrison & Kelley (1993) support this and argue that outsourcing provides three forms of flexibility, namely:

1. Functional Flexibility – the ability of the organisation to re-deploy labour to cover new tasks or new production methods
2. Wage Flexibility – the ability of the organisation to link wage payments to productivity and product demands
3. Numerical Flexibility – the ability of the organisation to adjust labour inputs to product demand.

Others support this view (Zappala 1988); (Rimmer 1991); (Green & Macdonald 1991), with some adding that through outsourcing, flexibility is achieved by eliminating fixed overheads, bureaucracy, and physical plant ownership – together with tapping into resources down the customer chain and leveraging off technology up the customer and supply chain (Quinn & Hilmer 1994).

So it could be suggested that with the rise of the “organisation” there was indeed an “overcompensation” of internal functions. This would include the FM function, given its development into a multidisciplinary function. This overcompensation required correction, which outsourcing provided. The first example would be of transferred staff from the ILM to the ELM providing flexibility to an organisation where there was none (Burdon 2004).

### ***FLEXIBLE CONTRACTS REQUIRED***

However Bendor-Samuel (2000) claims that the outsourcing relationships itself can lead to inflexibility, due to the up-front costs that the outsource provider must pay. This, combined with increased bargaining power now enjoyed by the outsource provider (due to a monopoly of service through an exclusive arrangement and subsequent lack of competition), reduces the provider’s incentives to make changes in processes, thus reducing flexibility.

Considering this, it has been noted throughout literature that when considering outsourcing arrangements (and the contracts that are crafted for this purpose), there should be flexibility to allow for change and uncertainty generated through technological advancements, market changes, or changes to the organisation’s (client side) market share (Heywood 2001).

These reasons for organisations seeking outside providers for FM Services, are supported by a survey undertaken by the International Facility Management Association (1999). It was reported that the three main reasons for organisations seeking outsource providers for FM are to obtain specialised skills, reduce costs (Lacity & Hirscheim 1993); (Bresnen & Fowler 1994), and concentrate on core competencies (Rees & Fielder 1992).

Having established this unique ability to provide the ILM with flexibility through outsourcing, it is not surprising that there is a definite “price to pay” for such freedom. This price is invariably linked to the term or length of time of the outsource contract. An imperative exists to keep it as short as possible to allow for freedom of choice over time.

## ***OUTSOURCING NOT YET FULLY EMBRACED***

However, according to a study of the FM industry in New Zealand (Hopkirk 2000) firms are reluctant to fully embrace outsourcing in the FM industry as only 11% of the industry surveyed adopted FM outsourcing procurement strategies. Not surprisingly, 25% of the Government sector used outsourcing as a preferred FM procurement option. A total of 45% of the surveyed organisations in the study preferred an in-house strategy by contracting out.

This low percentage of FM outsourcing throughout the various industry sectors has been attributed in part to the failure of the outsourcing companies to deliver during the outsourcing insurgence of the 1980s, as previously documented.

Simply put, once “correction” of the ILM took place, firms, rightly or wrongly, have questioned the need to be locked into outsource contracts. Perhaps this indicates an overcompensation by outsourcing that also needed correction? That is, a slight return to insourcing to balance the equation?

## ***QUALITY AND COST RISK***

It is argued that in-house management has sought other means of addressing quality and costs through partnering, share of savings, and mutuality with the market (Nutt & McLennan 2000). This is supported by the International Facility Management Association (1999) which cited that the two main reasons for which a total of 22% of respondents were bringing FM back in-house were quality and cost issues (FMlink 2002c).

Katsanis (2003) adds that should the quality of service not improve then there is no gain. As managerial supervision must still occur, there can be no true set and forget, even to the point that response rates become lower due to typical “commercial realities”.

There are also suggestions that the “payoff” from outsourcing has fallen short of expectations, with average realised savings of 9% over earlier indicated savings of up to 40% (Maromonte 1998),

This trend of returning back to in-house FM delivery has also been linked to the actual growth of FM having evolved into a multi-disciplinary and greatly expanded job role (IFMA 2002) since its inception. This, coupled with globalisation and recessions over the past twenty years, has supposedly affected the outsourcer’s ability to maintain a perception of value added through qualified and motivated knowledge workers.

Certainly, once the “bar” had been raised by outsourcers, firms became more educated on good FM delivery. Therefore they were confident of “adding” to the quality and low-cost delivery by doing so in-house, utilising all the advantages unique to the ILM, as outlined previously.

### **SKILLED STAFF DILEMMA**

Here it is argued that while globalisation has matured the job descriptions for Facilities Managers, the outsourcers have been unable to provide the necessary qualified and experienced staff and thus have opted for a series of excuses (Incognito 2002).

In his book *Outsourcing: Ensuring survival with strategic global partners*, Incognito (2002) explains:

The battle cries of ‘doing more for less’ and ‘doing more with less’ from the facility professional to the outsource provider has pierced the armour of the provider's profit and loss domain and has caused the outsource providers to scurry with reactive solutions.

This would be especially so if the outsourcers’ staff were not increasing their skills in line with the firms’ in-house core management staff’s increase in knowledge of good FM delivery practices.

Ironically, this argument of the globalisation of organisations causing difficulties for external FM providers may also be the reason for firms initially seeking these external providers in the first place. It is argued that outsourcing has gained in popularity as a restructuring tool. This is due to increased competitive pressures in a globalised marketplace, and a trend towards smaller, flatter organisations, and subsequently a tendency for firms to become more and more decentralised in operations (Greaver 1999).

It is argued that outsourcing, as a tool for corporate restructuring (for example, acquisitions, leverage buyouts, divestiture of operations, and decentralisations), has given firms the opportunity to be creative (Marcella 1995).

## ***DECENTRALISED CONTROL***

For example, decentralisation (decision-making at all levels of the organisation) is said to suit outsourcing, as the outsource provider can help the business survive the absence of corporate control, thus streamlining operations.

Here it is argued that when an organisation is decentralised, the power base is divested into the various offices on a regional basis. Head office loses some of its control over the various functions that take place.

Outsourcing some of these functions to an organisation whose structure is centralised is said to offer further control to the decentralised client organisation.

Barrett (1995) argues that in regional, decentralised models, the major headquarters is primarily concerned with policy and providing guidance to subordinate regional headquarters. Thus operational issues tend to be de-emphasised, apart from when they relate to the major headquarters itself, and are dealt with at a regional level.

Thus it could be argued that at this regional operational level, the FM function could either “add value” or “increase costs”, as there is discretion at the local level.

Nelson-Nesvig (1998) furthers this reasoning to predict a trend by claiming that employment outside the corporation has increased; being restructured from large inflexible organisational pyramids, to smaller and flatter structures. He claims that hierarchical pyramids will either disappear completely or become shorter, smaller, and less rigid. This is in an effort to become more versatile, cost-competitive, and innovative in this era of global competition.

So outsourcing may still provide a better solution under these circumstances, even if the staff are equal to or even less skilled than the firm’s in-house core management team. That is, a centralised outsourcer provides more control to a firm than a decentralised management structure, especially a highly skilled centralised managed structure.

## ***SOME CONTROL LOSS***

However, this “control” benefit is questioned by critics who claim that outsourcing leads to a loss of control, the complete opposite from the argument put forward (Proctor & Windle 2005). Critics of this position believe that by outsourcing, the organisation will lose control of the outcomes and there will be increased monitoring costs as a result (Brown & Potoski 2004). This argument favours integration rather than outsourcing (Mulgan 1997); (Szymankiewicz 1993).

In his paper “Contracting out and accountability”, Mulgan (1997) offers a solution, claiming that control depends on the degree of specificity within the contracts. The more detailed the performance standards that contracting companies must meet, including the acceptance of detailed reporting and monitoring requirements, and the more frequently their contracts may be renewed or renegotiated, the closer they will come to the degree of control and accountability required by an organisation. This will be furthered in subsequent chapters.

Considering this, it has been noted throughout literature that organisations competing in a globalised marketplace seek fewer outsourcing suppliers with whom strong relationships can be built (Oates 1998); (Corbett 1998), assuming control may have been the driver.

Some control loss, however, may be advantageous. Day-to-day control loss may be offset by having ultimate control through a formal instrument of agreement, such as a well-written contract. This would be impossible to achieve if FM is delivered in-house in a decentralised structure.

### **TRANSFER LEVERAGES**

Similarly, another reason put forward as to why firms outsource is that of financial, operational, and staffing transfer. Here it is argued that leverage of scale is produced where there is a successful transfer of the organisation's processes over to the external provider without significant changes – then economies of scale apply.

Bendor-Samuel (2000) in his book *Turning Lead into Gold*, explains that should the external providers process have readily available equipment or facilities, which may rely on computer automation, that can increase purchasing power, or employ any other source of scale leverage, the outsourcer and client organisation can combine their volumes to create a significantly lower per-unit cost. This creates the potential for the client organisation to lower costs while allowing the outsource provider to make a profit.

This leverage is also said to extend to staff transfers and knowledge expertise, whereby the transferred staff add to the external suppliers' knowledge base, which in turn adds to the staff's knowledge – producing further economies of scale for the client organisation. Bendor further claims that without this transfer leverage there is no reason to outsource at all.

Thus it can become an attractive proposition to transfer existing in-house staff across under these circumstances. In such cases the issues of control become negated, but more importantly, these skilled internal staff are no longer competing with



the outsource provider but add to the provider's competence, and ultimately benefit the client organisation.

### ***HOLLOWING-OUT RISK***

However, Teicher, Holland & Van Gramberg (2000) argue that this "transfer" can lead to the erosion of conditions, especially for staff resulting in productivity losses .

This is supported by public-sector observers who also believe that this transferring aspect of outsourcing can lead to social dysfunction, with costs merely transferred to other parts of the economy.

Bendor-Samuel (2000, p. 107) agrees with the "potential" for these problems to exist. He states:

Any significant transfer of a process to a third party will cause employee insecurity and dislocation. As Machiavelli advised, "There is nothing more difficult, nothing more dangerous than to introduce a new order of things."

This is supported by a survey undertaken that revealed that any changes from in-house to outsourced procurement and delivery had cultural ramifications for staff on both sides. Many organisations underestimated this significant transition issue (KPMG IMPACT Outsourcing working group 1995).

This hollowing-out is said to arise from a loss of in-house skills, corporate memory, and innovation capacity. Certainly there would be a need for the client organisation to rely on "purchasing" these skills for the ongoing future once the FM function is outsourced. Thus crucial to this is the ability to purchase the service at a competitive rate (Domberger 1998).

Loss of competitive advantage may also be an issue under these circumstances. Langefield-Smith, Stringer & Smith (2000) add that decisions taken to outsource certain functions can be difficult to reverse when they involve a divestiture of both physical and human assets. However, the consequent loss of in-house expertise in that function may be difficult to re-establish if outsourcing is found to be a poor decision. A careful consideration of what constitutes the source of a company's competitive advantage and the choice of which functions to outsource safely thus becomes critical (McCune 1993).

Burdon (2004) argues, however, that the effects of hollowing-out are compensated for by the provider, as outsourcing allows the client organisation to improve its competitive advantage (Lankford 1999) through outsourcing the function to

a specialist service-provider , thus gaining advantage through the specialists skills (Quinn, Doorley & Paquette 1990); (Eades et al 2002). These skills may be globally held, allowing opportunity for growth and not just cost savings (Johnson 1997).

However, these transfer issues have also been linked to quality shading. It is argued that cost reductions gained through the transfer are merely reductions in quality levels (Quiggin 1996); (Scott 1996); (McIntosh, Shauness & Wettenhall 1997); (Meyer 1994).

However, Domberger & Hall (1994) in their work *The Determinants of Price and Quality in Competitively Tendered Contracts*, which studied cleaning contract tenders in Australia, claim that competition reduced process without compromising quality (Burdon 2004). Thus they claim that efficiency gains are not a result of a trade-off on quality. This argument will be furthered researched in this thesis. However thinking it through, these “transferred staff” take with them their honed skills and the firm will lose the unique idiosyncratic advantages previously outlined. This would seem unavoidable. But were these advantages linked in any way to the core competence of the firm? This is the important distinction that should be made.

### **CORE COMPETENCE AT RISK**

The argument that this transfer has the effect of hollowing-out the organisation, leaving the firm in a vulnerable position, still persists. That is, outsourcing key parts of and components of the organisation's business is said to forsake core competencies or opportunity for any “potential” core competencies.

Katsanis (2003) argues that outsourcing is not always the right decision, nor is it in the interest of the organisation in the long term. He claims that it is generally acknowledged that outsourcing leads to a transfer of expertise from the organisation to others from where it is then purchased back at a higher rate.

However, others argue that the specialist skills of outside firms compensate for this loss in the long run (Domberger, Fiebig & Fernandez 1999). Whenever a firm opts to produce something internally (like FM services), that others can provide more efficiently and less expensively outside the firm, then the company sacrifices competitive advantage (Quinn, Doorley & Paquette 1990) (Price 2004) (refer to Flow Chart 6).

It becomes imperative to look at existing “mobility clusters” and idiosyncratic advantages before removing them. This is to ensure that the impact on core competence is minimised. It may be impossible to avoid any dislocation; however, the

benefits of the outsourcer operating in a competitive marketplace may outweigh this dislocation.

### ***COMPETITIVE ENVIRONMENT FAVOURS OUTSOURCING***

Certainly in the public sector this reasoning is furthered to add that the force of competition is powerful enough to invoke large workplace reforms of practices within a firm, hence raising productivity (Sclar 2000). It is stated that this force is independent of ownership. The cost savings associated with outsourcing in the public sector have been published at between 10% to 30%, with savings for private industry reported to be between 18% to 40% (Burdon 2004); (Jurney 1995) .

Domberger (1998) claims that competition only yields savings where there is scope for greater efficiency to start with, and where competition itself is effective (Domberger, Meadowcroft & Thompson 1986).

This is supported by Haskel & Sanchis (1995) who, in their work ‘Privatization and X-inefficiency’, came to the conclusion that as market power decreases (that is, competition increase), workers’ effort increases and wages go down. Where monopolies decrease, available surplus also decreases, effectively reducing bargaining power – thus competitive pressure reduces x-inefficiencies.

Thus competition or the existence thereof, is an important determinant for efficiency through outsourcing. This will be discussed further in subsequent chapters.

However, this is supportive of the notion that outsourcing is essentially a market transaction and should not be confused with sub-contracting and similar forms of tasking a function. These benefits would simply not be present under these forms.

### **In-house FM Bureaucracy**

Facility Management emerging as a discipline created inefficient, inflexible middle management structures.

### **Outsourcing Caution**

However, Facility Management Outsourcing not fully embraced, due to scepticism about the “promise” and little confidence in the skill sets of outsourcer’s staff.

### **De Centralised Firms**

Firms that had decentralised structures adopted Facility Management outsourcing to gain control of regional bases.

However, Facility Management outsourcing seen as a solution in removing bureaucracy through transferring of assets (including people)

### **Asset Transfer**

### **Economies of Scale**

However, outsourcing the function can create further control loss as the firm “hands over” the function to the provider. This may reduce quality outcomes.

Large Facility Management outsource providers bring their scale to the client firms, creating efficiency in the FM discipline.

### **Control & Quality Loss**

### **Competition & Advantage**

However, firms that operate in competitive environments gain advantages for their core business through the outsourcer’s specialisation

Firms that transfer existing assets to an outsource provider will lose corporate identity of those assets.

### **Hollowing-out**

**Flow Chart 6 – Advantages/Disadvantages of Outsourcing**

### 3.4 CONCLUSIONS

It was found that there is little data that specifically targets FM structures within firms when considering FM procurement and delivery. A common procurement strategy for FM structures is that of contracting out from within firms under the direct control of an employee/employer relationship. This structure is said to be exempt from many external market forces. This is said to lead to a reduction in the number of transactions necessary for production. This then reduces costs through a reduction in management monitoring costs.

Flexibility is said to be increased in this situation as a direct result of an increase in the control afforded by the employee/employer internal labour market system. This system is also said to support teamwork from the formation of mobility clusters, which are said to directly influence and increase production. This is said to be a result of job efficiencies which emerge from specific idiosyncrasies that reduce opportunism and reduce bounded rationality. Single ownership of a firm is said to also result in a reduction of opportunism.

Ownership of assets combined with uncertainty is also said to induce vertical integration (in-house) over external market procurement and delivery. This is regardless of competencies, especially in large firms. This seems to negate the argument that transaction costs can also be lowered in the market through efficiencies. External procurement strategies for FM were also considered. It was argued that FM is suitable for outsourcing, as the service levels are easily monitored. This then allows for ease of management, and that where considered as a non-core function and not considered a core competency, it will be suitable for outsourcing.

This tendency for non-core services to be outsourced was said to have arisen from increased competition caused by globalization. This was an attempt by firms to remain competitive.

The inability for firms to sustain this competition, due in part to bounded rationality, was said to lead firms to seek external specialist skills. This was to leverage off economies of scale made possible by the providers, thus reducing costs. This is then said to lead to greater flexibility for firms, especially when some consider FM as inflexible by nature.

Globalisation was also linked to organisational structures becoming more decentralised in operations. This, it was argued, suited outsourcing, as control became divested in the providers.

It was argued that outsourcing created inflexibility via the providers themselves. This was due to high initial set-up costs and the monopoly of supply created by these contract agreements. This was said to cause a decrease in organisations' bargaining power, in which control was said to be reduced from the organisation and rest with the provider.

Supporters of this view maintain that some control is lost in outsourcing. As a result, there was a trend for firms to outsource with fewer firms and maintain strong relationships under short-term flexible contracts.

The continued growth of outsourcing FM was found to be slower than first anticipated. Some research indicated a return to in-house FM delivery strategies due to quality and cost issues. This was once again linked to the forces of globalisation extending beyond the capacity of the external providers' ability to supply organisations with relevant qualified knowledge workers (Feeny 2003).

Supporters of this view claim that outsourcing leads to a transfer of costs and erosion of quality and staff conditions, with little productivity increases. This may then lead to the hollowing-out of the organization. It was claimed that too much outsourcing may leave a company empty of real substance. However, opponents of this view claim that transfer of ownership, assets, and process can be leveraged to gain economies of scale, made possible by the forces of competition in the marketplace. It is said that this will raise productivity.

So there is strong evidence to support the notion that both main forms of FM procurement and delivery methods hold the potential to provide "unique" cost and value propositions.

It could therefore now be argued that one form is not "better" overall than another, and if so, under what circumstances should one form be adopted over another and for how long?

These findings will be further examined in detail in the following chapter, in order to extrapolate the consequences around these key issues and develop a conceptual framework.

## CHAPTER FOUR

### CONCEPTUAL FRAMEWORK:

#### OUTSOURCING LEVELS, COST, VALUE, TIME

##### 4.1 PURPOSE AND APPROACH

The purpose of this chapter is to build upon the preceding literature review, in order to build a conceptual framework for the research.

The literature review suggested a trend<sup>26</sup> existed throughout history from in-house to outsourced Facility Management procurement and delivery and back again. Also, influencing variables emerged with initial indications that there are both positive and negative outcomes for each type of FM procurement strategy at some stage in the “cycle”<sup>27</sup>.

If it is accepted that both outsourcing and insourcing are credible for the delivery of FM and that this credibility is subject to certain operating conditions. This may explain why cycles may exist.

So, already an important find may have been uncovered within the literature, that is, the circumstances or “drivers” of perceived cost and value unique for either insourcing or outsourcing of FM. This “bringing together” of these sets of conditions has never before been suggested.

It is now possible to further investigate these influencing variables to gain an understanding of how they affect the decision-making process surrounding the two main forms of FM procurement and delivery methods, and how they behave over time. This chapter will build upon this understanding, reinforcing the basis for the previously postulated hypothesis. That is, that there is a correlation between the decision to adopt either in-house or outsourcing of facility management and the eventual perceived negative value/cost ratio over a given time period (that is, the initial strategy adoption of either type causes a perceived positive value versus cost ratio), thus possibly forming a cycle from one strategy to the other.

This will then allow the formulation of the research methodology.

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<sup>26</sup> “Trend” in this instance refers to the general shift of focus from the internal and external labour markets over an undefined time period throughout history.

<sup>27</sup> This cycle refers to a proposed cycle of firms shifting from insourced and outsourced FM procurement and delivery methods.

## **4.2 OUTSOURCING DYNAMICS**

It was suggested, by reviewing available literature, that switching between the two main forms of FM Delivery occurred and that this trend could be linked to the formation of a perception of negative cost/value ratios<sup>28</sup> over time. This then being the impetus for change again, that is, cycles. The question that may now follow is:

“What and when are firms influenced to ‘cycle’ between the two main forms of FM procurement and delivery methods (presumably in an attempt to achieve a positive cost/value ratio) and how is this achieved, if at all?”

Understanding that this basket of drivers may influence perceived cost and value over time may also lead to a deeper understanding of the conditions for achieving best-fit approaches for when to outsource or insource. Or alternatively, provide an understanding of when not to change methods. This would be a beneficial finding.

### **4.2.1 INFLUENCING VARIABLES**

The literature suggested that the main reasons firms adopt an in-house option was that there was:

- i) a reduction in costs (cost of transacting lower than in the marketplace due to less monitoring time required),
- ii) increased flexibility (due to ownership and internal organisation being easier to co-ordinate and manage) and
- iii) little or no opportunism (where the company worked together as opposed to a conflict of external suppliers all vying for business), and
- iv) increased overall control of the FM function and its outcomes.

And that these advantages were realised more when:

- 1. the facility management function was considered strategic, or support core business in a strategic sense,
- 2. there was a centralised organisational structure,
- 3. the firm size was large,
- 4. ownership was central to the organisation,
- 5. uncertainty existed, and
- 6. assets were specific in nature.



However, the literature also indicated that the main reasons for firms moving away from this in-house option were:

- a. that it eventually produced ever-increasing staff numbers (creating non-productive bureaucracy) and,
- b. a subsequent reduction in value (caused by lethargy and general non-productiveness).

And that these issues arise depending on:

- the level of complexity of the multidisciplinary FM service provided.

The literature also suggested that the main reasons for firms opting for the outsourcing option were:

- i) to gain transfer leverages (virtually leveraging off the wholesale change process to enhance productivity),
- ii) to gain economies of scale (through the service companies' size, and combined service companies market share),
- iii) to increase competition efficiencies (through access to specialisation of the service company),
- iv) to increase competitive advantage (by shedding non-core functions and re-allocating focus and assets to core production activities),
- v) to increase flexibility (by shedding staff and gaining contract flexibility to enable production techniques to be re-aligned as and when required), and
- vi) to gain access to increased specialisation (specifically in technology and updated processes)

And that these advantages were realised more when:

1. a decentralised organisational structure exists, when
2. service level agreements are simple, when
3. influence from globalisation on the organisation exists, when
4. bounded rationality exists within the organisation, when

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<sup>28</sup> A negative cost/value ratio is defined as the combined costs exceeding the combined value

5. the FM function is considered non-core to the organisation, and when
6. competitive pressure exists.

The literature also suggested that the main reasons firms moved away from outsourcing were:

- a. increased costs (monitoring costs),
- b. decreased control (locked into contracts and loss of bargaining power),
- c. decreased staff conditions,
- d. decrease in quality and quality control (due to quality shading whereby cost decreases are achieved through quality reductions),
- e. increase in hollowing out<sup>29</sup> of the organisation (whereby the service company acquired some of the company's substance to varying degrees),
- f. decrease in core competencies due to hollowing-out,
- g. a decrease in flexibility (due to set-up costs and monopoly of supply).

And that these issues were evident when there was/were:

- increased monopoly provided to the service-provider afforded under the outsourcing contract,
- a high demand of relevant knowledge workers required,
- use of multiple outsource providers by the client organization (and thus high monitoring costs), and
- hostile relationships with the outsource providers.

Should it be concluded that these variables do indeed influence perceived cost and value for FM delivery, then associated time variables may also be discussed.

These are the outcomes which have emerged from the literature, for which there is sufficient support to suggest that each item listed has relevance to the procurement and delivery of FM.

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<sup>29</sup> "Hollowing-out" is defined as existing when an organisation loses substance from within the company, forfeiting some ability to maintain core business objectives over the long term.

### **4.3 VALUE/COST/TIME – TRANSFER and CONTROL**

It was also established that “true” outsourcing takes place when there are transfers at play; either of control, responsibility, assets, or all of the above.

It was further established that contracting-out was extensively used to deliver facilities management services within organisations (that is, the use of external suppliers where control and ownership rest with the client organisation). This was considered as in-house provision and not an outsourcing arrangement.

Considering this, it is now furthered that the extent of this transfer and control determines the extent of how much outsourcing has actually taken place when compared to in-house provision. Thus the extent of flexibility within the contract is proportional to the terms and length of the contract.

In addition, the previously listed influencing variables do seem to affect the decision to outsource or remain In-house for FM delivery (Neubauer 2005). Thus this may be indicating a possible attempt by organisations to achieve a positive value versus cost ratio, which, without alteration, may once again become negative over time under certain circumstances.

So, in order to assess whether this basket of drivers remains constant over time or not, it was essential to define outsourcing. Each driver seems to be unique to either outsourcing or insourcing. It would be impossible to measure the drivers over time if there were an incorrect application of outsourcing or insourcing.

Thus, by further investigating and researching these influencing variables and defining the relative perceived costs and value, a co-relation with the extent of transfer and control over time may also be discussed, if any existed (refer to Figure 1 ).

#### **4.3.1 FACILITIES MANAGEMENT VALUE**

##### ***IN-HOUSE VALUE***

Thus, if it is now to be accepted that the in-house drivers of value postulated are a true reflection of circumstances surrounding in-house FM procurement and delivery, each attribute should be further investigated through available literature. This then should be further considered to ensure that it is a true reflection of how perceived FM value is attained in-house (Roberts 2001).

## **CORE AND STRATEGIC**

As discussed in preceeding chapters of this thesis, as an emerging discipline, FM has become increasingly important to organizations. That does not necessarily mean it is automatically a strategic function. This will depend on the way it integrates within the company and its contribution to the “core” functions (that give it a competitive advantage) (Payne 2000).

The decision regarding whether or not FM is core will rest in the hands of the organisation itself. FM may contribute to or even detract from business performance in a multitude of different ways. It may also change over time (Nutt & McLennan 2000); (Bendor-Samuel 2000).

Some facilities managers are board members or reporting to the board, whilst others are regarded as a support operational functional line manager (Payne 2000).

So an assessment on whether FM is strategic or not should be made at the time when assessing whether to outsource the function or not. Otherwise, labelling it one way or the other without assessment may be damaging by limiting value through an incorrect choice.

## **STRATEGY LINKED TO KNOWLEDGE**

Further, for those organisations that consider FM as core, it is usually linked to the *knowledge* held by the facilities managers themselves (Nutt & McLennan 2000).

Quinn, Doorley & Paquette (1990) support this view and state that these organisations build their strategies not around products but around deep knowledge of a few highly developed core service skills. They claim that in such companies the organisation is kept as lean as possible. The company, they claim, strips itself down to the essentials necessary to deliver to customers the greatest possible value from its core skills – and outsources as much of the rest as possible.

The correct question, therefore, lies in deciding what is and what is not core to an organisation. As Drucker (1995) stated: “One of the most important thing an organization can do is determine exactly what business it is in” (Damiani Migs 1998).

This distinction is important, as many see the outsourcing of core functions as undesirable and to be avoided. That is, there is a risk of hollowing-out the organisation and losing competitive advantage (that is, the knowledge within the FM function) (Langefield-Smith, Stringer & Smith 2000).

According to a survey performed by the International Facility Management Association (1999), 90% of respondents revealed that they never outsource facilities management strategic, operational, or disaster recovery planning (McMorrow 2003).

Thus competitive advantage may be lost in outsourcing, by allowing others to take control and manipulate the organisation's core competence for their own advantages. This would lead to losing not only the core competence it outsourced but future potential core competencies (Hamel & Prahalad 1995); (Greaver 1999).

Losing skilled persons is not an issue if the organization transfers them via outsourcing as long as the FM function is not found to be core. However, if it was, then the organization would simply not outsource the function.

### ***A CONTROL STRATEGY***

When FM is found to be a core competency (even if it is just supporting other business units), then the firm will choose to retain this in-house to avoid future costs (be they opportunity costs or a decrease in production due to loss of competence). Retaining a strategic competence means retaining control. This will ultimately increase value.

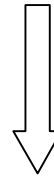
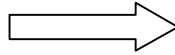
Johnson (1997) agrees with this view and claims that as FM is a relatively new discipline, it focuses business attention on how support services can contribute to the achievement of the organisation's goals. He claims that this helps to underline the diverse needs for control and responsibility and to obtain value; quality and efficiency (refer to Flow Chart 7).

### Core or Non-core?

Each organisation should consider whether Facility Management is strategic for it. It would be thus aligned to core competencies.

### Strategic FM is Knowledge

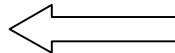
Should FM be found to be strategic, then this core competency would be embodied within the in-house staff delivering the function, that is, knowledge.



### Retain Core Retain Control

Strategic Facility Management which is retained in-house equates to retaining core competence and thus provides greater control of outcomes.

Organisations should avoid outsourcing strategic functions as this “knowledge” could be potentially lost, ultimately reducing core competence through hollowing-out.



### Risk in Outsourcing Core Competence

**Flow Chart 7 – Insourced Strategic Value**

Thus it can be suggested that should FM be considered by an organisation as strategic, it may best be delivered in-house. There is strong support to suggest that a firm that controls the knowledge within a core competence is at an advantage over those firms that do not. Therefore, insourcing FM under these circumstances delivers value in this area.

Obviously, there may be parts of FM that are considered strategic, and others that are not. Therefore each function within FM should be treated as separate where possible. This would avoid FM push, allowing for FM pull from the business instead.

### **CENTRALISATION**

The delivery of this FM service is also an important factor in control (Domberger 1998). A strategic operation does not divest its control throughout its network, but rather

centralises its operations and concentrates its control activities at head office. Any FM service that is regarded as strategic would more than likely also follow this model.

In a decentralised operation, the FM function may have a relatively larger amount of autonomy, and may even be acting as a profit centre in its own right. There could be a loss of control held by the organisation. This could be regarded as not ideal for a strategic function.

Cotts (1998) ascertains that a facilities manager in a company that is highly decentralised will find herself/himself acting almost as an entrepreneur. This approach is much different from the facilities manager in a highly centralised corporation. He claims that the concern there is on control, documentation, standards, and published policy and procedures. He goes on to claim that several key organisational factors are control issues. Further, one rule is to control centrally those aspects that have the greatest impact financially (for example, real estate, major construction) and control the rest through development and oversight of policy.

One of the biggest issues in managing a decentralised facilities management department is measuring its success and contribution to the organisation's competitive advantage (Damiani Migs 1998).

So it may be easier to measure alignment to core business when centralized. This ease, however, may be diminished if decentralised. Rather than outsource a function to gain control, centralising the function may be a better solution if the function is core.

### ***IN-HOUSE CENTRALISATION ADVANTAGE***

It is therefore concluded that in an already centralised organisation, centralising the facilities management department is most suitable to maintain greater control and may allow for extraction of maximum value, especially if found to be strategic.

Further control is said to be afforded to an organisation in this situation, as the employee/employer relationship will be easier to manage centrally. This "contract for employment" has been likened to a "contract for allegiance". It is assumed that the employees will be devoted agents, however, this cannot be an assumed given, hence centralising the operation affords tighter control over this dynamic (Domberger 1998).

If it is to be accepted that the ILM relies heavily on collaboration to be effective, then centralisation would foster collaboration.

Thus centralised organisations that consider FM as strategic are more likely to extract maximum value (via greater control) if their FM is delivered in-house in these circumstances.

## **SIZE**

The “extent” of control is also said to be linked to the size of the facilities department and the size of the firm itself. A strategic business unit that is centralised in a large firm (as in this case the FM function) will be structured in such a way as to maximise their span of control. The larger the firm and its infrastructure, the more likely the facilities department will reflect this in its centralised structure.

Cotts (1998) claims that in larger organisations, FM functions that would ordinarily be considered staff functions in a smaller organisation become line functions, with line managers assigned to manage them. He states that this occurs, for instance, in companies that have international design and real estate functions.

Value is then said to be maximised through the facilities department’s specialisation<sup>30</sup> advantages. Specialisation advantages would be of value in the same way that a specialised outsource company can add value, that is, by providing maximum service for minimum costs through the joint effects of scale and management focus (Domberger 1998).

However, for this to be realized, the activity must be large enough to leverage on this scale, hence larger firms with larger facilities departments will extract greater value through this dynamic than smaller firms with smaller facilities departments.

Domberger (1998) believes that specialisation, through the division of labour and the fixed investments that yield the economies of large-scale production, will not occur unless it is justified by the size of the market (or department). He claims that demand must reach minimum level before specialisation becomes especially advantageous.

According to a study performed by the International Facility Management Association (1999), respondents to the survey managing small or medium-sized facilities are more likely than those managing large or giant-sized facilities to outsource various services to improve quality and customer satisfaction. As facility size increases, the likelihood of outsourcing to acquire the necessary specialty tools and equipment declines.

Additionally, facility managers who manage firms with fewer than 2,500 employees are more likely than those in facilities with larger site populations to hire outside firms to improve customer satisfaction and quality performance.

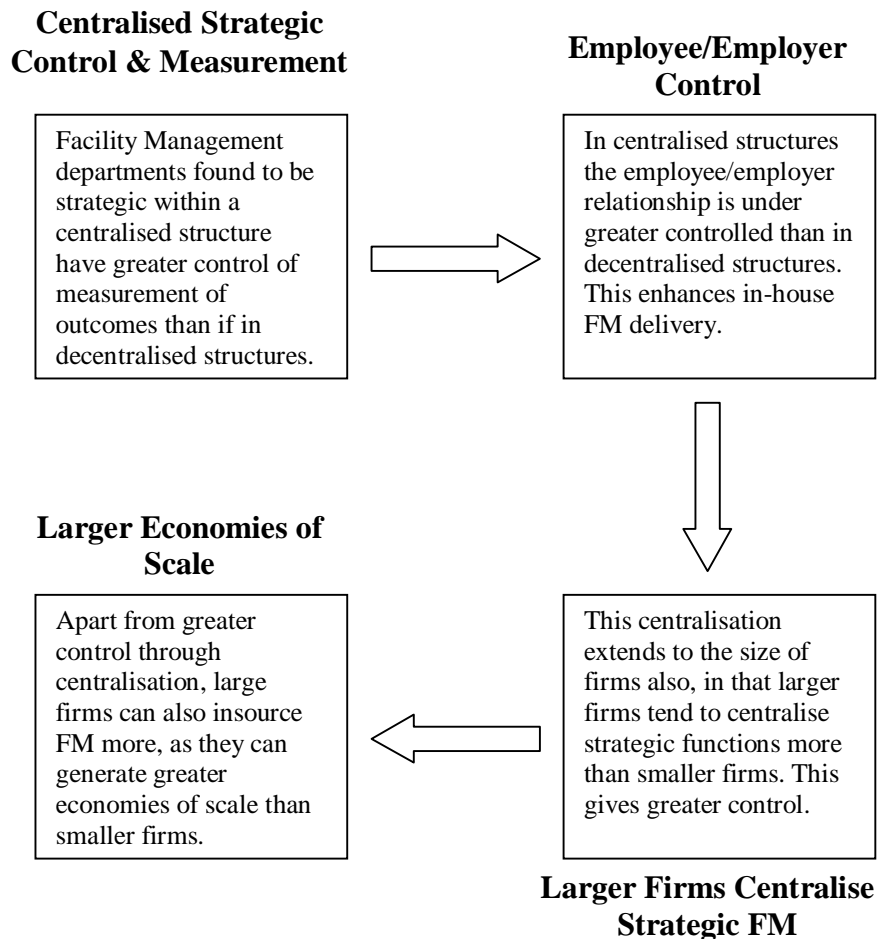
They also add that respondents who manage large facilities are more likely than other facility managers to believe that increased outsourcing will generate problems.

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<sup>30</sup> Economies of scale arise essentially out of indivisibilities in the application of fixed capital inputs, and the increased productivity of labour through specialisation (Domberger 1999), both are applicable to Insourcing in this context.



This is also supported by Heywood (2001), who claims that large firms are hesitant to outsource large internal functions (refer to Flow Chart 8).



**Flow Chart 8 – Insourced Control and Economy of Scale Dynamics**

Given that firms are now more educated to best-practice FM, as previously discussed, large firms may simply not need to outsource if the main driver was to obtain economies of scale or specialization. However, when assessing the size of an organization, consideration must be given to the size of the FM function itself, so that size can then be measured relatively.

These findings support the conclusion that larger firm and facility management department sizes are linked with an increase in control (of costs and quality outcomes) and maximised value (through specialisation) when performed in-house.

## **OWNERSHIP**

As previously discussed, it is then not unusual to find that within these arrangements mentioned, ownership<sup>31</sup> by the firm, as opposed to ownership by outsource providers or sub-contractors (either leasehold or not) of facilities and related infrastructure is common.

This is because it can be argued that further control is gained when productive assets are owned. The outsource providers and their sub-contractors will have less control over the productive use of the facilities due to contractual limitations.

It is argued that ownership confers power to control ex-post contractual outcomes when contracts can not completely specify the rights and obligations of the parties (Domberger & Jensen 1997).

Domberger (1998) adds that organisations that believe they ought to have maximum control over activities *and* assets along much of the value chain will therefore opt for the integrated, in-house production model.

Even if the outsourcing company invests in the assets at the inception of the outsourcing contract and thus owns the assets, the organisation will always have replacement liabilities, should conditions change and a shift back in-house were to occur (Bendor-Samuel 2000)

There are also differences in company structure when there is ownership, as opposed to leased facilities in general. It is argued that those organisations that lease the majority of their properties and plant and equipment will have staff who will manage contracts and leases. This may not be present for those organisations that own their facilities (Cotts 1998).

For example, according to the International Facility Management Association (1999), facilities executives who manage company-owned buildings are twice as likely as those who managed leased facilities to deal with property appraisals internally.

Certainly, ownership held by outsource providers will be reflected in contract length, that is, penalties for early termination. Once locked in, a firm would become liable for ownership for the term of the contract without actually having control over the assets.

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<sup>31</sup> Ownership in this context refers to assets (whether leased or not) which belong to the receiving organisation, as opposed to a service-provider.

Therefore there is support for the suggestion that value can be derived from internal facilities management departments when there is direct ownership over facilities, through increased control and reduction in opportunism.<sup>32</sup>

### ***SPECIFIC ASSETS and CONTROL***

Also as previously discussed, in an environment wherein the FM function is considered strategic, or supporting company strategy (mainly held in knowledge by the facilities manager), and where ownership of assets<sup>33</sup> is high, then they can be regarded as being specific<sup>34</sup> assets (both human and physical).

A defining question regarding the specificity of assets is whether they are shared resources or directly tied to specific activities (Greaver 1999)?

In the environment listed previously (that is, facilities owned for use by the organisations exclusively), it is argued that outsourcing would not be favoured. This is because when assets are specific in nature (as the facilities in this situation) then they are more than likely to be integrated within the organisation to enable maximum control with minimum transaction costs<sup>35</sup> and a reduction in potential opportunism (Coles & Hesterly 1998); (Reilly & Tamkin 1996).

Facility infrastructure in these conditions could be regarded as specific, in that it serves a specific purpose directly relating to the core business of the firm. It would then also be considered strategic in nature. It would be a big mistake to outsource the assets without realising they were of strategic importance. An example would be high-precision equipment integrated along a supply chain for a manufacturing plant. The reduction of transaction costs here would be realised with in-house management of specific assets.

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<sup>32</sup> In this case, opportunism would arise with ownership of assets being held outside the organisation through manipulation of circumstances to favour the outsource-provider, rather than the client organisation as and when opportunities arise.

<sup>33</sup> Assets in this case refer to the physical or intellectual resources that an organisation owns or has under its direct control (Best, Langston, de Valence 2003).

<sup>34</sup> The *Merriam-Webster Dictionary* defines “specific” as **1a:** constituting or falling into a specifiable category **b:** sharing or being those properties of something that allow it to be referred to a particular category; **2a:** restricted to a particular individual, situation, relation, or effect. In this case, the facilities are said to be specific to the organisation and unable to be used by any other organisation.

<sup>35</sup> Transaction costs have been defined by Domberger and Jensen (1997) as every transaction involving a cost in addition to the price (for example, market tendering, contract monitoring, etc.).

## ***REDUCED MONITORING ON SPECIFIC ASSETS***

Transaction costs and opportunism are said to be reduced when specific assets are managed internally. This is due to greatly reduced requirements for monitoring afforded through in-house management as opposed to external contract management (Bradford & Rothwell 1998) (refer to Flow Chart 9).

Reilly & Tamkin (1996) add that internal management does not have these “governance” costs because all those employed should be working for the common purpose of the firm’s profit maximization. In this case for maximum efficient use of owned facilities. They also claim that there are also advantages in continuity, communication and control that should lead to better efficiency and performance.

When the assets are owned, and specific in nature, this suits the model of employee/employer relationships. This is especially given that the internal labour market (insourcing) is generally built around these relationships for longer periods of time than can be exercised in the external labour market (outsourcing), that is, spot transactions.

In these circumstances, transaction costs are reduced because the number of transactions are reduced (that is, employees supervised by employers over the long term without need for complex contracts). Thus for transactor-specific assets<sup>36</sup>, wherein single ownership is more desired than joint ownership (due to the potential for opportunism – especially in uncertain environments), monitoring requirements will be reduced, as are transaction costs (Demsetz 1992)

Depending on the “lifecycle” of the assets, it could be argued that protection of assets is more likely to be easier when owned, management and integrated at all levels of the firm with little effect on efficiency tied to a contract, as would be the case with outsourcing.

Thus firms that insource under these conditions should reduce transaction costs more than if they outsourced.

## ***UNCERTAINTY and OPPORTUNISM***

Therefore, as previously discussed, where there are specific assets, such as in this case, then any uncertainty<sup>37</sup> surrounding the environment, which these assets operate

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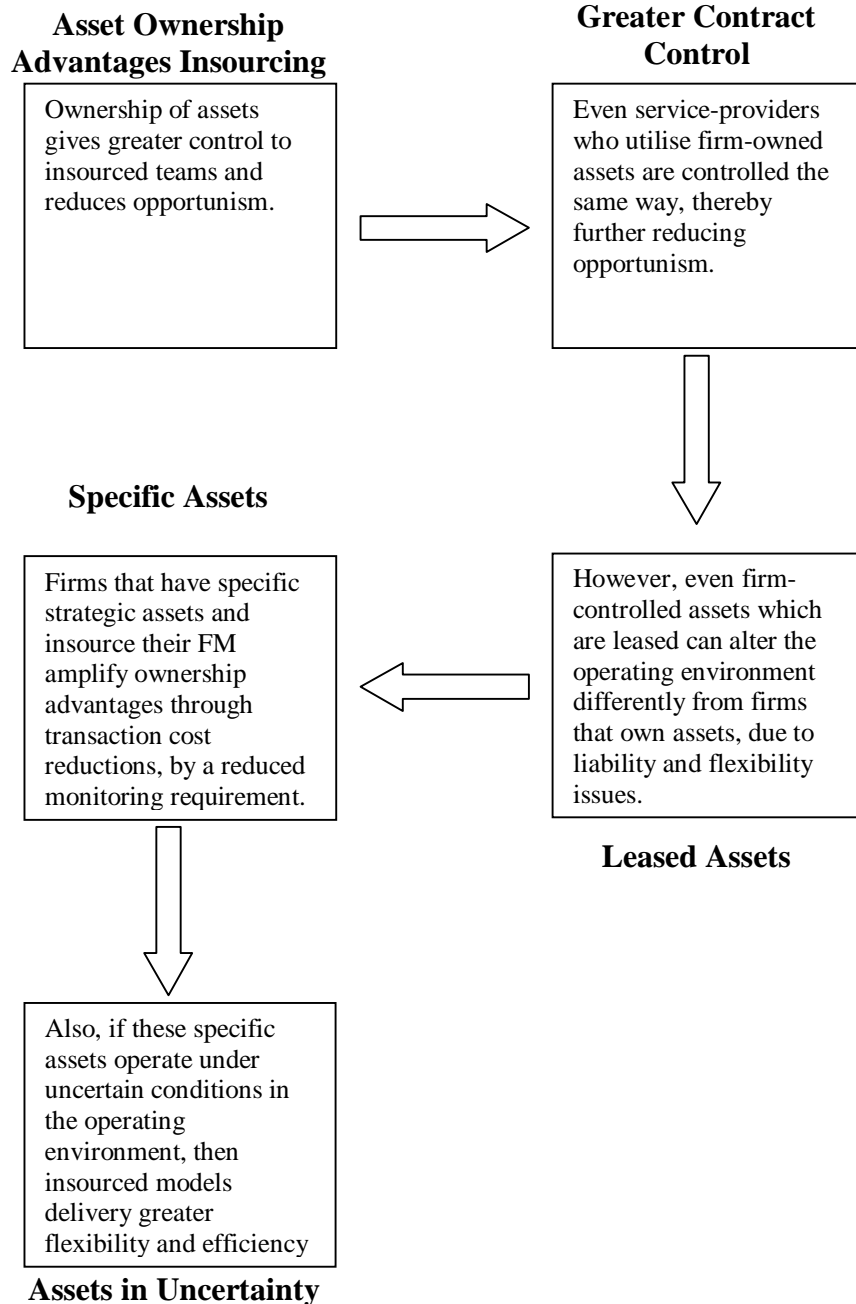
<sup>36</sup> Transactor-specific investment (frequently labelled asset specificity) refers to durable investment whose value is highly dependent on the identity of the co-operating parties (Demsetz 1992).

<sup>37</sup> “Uncertainty” in this context refers to the amount of probability that unfavourable conditions will affect assets.

will also add to integration preference over outsourcing. This is because when intimate collaboration is necessary to address issues; in-house teams are best situated to address them in a more efficient manner. Outsourced companies would be inclined to “haggle” for optimum outcomes or hold to maladaptiveness should the “contract” allow them to do so. Thus, transaction costs would increase due to this “hold-up” resulting in increase management monitoring.

The impact of uncertainty cannot be ignored. Just consider disaster recovery planning. When issues arise in the operating environment, these usually affect more than just the disrupted function for the business. Outsourcing cannot “scenario” plan for every situation; thus, should disruption occur, it will take more than the outsource provider to find a remedy. This then may incur additional cost in the doubling-up of management focus and time, as both the organisation AND the outsourcer work towards a solution.

Within the firm, it is argued, these issues would be addressed more efficiently (Coles & Hesterly 1998). It is, however noted that some internal teams may also “haggle” under these conditions, however it could be argued that treatment in this case would be non commercial in nature.



**Flow Chart 9 – Insourced Advantages – Ownership of Specific Assets in Uncertain Environments**

Coles & Hesterly (1998), after a survey<sup>38</sup> of uncertainty surrounding the operations of hospitals found that:

Asset specificity, both in the context of physical assets and human assets, is an important determinant in the decision to integrate transactions for the hospitals in our sample. We also find strong support for the impact of uncertainty on the decision to integrate. Increasing levels of uncertainty, in this case in the form of more complex transactions and more technologically dynamic environments, have an important role in the decision to integrate these transactions.

Therefore, it could be argued that the degree to which specific facilities assets are uncertain, or operate in an uncertain environment, will bear upon the value proposition given from in-house facilities management procurement and delivery option – through reduction in potential opportunism, increased flexibility in sorting out issues, reduced transaction through reduced need to monitor, and increase in control of outcomes.

Reilly & Tamkin (1996) add that in specific transactions there is unlikely to be a true market to exploit and thereby gain a cost advantage. They claim this to be especially true where the specificity comes from the knowledge and expertise of employees. They say that uncertainty is important because arrangements in which possible future situations are complex or hard to anticipate are ripe for exploitation (refer to Figure 4). Of particular note is the flexibility afforded to the organisation in these situations in which specific assets in uncertain environments are managed internally.

## ***FLEXIBILITY***

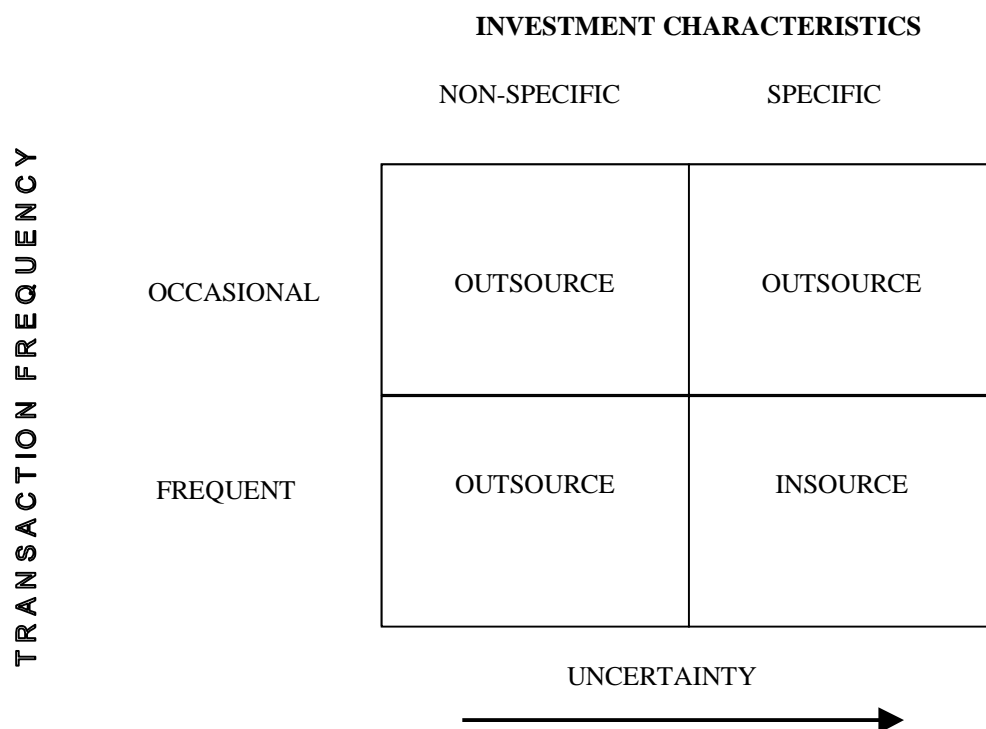
This flexibility is said to be achieved through familiarity of assets in uncertain environments whereby, when the need to match labour inputs more precisely to work requirements exists, it can be met more easily in-house, rather than externally under fixed long-term outsourcing contracts.

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<sup>38</sup> Coles and Hesterly's report findings (1996): the support for both the main effects of asset specificity and the main effects of uncertainty in the context of asset specificity across this broad level of transactions provides a strong basis for the impact of transaction costs dimensions in the decision to integrate or contract a transaction within this sample of firms in the hospital industry.

Familiarity and the inclusion in the wider formal and informal business processes are said to be the advantages afforded to the in-house teams in these situations (Reilly & Tamkin 1996).

One would expect flexibility to decrease the closer the end of any outsource contract. Fuelling this “hold-up” with unplanned disruption would cost the firm greatly, more so at the end of the contract than the beginning of a contract. It would be much easier to allow the idiosyncratic advantage of insourcing teams to “rectify on the fly”.



**Figure 4 – Williamson’s Model of Transaction Cost Analysis**

#### 4.3.2 VALUE FROM OUTSOURCING

However, as previously postulated, there are said to be certain conditions that induce value when outsourcing the FM function as well (CRC for Construction Innovation 2006); (Kakabadse & Kakabadse 2002); (Momme 2002); (Bertolini et al. 2004).

Thus, if it is now to be suggested that this is correct, and especially if the “choice” given to firms fuel “cycles”, then outsource value must also have its drivers identified and researched, with each attribute further investigated through available literature.



## **NON-CORE**

It has almost become widely accepted, or at least strongly suggested, that firms should not outsource core functions (Oates 1998). This is because outsourcing core functions puts the firm at risk of becoming vulnerable to both the outsourcing company and its competitors. This is via relinquishing the unique skills that created their competitive advantage in the first place.

However as previously discussed outsourcing non core functions would effectively free up management resources to concentrate on those activities that are found to be core and provide a competitive advantage (Raiford 1999); (HRO Today 2003) .

Reilly & Tamkin (1996) comment that should a firm divest itself of non-core activities, this should free up managerial time from peripheral tasks and allow concentration on the key issues for the core business. They claim that there is now a recognition of the opportunity costs of investing time in unimportant activities, particularly when managers are hard pressed, both within functions and between them.

Therefore not only can outsourcing non-core activities provide cost and flexibility savings, it may also open up opportunities for future competitive advantages.

This dynamic is known as “strategic outsourcing”, whereby the drive for outsourcing stems from not only cost savings and short term goals, but for future strategic effectiveness in competition (Tranfield, Denyer & Burr 2004).

Johnson (1997) cites a PA consulting survey entitled: “International Strategic Sourcing” which stated: “It [strategic outsourcing] is not driven by cost or government pressure. Instead it is a fundamental part of the universal search for more effective performance”.

The attractiveness of increasing a firm's competitive advantage by simply outsourcing non-core FM would be too hard to ignore. There would simply be no reason to retain this in-house, especially in industries that compete fiercely (for example, department stores).

## **TRANSFER LEVERAGES**

For example, if found to be suitable for outsourcing, the organisation may be presented with an opportunity to take advantage of the initial transfer from in-house to external facilities management from the outset of making the decision to switch. That is, transfer leverages may be gained (Raiford 1999).

Certain risks can be transferred from within the organisation over to the external provider (Langston & Lauge-Kristensen 2004), however, cost factors would more than likely be built into the contract to accommodate this risk.

However, some risks are able to be absorbed by the service-provider.

Heywood (2001) observes that the outsourcing service-provider is subject to the same risks as any client organisation, but that this can be significantly reduced when the investment is made for and spread over the work carried out for a range of clients. For example, there may be restructuring opportunities that can take place at the same time, effectively flattening large internal structures and reducing overheads (Marcella 1995). This may also aid future competitive advantages.

The main area for added value in this argument is through initial transfer leverages through economies of scale. This happens when an outsourcer can accommodate the client organisation's FM process into its firm without much alteration. This usually creates an opportunity for the outsourcer to utilise existing resources within its structure (for example, physical and material assets) to increase purchasing power, essentially combining volumes to create lower per unit costs (Bendor-Samuel 2000).

Without a doubt, the main and initial advantage of outsourcing has been transferring unwanted assets across to an external entity. This is virtually impossible to achieve by insourcing. However, caution should be taken to ensure that this is not the only benefit of outsourcing. If it were, the outsourcer would be at risk of the firm "returning" in-house once the transfer benefits were realised.

However, at the initial change-over, the supplier's expertise may mean that specialisation forces can create immediate change and add value through costs reduction via efficiency increases (refer to Flow Chart 10).

This specialisation leverage is said to be found in the knowledge sources or "access" that the outsourcer has in its networks. It is claimed that the outsourcers are able to innovate through the assembly of expertise, as they will have a much larger market penetration in these specialised areas (Quinn, Doorley & Paquette 1990); (Salvetti & Schell 1995).

### ***COMPETITIVE GLOBAL ENVIRONMENTS and FLEXIBILITY***

It was previously said that competitive forces are a driver for change within organizations. Thus when faced with the favourable outsourcing circumstances listed above, it was argued that organisations will opt to outsource facilities management to capitalise on these initial leverages.

Intense competition<sup>39</sup> in a globalised<sup>40</sup> environment may force many organisations to adopt outsourcing if all the other key variables are suitable (Barrett 1995). It is claimed that this globalised efficiency pressure requires firms to become *flexible* in order to compete.

Flexibility<sup>41</sup> is becoming an important part of realising efficiency increase (Maechling & Bredeson 2005). As Nutt & McLennan (2000, p. 254) stress:

Flexibility is a key in a changing world, and that means not only organizational flexibility and some sort of flexibility in the physical workplace, but also flexibility in attitudes of people.

This “people flexibility” has been seen in human resources surveys as an increase in the contingent and part-time work force – usually hired by outsourcing companies (Nelson-Nesvig 1998).

Here it is argued that there is an ability of the service-provider (outsourcer) to move labour quantities to suit requirements more easily than internal teams could.

Also, organisational flexibility is said to be present in this outsourcing arrangement, as the outsource provider, dealing in the market with other providers, can respond faster to changes and shifts in supply and demand than can in-house departments (Domberger 1998).

This globalisation has also been attributed to opening up the door to specialist firms. It is increasingly becoming easier for these specialist firms to offer their services without geographical boundaries (due in part to technological advancements) (Katsanis 2003).

Nutt & McLennan (2000, p. 5) comment:

Today we are witnessing ever shorter business time horizons, the diversification of work practices, more responsive working arrangements, the global dispersal of work, new multi venue multi location ways of working, all with increase reliance on subcontracting and partnering.

Facilities managers, twenty years ago, saw a shift from regional, to national, and now to global management (Incognito 2002).

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<sup>39</sup> “Competition “ in this context refers to the core business market environment.

<sup>40</sup> “Globalisation” in this context refers to international market influence on core business.

<sup>41</sup> “Flexibility” in this context refers to high-level labour movement flexibility as opposed to day-to-day operational flexibility.

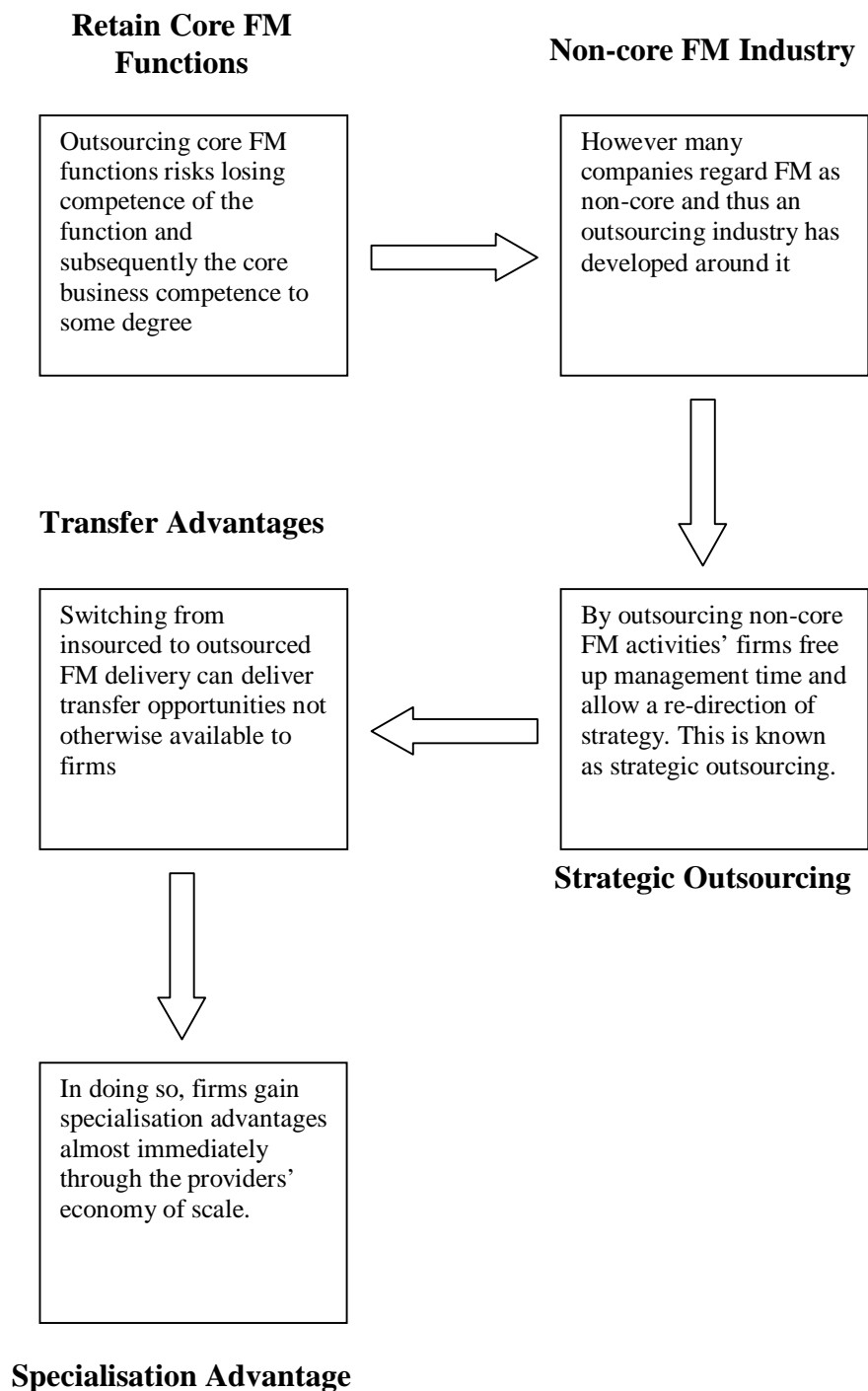
Thus competitive forces have been attributed to organisations' drive to increase their efficiencies. Specialisation is said to enhance these efficiencies, thus organisations seek to specialise within themselves (core business) and to outsource non-specialised areas to specialists (Domberger 1998).

Does this mean outsourcing will grow in line with the growth of globalisation and with the rise of competition? This question is yet to be answered; however, there will be a distinct advantage for firms that are globalised to outsource their FM. This possibly could deliver stability, standardisation, and even a lower unit rate for their FM delivery.

### ***BOUNDED RATIONALITY and GLOBALISATION***

Thus it is not surprising that the inability of firms to know everything (or bounded rationality) has been attributed to firms being forced to outsource to providers, that may already be competing on the global arena, in order to compete (Johnson 1997); (Nutt & McLennan 2000) (refer to Flow Chart 11).

As previously discussed, it is claimed that the outsourcer should be in a better position than in-house teams to supplement and support those *strategic* areas in which the client organisation competes (Nutt & McLennan 2000).



**Flow Chart 10 – Outsourcing Advantages**

Here it is argued that competition holds down prices (McIntosh, Shauness & Wettenhall 1997), and that much of this competition is being accelerated due to large productivity increase through technological advancements, as previously mentioned (Domberger 1998). The specialist skills of the outsourcer then become a viable value-adding commodity for the client organisation.

Bendor-Samuel (2000) adds that companies facing increased competition from foreign markets must now look to their core competencies and differentiate between what is a core process and what is important but not core. He believes that they must seek to improve their business processes and look for faster, less expensive ways to perform those processes. He thus claims that for many companies, outsourcing is the solution, holding the potential to accomplish what seems impossible – to create value where none exists.

Thus, as previously mentioned, the specialisation of firms makes them suitable candidates as service suppliers. According to a survey by the International Facility Management Association (1999), 97% of respondents outsourced the FM function to gain the specialist skills of the service providers. This specialisation cannot be found within the firm at the time of outsourcing, thus indicating a level of bounded rationality. It is a fact that the firm cannot be all things to all people. Divestiture of expertise is required to sustain the firm at all levels. Bounded rationality can be linked to the downfall of large vertically integrated firms in the 1980s, with a subsequent shift to outsourcing. However, this does not mean the whole firm is under bounded rationality. A close look and assessment should be performed on all and within all functions, otherwise over-outsourcing may occur.

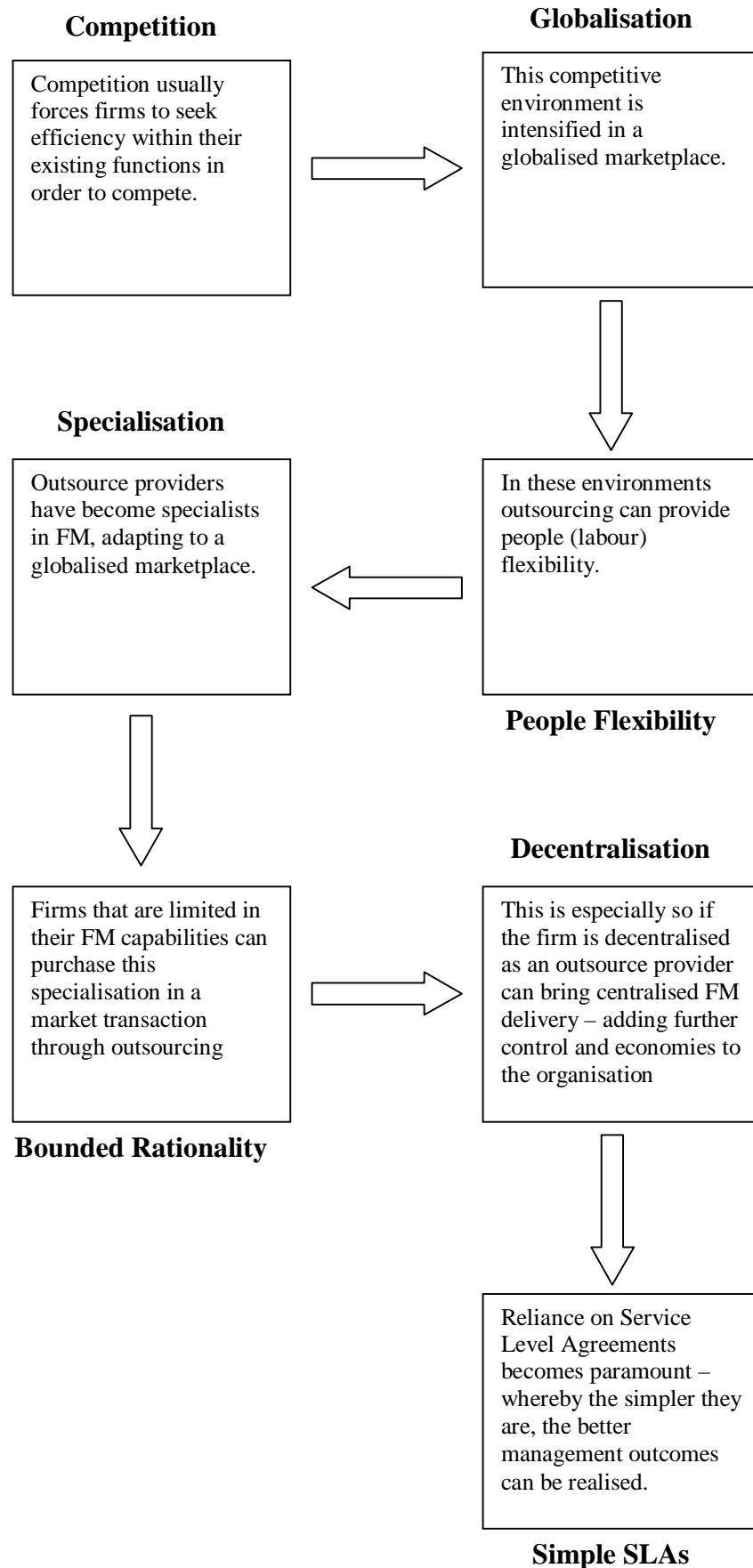
### ***DECENTRALISED***

Also, given the above argument, and as previously discussed it may also be advantageous to adopt outsourcing if the company is, or is about to become, decentralised<sup>42</sup> in its operations.

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<sup>42</sup> “Decentralised” defines a regional spread of operational control and authority to make decisions autonomously.

**Flow Chart 11 – The Optimum Outsourcing Environment**



Turning over the management and control to an external “centralised” provider could allow the maximisation of value, under certain conditions, in favour of the client organisation.

This is said to be achievable in that the market forces that outsource companies work in are essentially a decentralised environment in itself. This then is a flexible medium that the client organisation could leverage off when rapid changes are required. As previously mentioned, this has been achieved in the past through advances in technology (Domberger 1998).

As firms move to flatten bureaucratic hierarchical organisational structures, they may have also decentralised in the process. The decision to decentralise or not is not the focus here. The focus is on how outsourcers then “moved in” to help the firm control the function. Just how much this control also controls costs will be the deciding factor as to whether this dynamic has longevity. More than likely, opportunism will come into play eventually. However, it certainly filled a gap initially.

### ***SIMPLE SERVICE LEVEL AGREEMENTS***

Given this decentralisation and corporate governance issue, to manage the outsource provider’s management of value and costs under an outsourced FM contract, it is reasonable to say that this is largely managed through service level agreements (SLAs) and certain standards being set (Kornet 2001), allowing any client organisation to simply monitor the outsource providers performance (Reid-Thomas & Phillips 2005). That is, there are value for money, cost efficiencies, optimum efficiencies, and maximum productivity drivers to measure (Nutt & McLennan 2000).

It is also furthered that this measurement (that is, SLAs) be kept as simple as possible.

Damiani Migs (1998, p. 72) adds:

It is difficult to measure accurately the costs and benefits of facilities management. Peter Drucker has often quoted: If you can’t measure it, you can not manage it.

Apart from measurement issues, there are other problems with the reliance on key performance indicators (KPIs) and SLAs for effective contract management. That is, these may not be enough to make the contract work. It is said that reliance solely on these metrics is not sufficient; there are relational values to measure as well (Domberger 1998).



Considering these issues, it could be argued that the whole idea behind the outsourcing agreement is to have simplified SLAs. If this is not achievable, the decision to outsource may not be viable. Relational issues will develop in the future, should insufficient or excessive SLAs and KPIs exist.

According to a study performed by KPMG IMPACT Outsourcing working group (1995), keeping procedures simple reduces the costs of monitoring and managing the outsourcing contract. It is suggested that complex procedures lead to increased confusion and disputes. Clear boundaries for outsourcing contracts, along with clear roles and responsibilities, reduce confusion, cost, and risk (Administrative Review Council 1998).

Bendor-Samuel (2000) believes that one of the key elements and central truths of outsourcing is that a service that is difficult to measure will be difficult to manage.

This difficulty in managing is claimed to be brought about by the potential for the service supplier to shift originally intended services from the contract to variation services. This would incur unnecessary costs for the client organisation that should have been covered under the original agreement.

Thus, simple SLAs would create a more manageable environment in which both parties could operate.

During the foray into outsourcing in the 1990s, moving from bureaucratic informal processes to external management was possibly mismanaged initially. This was due to its complexity and also through trying to copy those management principles previously employed internally. This has led to the observation that outsourcing has different management drivers from those of in-house teams. Simple SLAs and KPIs, rather than complex ones, would allow the commercial reality of a contract to self-perpetuate its outcome. This is because trust is the key, balanced up by profit-and-loss drivers for the outsourcer, such as profit-at-risk metrics.

#### **4.3.3 FACILITIES MANAGEMENT COSTS**

Having grounded the perceived values associated with FM procurement, there are also perceived costs to consider.

It was previously put forward that some firms seek outsource providers of FM due to the previously existing in-house FM delivery becoming too costly to maintain. It was argued that the in-house teams began to build large empires with ever-increasing staff numbers.

One reason given for this was that FM is evolving into a multidiscipline function that requires ever-increasing skills and knowledge from its practitioners. To

compensate for this rapid and complex environment, organisations employ more and more people to cope. This eventually impacts on value.

History dictates that there was a definite need to correct large inefficient in-house teams with outsourcing. The question is, will this necessity for correction be repeated for in-house teams should the function be returned in-house once again over time?

### ***IN-HOUSE COSTS***

Thus, if it is to be accepted that the in-house cost of increased staff numbers is in the very nature of insourced FM teams, possibly a by-product of intensified collaboration which became imbalanced over time, requiring market forces to bring correction, then each attribute should be further investigated through available literature.

### ***MULTIDISCIPLINARY***

As previously discussed, managers of facilities come from a wide range of industries and backgrounds, given that the FM discipline is diverse.

Given this, it is unlikely that these managers will have all the necessary qualifications and experience to adequately manage every aspect of the facilities themselves.

As such, in-house teams are likely to employ a range of managers and support persons to manage the major streams of FM functions. Such as operations and maintenance, real estate, and environmental and safety management, etc. (Best, de Valence & Langston 2003).

Best, De Valence & Langston (2003) also observe that the range of skills and knowledge required of facility managers, if they are to successfully carry out all of these functions, is comprehensive. It may include everything from computer networking and mechanical engineering to human resources management theory, occupational health and safety, contract negotiation, financial planning, subcontract administration, construction management and much more.

Considering this, it cannot be expected that operational requirements are sustained without an adequately staffed and skilled FM department (Roberts 2001),

As discussed, the effects of bounded rationality will decrease individual efforts to fulfil the demands of a multidiscipline workload. It is anticipated that staff numbers would increase to compensate; as facilities managers find themselves becoming more and more generalist in nature (as opposed to specialists) in order to manage the basket of services required (Payne 2000).

This is especially so when the organisation is undergoing building and construction activities.

In this case, it would be reasonable to assume that firms would need to increase staff numbers to manage these projects. They often have unique requirements which do not lend themselves to regular organisational efficiencies and cost-effectiveness (which is usually realised through consistency of work flow under normal operating, non-project environments).

This is said to be due to project work lifecycles being shorter and also requiring different skills from day-to-day activities (Katsanis 2003).

Other ramifications of this diverse and vast basket of services are said to extend to the very future of FM itself remaining an identity in its own right. That is, that survival is dependent on FM becoming a truly multi-professional undertaking through an open cross-disciplinary culture providing coherence for in-house teams and external stakeholders (Nutt & McLennan 2000). Thus a lack in coherence will cause inefficiencies to set into the culture of the firm for the FM departments, due to its multidisciplinary nature.

In these circumstances, where FM is performed in-house, delivery of FM services is usually delivered by a number of departments, under the control of different managers under well-defined demarcation boundaries. Some would argue that this then leads to a stifling of innovation, as it locks in inefficiency, with services being delivered in a fragmented and inconsistent manner (Payne 2000). It is claimed that the very nature and large size of the department stifles creativity and entrepreneurship as the necessary controls to manage this “behemoths” reduce employee empowerment (Greaver 1999).

Value is then said to decrease as a sort of “critical mass” develops. Pressures both internal and external to the organisation demand efficiencies from the internal teams which can now no longer be delivered cost-effectively due to high staffing overheads.

Damiani Migs (1998) believes that management of in-house support services may do the hard innovative and often costly work that is required to make the service work productively. This observation then leads to a flow-on effect whereby when in-house support departments are criticised for doing a poor job, the reaction is to hire more staff. This then increases costs with little chance of improving productivity or efficiency.

Damiani Migs (1998) further makes the observation that maintenance staff turnover for in-house teams is relatively low, making them expensive to keep over the long term.

Cotts (1998) attributes this type of inefficiency to a failure to understand the nature of FM and the nature of organising where organisations “grow like Topsy”, with no formal growth plan. He adds that under these conditions the facilities department begins to treat all work like project work, forcing project management principles onto day-to-day operations. This then falls apart, as there is a failure of work integration into the organization.

His solution is for the Facilities Department to grow in line with the organisation’s growth. He is an advocate of the internal organisation being the “stepchild” of good FM and that a facilities manager must solve 95 per cent of his or her problems through effective organising.

However, it is fair to say that this is a very idealistic view, as it is unlikely that the growth of the organisation and that of the FM discipline could ever be comparable. There would simply be disparity between supply and demand shifts within the organization, to which staff numbers remain inflexible over time. This then makes it impossible to adjust to the organisation’s needs. As a result, firms may seek to outsource this in an attempt to reduce costs (Lankford 1999) and still deliver the services.

It could be argued, therefore, that one of the first processes is to pull apart the hierarchical nature of the department and reconfigure it with the outsource provider.

Cotts (1998) confirms this position and states that the great impetus to farm out facilities services comes from a desire to eliminate staff positions. He observes that in the private sector this occurred in an attempt by organisations to eliminate middle management.

It is thus argued that FM is especially suitable for this type of restructuring, thus making it easier for firms to outsource the function.

Payne (2000) adds that it is in this remodelling and restructuring that one of the key benefits of the facilities “approach” lies. He also believes that stripping out the inflexible barriers of demarcation can allow true innovation to be developed with regard to how services can be provided, and with this approach inefficiency can be eliminated, by utilising FM itself as a vehicle for this change.

He attributes this to observations of working practices and procedures that have become entrenched, inflexible, and inappropriate, whilst remaining unchanged. Once cost drivers are at play, there is great opportunity to re-engineer the function by utilising an outsource provider.

Thus he claims that an effective way of adding value to the facilities service provision is to package the services in order to produce the best effect, maximise flexibility and gain economies of scale. He further observes that the success of this

approach has seen organisations respond to the challenge of efficiency by exporting unproductive work and people as fast as they can.

He further adds, however, that this situation of outsourcing large inefficient staffing numbers may not be for the right reasons. Testing the market with outsource providers solely on the basis of removing staff may not be the right course of action. Staffing issue, he argues, should be addressed through internal means.

However, it is reasonable to assume that outsourcing will always be the preferred option in these situations (refer to Flow Chart 12)

Barrett (1995) supports this view by adding that firms will turn to outsourcing facilities management in these situations. This is due also in part to increased competitive pressures and recessions in a globalised market (Greaver 1999), as previously discussed.

According to a study performed by Johnston and associates through the Institute of Management Foundation (1997), one of the main reasons firms sought outsourcing, as opposed to internal delivery methods, was due to the function being difficult to manage or out of control and a need to reduce and control operating costs.

Cotts (1998) agrees with this and states that outsourcing in these situations allows the organisation to save money if the in-house staff are on high benefits, as the number of employees is greatly reduced.

Corporate fragmentation is then said to take place as a result, whereby the increase of availability of external specialist providers, combined with an increase in complexity of the services required, compels firms to outsource and gain added value.

This added value is said to arise as the organisational boundaries are redrawn, the range of internal production activities are narrowed and the newly acquired external provider can reduce costs, yet still deliver the complex services required. That is, economies of scale forces are then at play (Domberger 1998).

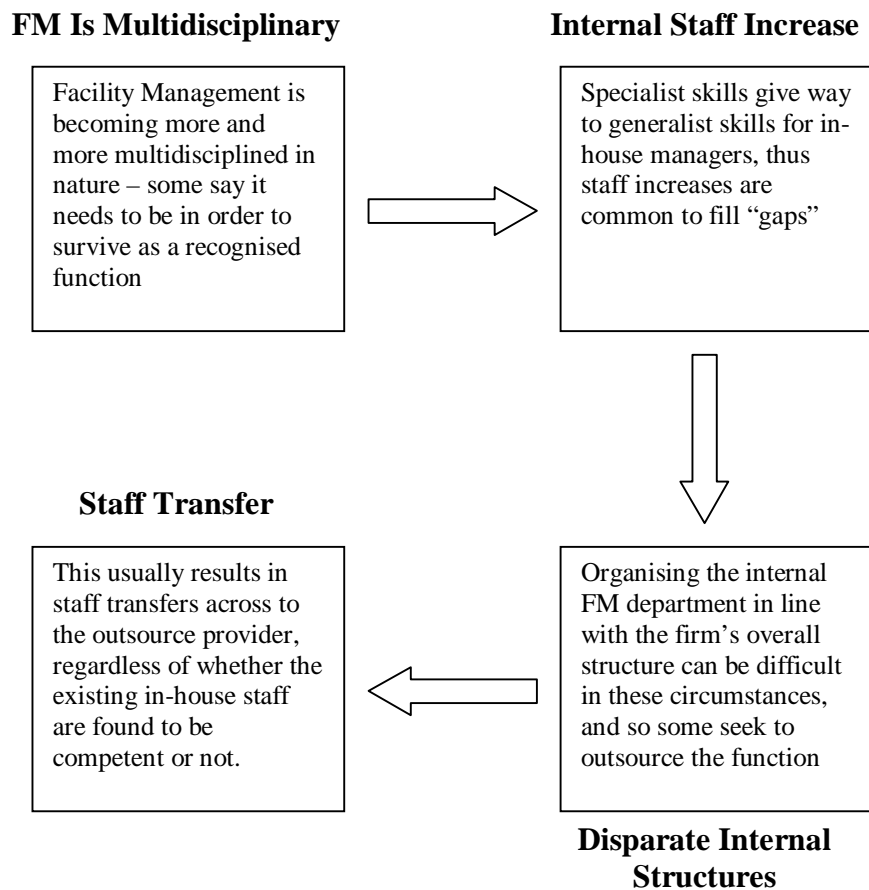
Domberger further states that there are circumstances in which internal service-providers become resistant to demands from corporate management. It becomes difficult or impossible for managers to elicit performance improvement without extensive negotiations and concessions. He observes that many a manager has commented that the benefit of contracting for services is that, faced with a competitive market, contractors will revise working practices and introduce new technologies at a pace that is rarely achievable by the more sheltered in-house teams. Thus he believes that the externalisation of production leads to a much more intensive focus on performance monitoring.

He attributes improved organisational performance (in this case the FM function) to outsourcing which reduced staff numbers, introduced new skills and working

practices, and modified individual incentives, employment terms, and attitudes to the workplace.

Agreeing with this, it could also be added that it increases competitive advantages. This is said to be achieved through close management scrutiny of each internally supplied service, activity by activity, resulting in shedding of those services that can be performed better by external providers.

In turn, it is then argued that the organisation becomes leaner with less bureaucracy, allowing a focus on activities which are performed best in-house, by introducing new objectivity into the evaluation process, generating strong pressures for productivity gains onto the in-house teams (Quinn, Doorley & Paquette 1990)



**Flow Chart 12 – The Cost of Insourcing**

However, this philosophy has been known to extend to organisations that have good performing in-house teams also. Organisations use outsourcing to restructure internally, simply to allow management to focus on what they consider core competencies.

Here it is argued that non-core internal area managers do not get the required resources necessary to achieve world-class functioning when compared to external specialist providers. As such, they cannot compete when each activity is costed and scrutinised, regardless of whether they are performing well when compared to the organisation as a whole (Greaver 1999). This would be particularly exacerbated when the in-house team is top-heavy in staffing numbers and structures, as previously described.

For some industries it is claimed that industrial relations issues can further add to the attractiveness of outsourcing the department. It is said that a reduction in staff will eventually lead to a reduction in union involvement (Benson & Ieronimo 1996).

Thus when the internal FM function costs are identified as being excessive, then outsourcing the function may in fact reduce costs under these circumstances.

Ultimately the multidisciplinary nature of FM demands a huge focus of skills. Simply put, outsourcing performs this with fewer staff. Thus, in comparison, insourced teams become too costly.

#### **4.3.4 OUTSOURCING COSTS**

However, as previously discussed, the choice of outsourcing the FM function may not be final, and there could eventually be impetus for the firm to shift back towards in-house facilities management over time (due to the outsourcing arrangement eventually leading to a perceived increased costs and decreased value).

Thus, if it is to be accepted that there are also costs associated with outsourcing FM, then each attribute should be further investigated through available literature.

It stands to reason that should in-house provision experience costs through developing a critical mass of bureaucracy through staff and/or resource increases, then we would not expect to see the same cost phenomena happening in the marketplace through outsourcing. However, the notion of removing one set of costs through outsourcing but potentially creating another set of unique costs should be examined in detail, especially their drivers, to ascertain if and when it is truly necessary to do this to a firm.

#### ***MONOPOLY***

As previously mentioned, when firms turn to outsourcing the FM function, they transfer control of processes and/or assets to an external provider. This “transfer” is now said to lead to the creation of a monopoly for the outsource provider.

Thus the organisation may become controlled and dominated by the outsourcer, to which the response may well be an “alternative competitive sources strategy”. That is, multiple outsource providers. Therefore, whenever a firm outsources, it creates a new set of potential competitors to some degree (Quinn, Doorley & Paquette 1990); (Marcella 1995).

Thus the benefits of transfer of control (outsourcing) may also lead to problems caused by any monopoly created and further exacerbated by the subsequent need to divest this control with other outsourcers in an attempt to mitigate this monopoly risk.

According to a survey by the KPMG IMPACT Outsourcing working group (1995), a recommendation was made to avoid locking in a single supplier. The reason given was that it effectively reduces switching costs. This discouraged the current outsource provider from taking advantage of the organisation, which would ultimately affect cost and quality outputs.

Bendor-Samuel (2000) agrees with this and adds that in outsourcing, whereby the client organisation gives up control of the process, the client organisation will usually face significantly increased costs if it decides to switch service-providers. And in the event of an early termination of the relationship, the service provider's switching costs (often embedded in the transaction) may become the responsibility of the client organisation. In addition to termination charges, if the client organisation decides to resume responsibility for the process itself, it would be necessary to rebuild its infrastructure and recapture the process expertise. He states that this can be costly and may not be easy to do. This is because the client organisation may also have to replace the capital investment, time and materials, because the service-provider would have begun to integrate these into its own supply chain.

Thus the benefit offered for securing multiple suppliers was that over-dependence on a single supplier can make the costs and risks associated with moving to another supplier high. By divesting this risk, pressure on the outsource provider to perform is reduced, as is monopoly power.

Simply put, if the organisation is to retain control, it must be careful that outsource suppliers can not gain a power base over them (Cooper & Slagmulder 1999).

However, for the use of multiple service-providers to be an effective barrier against monopolies, competition between them must exist. Without competition there could be opportunism and collusion. The creation of competition in this instance is difficult to achieve and requires an increase in set-up costs, management time (Lyne 2002), and causes disruption to the organisation; as the function is divested amongst the various suppliers (Heywood 2001).



An increase in monitoring costs would also be associated with the use of multiple service-providers.

As Heywood (2001, p. 95) states:

Even where one provider has ultimate responsibility for the actions of other providers and minor sub-contractors on a site, it would be very unwise for the client to “leave them to get on with it”.

Given this, it can be said that when considering this issue, the organisation is at a disadvantage almost from the moment it outsources. The outsourcer will be experienced in what constitutes current best practice for the principles of FM – including the associated costs. As the client organisation will not have this information, the service-provider may use this to its advantage (Heywood 2001).

This is supported by Bragg (1998), who believes that a company that is new to outsourcing is already in a losing position, because it may not know what terms in an outsourcing contract may cause problems as the relationship with the suppliers matures over time.

Bragg claims one of the major reasons for this is inadequate service level agreements being in place up front, as previously discussed.

Another reason given is that the client organisation also loses its control over the contribution to productivity increase for the facilities service as a result of any monopoly created by the service company. This would cause conflict.

Bendor-Samuel (2000) believes that this is because, in turning over the ownership of the process to a service-provider, the client organisation has also turned over the ability to dictate remedies. He claims that as these factors emerge in the outsourcing relationship, the potential for conflict increases significantly.

This is supported by Reilly & Tamkin (1996) who add that due to outsourcing, staff insecurity sets in, due to loss of control and ownership through monopolistic initiatives by the service provider. This leaves the organisation unable to do things for itself, such as reinvigorate itself due to staff losses or even to change or develop as an organisation in certain affected areas.

This situation is thus said to be self-perpetuating. The initial process investment costs, combined with the potential for high switching costs, will lead to longer term contracts. This then shifts the economic power to the supplier as long as the relationship exists (Bendor-Samuel 2000)

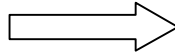
It was previously established that outsourcing only takes place when there is a transfer of control of assets and/or processes. Interestingly, one of the main reasons

why organisations brought the FM function back in house was to regain this very control back from the service-providers (International Facility Management Association 1997) (refer to Flow Chart 13).

They report that the reason most facilities managers bring back a service internally is to regain control. Compared to their 1993 outsourcing study, a significantly larger percentage of facilities managers has brought services in-house, because they were dissatisfied with the outsource providers' performance (95% in 1993 versus 45% in 1999).

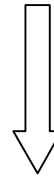
### **Transfer to a Monopoly**

The “transfer” involved with outsourcing can create a monopoly for the provider almost from the outset.



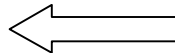
### **Multiple Providers**

Firms may seek to “Spread” the function across multiple providers to reduce this monopoly situation.



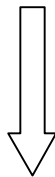
### **Longer Term Contracts**

To compensate, firms usually enter into longer term contracts to avoid having to incur additional set-up costs at the end of a contract.



However, using multiple providers has its own set of disadvantages, such as increased monitoring and duplicate set-up costs.

### **Increased Monitoring & Set-up Costs**



Thus the combined effect of these issues is unavoidable control loss for the client organisation to some degree.

### **Ultimate Control Loss**

**Flow Chart 13 – The Outsourcing “Cost” Environment**

Therefore, it can be suggested that control will be lost to the outsource provider, due to any monopoly created through outsourcing. As a result, this could eventually lead to a negative impact on the remaining internal staff through a perception of loss of control – thus causing an “us versus them” attitude, further degrading relationships (Nelson-Nesvig 1998).

However, remembering that a type of monopoly existed within the in-house teams influencing firms to seek external providers, so the outsourcer’s monopoly is the monopoly a firm “has to have”. The risk occurs here if firms try to avoid a monopoly altogether by altering the fundamental framework of the outsourcing contract to keep as much control as possible. However, this is potentially damaging through nullifying the true outsourcing dynamic and replacing it with more of a sub-contracting role.

### ***RELATIONSHIP***

According to Maromonte (1998), major corporations around the world are not obtaining the benefits they were expecting from outsourcing. One of the main reasons found was that the management of the relationship was adversarial rather than co-operative.

On the other hand, it is argued that the optimum relationship between client and supplier would benefit the organisation by improving efficiency, quality increase, and cost control or reductions. Innovation would be encouraged in this type of relationship (Payne 2000); (Maechling 2005); (CRC for Construction Innovation 2006).

It is also furthered that for the facilities management profession, outsourcing as an option is dependent on a good relationship with the outsourcer. The entire process of outsourcing is dependent on sound relationships with the outsource provider.

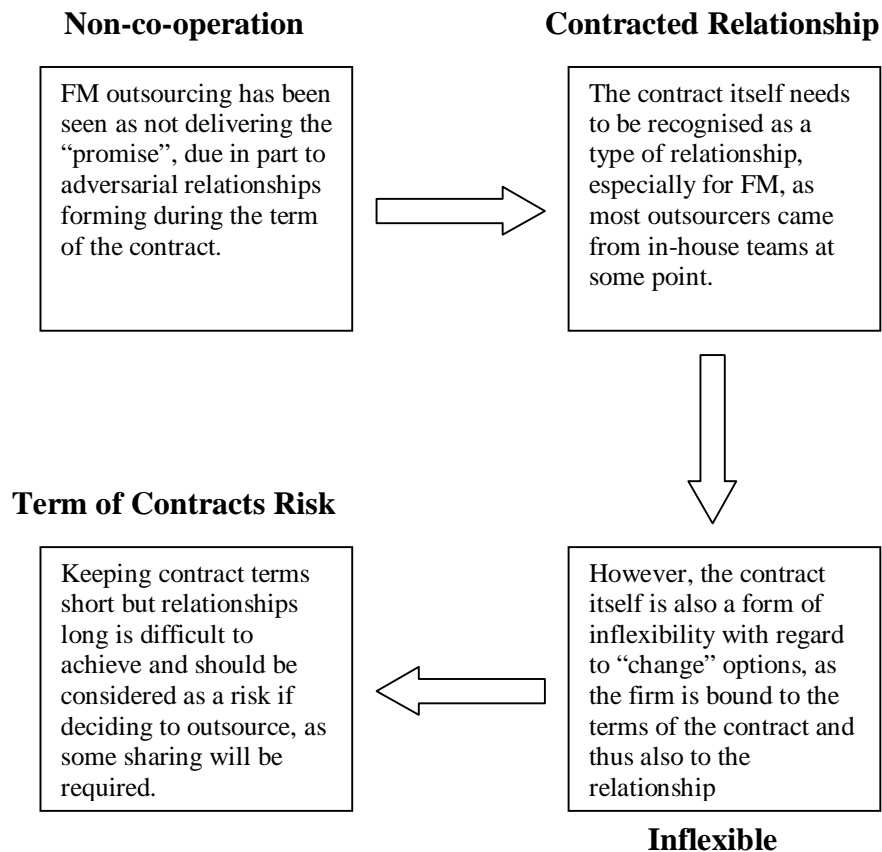
Damiani Migs (1998) thus states that a facilities manager should be mindful that the road to true success in outsourcing is not only saving money but also in building business friendships with the outsourcer. He believes that outsourcers are generally entrepreneurs whom no one gave a chance to succeed while on the inside. So they went outside to make money for themselves instead of for the company and its stockholders.

Essentially, external market forces work only when there are contracts in place, that is, buying and selling transactions. These are relationships in their own right, and as such, a signed contract is not enough to see it fulfilled. It will take a relationship built on trust and reciprocity to succeed, whereby if perceived benefits are not enjoyed by both parties then the relationship will immediately be at risk (Domberger 1998) (refer to Flow Chart 14).

It is almost widely accepted in industry that simply reverting to the contract to solve disputes will only decrease value and increase costs. This has also been attributed to a decrease in flexibility for the client organization. Many consider market transactions (like outsourcing) to be inflexible when change is required for either the scope or scale of production (Domberger 1998).

This has been particularly noted in the public sector. Sheldon (1989) observes that possibly one of the less disputed advantages of using outsource providers is that they can be called in for peak production period, which would otherwise necessitate governments buying the required capital equipment or enlarging workforces for only short usage times. On the other hand, it could also be argued that there can be inflexibility in contractual obligations if unforeseen circumstances arise.

Due to the outsource provider's initial investment (physical or intellectual) at contract conception, associated investment costs will be amortised over the length of the contract. This, combined with the newly created monopoly (due in part to a lack of competition), will cause the provider to have strong negotiating power over the terms and reward for any changes required in the operating environment. This could ultimately reduce the level of flexibility of the client organisation. To have real flexibility in an outsourcing relationship, the contract length for each service area cannot be too long. While the relationship can, and should be, a long one, the length of the contract itself must match the service that it covers (Bendor-Samuel 2000); (Burdon 2004).



**Flow Chart 14 – The Importance Of Outsourcing Relationships**

Therefore, it can be furthered that for the relationship to be workable there must be common interests; a contract alone will not suffice. The basic business philosophies of both parties must be aligned to some degree (Williams 1998). This infers a level of sharing, which in turn infers a level of *risk* for the client organisation

So the answer is to minimise the length of time of an outsource contract rather than diluting the terms of the contract to lessen the outsource dynamics. However even lessening the time of a contract, if too short, may exacerbate poor relationships as opportunism may be employed to compensate. Thus firms should realise that ultimately the relationship will not remain optimum.

### **STAFF KNOWLEDGE, SKILLS AND WORKING CONDITIONS**

This relationship is also at risk in other ways.

As previously discussed, one of the main areas of risk in outsourcing the FM function could be said to exist in the area of staff knowledge transfer. When the organisation decides to outsource the FM function, it will usually transfer or lose some internal staff. The information that these staff members hold will move from within the organisation to outside the organisation in most cases (Domberger 1998).

Here it was argued that there could be a “hollowing-out” of the function as a result, extending to the organisation (depending on how much of the organisation’s functions are outsourced).

Further, the organisation will now be dependent on the outsource provider for qualified staff to run its FM, regardless of any specialisation leverages gained through the transfer. As such, these “external staff” members must be able to adapt to the client organisation, because that is where the function is being performed. This may not always be achievable.

As previously outlined, there is a different dynamic at play for the internal labour market as opposed to the external labour market.

For a specific staffing example, external facilities management staff are usually assigned to project roles for numerous client organisations, usually for only a limited time as dictated to by the terms and length of the outsourcing contract. As such, many of these employees may be transient workforce members, or contingent workers.<sup>43</sup> It could be argued therefore that training and development would be centered on “transferable” skills, rather than job-specific and organisation-specific skills.

Indeed, for new staff there would be a definite learning-curve process for each new client. This could require a greater demand on the individual to not only have traditional existing FM skills with a job/client-specific application to the unique circumstance of the organisation, but also those skills required of a “portfolio” worker. Skills such as the ability to be resilient, flexible, motivated, articulate and available, in order to perform in a multiple workplace environment (Payne 2000).

This is especially so for the FM discipline, in which skills are now required to be more multidisciplinary in nature, and staff are required to be generalist rather than specialist- orientated.

Nutt & McLennan (2000, p. 11) concur by adding:

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<sup>43</sup> Contingent workers are defined by Nelson-Nesvig (1998) as those for whom neither worker nor outsourcing user anticipate full-time regular employment. Work hours, scheduling, equipment training, supervision, and working conditions are not within the span of control of the client organisation.

So the demand led briefing process, target on the client's corporate objectives, the requirements of the first generation of users, contemporary working practices and current market conditions, is becoming obsolete. A less tailored and more generic approach to facility briefing is required.

According to a survey performed by the International Facility Management Association (1997), the range of "important" skills expected to be performed by facilities managers for organisations were financial management, project management, planning/advisory, communication, customer service, and knowledge (which includes technical know-how).

Financial management and project management skills were identified as the most important skill requirements.

This is interesting, as technical know-how was not rated as the most important, thus offering strong support to the argument that FM skills require a multidisciplinary and generalist focus.

Even the staff that remain in-house (if any) will be required to perform a lot of non-technical and non-traditional functions. These include planning and change implementation; as the decision to outsource will not only affect the provider's staff but also the client organisation's staff. Theories, policies, and procedures that worked under one methodology may no longer prove to be valid or effective under outsourcing (Marcella 1995).

This contingent and portfolio worker phenomenon seems not to be confined only to the FM discipline.

According to an article by Osterman (1995, p. 4), "Getting Started – The great American Job Hunt", issues develop as a result of employers (and positions) requiring higher and higher levels of skill, which educational institutions are unable to accommodate, and that these skills are not simply technical in nature.

He adds:

The workplace of the 1990s, with its team oriented approach and quality programs, requires people who are able to work cooperatively with others. They need good interpersonal skills.

Therefore, this could create problems for the client organization, as outsourcing will require "protected" or non-contingent staff (that is, transferred from the client organisation to the service-provider) to acquire these new skills. Alternatively they may require new contingent, portfolio workers (that is, the provider's staff assigned to the



client organisation) to learn organisation-specific skill sets or job-specific idiosyncrasies.

In this situation it could be said that there would be a general demand for highly skilled FM staff, where shortage is a possibility (due to the high demand and steep learning curve involved, as previously mentioned).

This is supported by Nutt & McLennan (2000), who argues that FM expertise is particularly vulnerable to becoming scarce through a short-life span as it is a multidisciplinary and emerging skill set.

Damiani Migs (1998), supports this view, stating that productivity through people will be the difference-maker in the twenty-first century. Employers will continue to expand without hiring additional full-time employees, reaching their objectives by both skill-set training and mind-set training. He believes that reliance on technical competence alone will leave many facilities managers behind to manage things and projects, while those who proactively and progressively seek added training in business skills and people skills will move onto higher management positions in the company.

This move to “higher management positions” based on new skill sets tends to confirm the position that the traditional FM skill set alone (that is, technical ability) is generally not recognised as being the prerequisite skill of the internal business unit. A much broader skill set is required (Alexander 2004). As such it is unlikely that the remaining transferred ex in-house staff will have acquired these new skills at the time when the function is outsourced (Cotts 1998).

As a result of outsourcing the function, it is then unlikely that the FM structure is seen by the client organisation as relevant in this context.

Cotts believes that as outsourcing became more and more prevalent, facility managers seemed to feel that it lessened the need for proper organisation. He also believes that outsourcing is essentially a staffing issue. Further, whether the positions are filled by in-house staff, consultants, or contract staff, it is important to get the organisation “correct” to meet customer needs, claiming “We have spent too little time on this issue”.

According to a study performed on federal agencies in America, the main reasons organisations outsourced were a lack of internal staff (possibly skill set) and a desire to improve services (Marcella 1995).

Given the demands of delivering FM, how does the marketplace interact “inside” a firm to satisfy this delivery, if at all possible? The answer is it is impossible. Once outsourced, a firm can no longer rely on the unique idiosyncratic advantages of the ILM for the function. If this is misunderstood or mistreated, it would be like a square peg in a round hole. The cost would inflate and the value under-realised. Also, should the

function be returned in-house, allowance should be made to re-acquire or re-establish this idiosyncratic advantage.

### ***STAFF PLACEMENT DIFFICULT FOR OUTSOURCE PROVIDERS***

Thus, given these circumstances, where existing in-house FM staff may not be fully trained in broader business skills (which is becoming an ever-increasing need of organisations (Raiford 1999); and if the subsequent transfer of FM staff to an outsource provider occurs, it is unlikely that the outsource provider will be able to adequately satisfy the staffing requirements for the client organisation (as there will be a time delay for training and re-skilling, if this is possible).

Also, the outsource provider's existing staff may be contingent, portfolio workers (as previously mentioned) who may not be able to satisfy the increased diverse internal skill set required of a facilities manager within organizations. That is, the idiosyncratic peculiarities pertaining to the client's organisation (thus setting up the potential for a conflicting situation to arise). This could ultimately leave the client organisation at a disadvantage.

Bragg (1998) would argue that the outsource providers may even be tempted (under these circumstances) to encourage promotion of under-qualified or junior staff in an attempt to get or maintain higher fees, or because there is simply no one else to put forward. They may even pull out key staff not long after a perception of competence has been developed, in order to substitute them with lesser skilled staff (KPMG IMPACT Outsourcing working group 1995).

The firm would have little say about staff skills, especially issues like motivation, efficiency, lateral thinking, etc. It should be remembered that outsourcing is exempt from the employee/employer relationship, including most legislation and HR principles. Ultimate reliance on a contract is the governing factor. An outsource provider will seek to maximise its return. This is the nature of market forces. Considering that labour (staff) is one of the highest costs, it could also become a target to reduce costs by the outsource provider.

### ***COMPARATIVE REDUCTION IN STAFF WORKING CONDITIONS***

When considering this issue, some also believe that it can also be linked to a trend in wage reductions for staff, but where expectations for productivity remain high. Staff conditions, therefore, are said to be reduced for those persons undertaking the outsourcer's service (Nelson-Nesvig 1998).

Under these conditions it could be then argued that the staffing requirements of the client organisation may not be met, as the outsource provider's staff may become less and less motivated to achieve results. Or the quality of the employee will be reduced to the level of the minimal reward paid for effort, which may be below the expectations required under the outsourcing contract.

Therefore, it is safe to say that any savings achieved through outsourcing at the expense of staff conditions are a false economy. All that has taken place is a transfer of wealth (Domberger 1998); (Domberger & Jensen 1997) .

This is an unsustainable situation, and may lead to eventual decrease in value and increase in costs for the client organisation, due to staff motivation issues (Szymanski & Wilkins 1992) (refer to Flow Chart 15).

This view is supported by a study performed by the KPMG IMPACT Outsourcing working group (1995), which recommended that an important part of the client organisation's focus should be on the morale of the supplier's staff. The benefits were said to maintain staff levels (high retention levels) and thus maintain skill set levels.

This implies and supports the argument that motivation levels are affected by the decision to outsource, from which staff retention may be compromised, possibly resulting in a loss of skills. This then may ultimately have an adverse affect on the *quality* of service provided.

Adding to this dynamic, and as previously outlined in this chapter, outsourcing the FM function may ultimately rely on contingent workers to fulfil staffing needs. Some argue that this may result in marginalisation and disadvantages for the "peripheral" professional facilities manager.

McKeown (2001) argues that:

The advent of globalisation and decreasing labour markets ... has wreaked havoc with the concept of what has been thought of as traditional employment. As work becomes increasingly casual, part time and temporary it also results in a workforce that is increasingly vulnerable to marginalisation and disadvantage .... There seems to be clear indications that professionals are as much in need of assistance as any other peripheral worker.

In Australia, this "Labour Transfer" debate, of outsourcing causing erosion of staff conditions, has been well documented. In the government sector, day labour was heavily promoted by the "labour movement" as it claimed that direct employment was preferred over outsourcing to private firms as it "represented a major advance in

working conditions, greater attention to safety procedures, improvement in wages, and more stable and fair employment” (Sheldon 1989, p. 140).

A study performed by Australian Industry Commission (1996) found that outsourcing eventually had a detrimental effect on working conditions, wages, and quality of service. This aspect of outsourcing needs to be constantly addressed, thus leading to an eventual shortage of skilled staff; which may force the client organisation to return to in-house FM.

McIntosh, Shauness & Wettenhall (1997) observe that contracting out to private operators was the dominant mode of employment across a very broad field of public works provision through most of the nineteenth century in Australia. It is likely that the rise of the alternative mode of in-house labour (or day labour) from around the 1890s can be attributed to two main causes: first, widespread dissatisfaction with the quality of the private contractors’ work; and second, the developing influence of the trade union movement and the Labor Party, both of which were deeply committed to striving for better working conditions and more secure employment.

In today’s working environment, especially for the erosion of wages, there is a suggestion that this could be a result of the combination of re-organising work (for example, multiskilled – doing more for less when compared to traditional roles) and the introduction of new technologies (replacing human labour with technology); both of which are an integral part of outsourcing.

This situation may then be synonymous with an increased demand for new skills (as previously outlined) which ultimately results in an increase in competition for competing staff, who, in turn, are accepting lower wages for higher skill sets (Osterman 1995).

Given this, then the pay back on cost savings through outsourcing may be a lot longer than first anticipated, as organisational change that affects staff may lead to an initial increase in costs (Marcella 1995).

This is supported by Bendor-Samuel (2000, p. 107), who states:

Dislocation and business interruption costs are another incentive for long-term relationships. Any significant transfer of a process to a third party will cause employee insecurity and dislocation. As Machiavelli advised, “There is nothing more difficult, nothing more dangerous than to introduce a new order of things”.

One such difficulty would occur in situations wherein there is a direct transfer of staff from the client organisation to the provider. Given that these firms may have

sought to outsource the FM function due to increasing staff numbers (for in-house teams) and decreasing productivity (as outlined previously in this chapter), it is expected that wage rates were integrated on a company basis. This then causing the FM service to be considered a high overhead. As such, the organisation would seek to externalise the function rather than addressing the internal wage reduction issue (Reilly & Tamkin 1996).

However, governments have moved to protect the employee in these situations through various legislation (for example, TUPE<sup>44</sup>), in particular, salary and benefits remaining constant throughout the transfer process. This may effectively prevent the client organisation from realising initial costs reductions (which may have to be absorbed into the outsourcer's overhead structure, to which shedding after the event may be the motivation).

There can be little doubt that the impetus to bring a function back in-house is largely driven by the complaints by outsourcers' staff of poor working conditions or frequent staff replacements (or non replacements). In these conditions a firm's "conscience" may be activated and impelled as time progresses to take over the management of these staff as the conditions worsen. This would cause a double handling cost.

### ***CORE COMPETENCE MAY BE AFFECTED***

Other issues may also emerge from this potential for a shortage of skilled knowledge workers. Some argue that there would be degradation in the organisations' core competencies.

This is said to arise as skilled knowledge workers are considered to provide a true maintainable competitive advantage, due to competitors, inability to reproduce these organisation-specific skills. That is, skilled knowledge workers are considered a core competency (Quinn, Doorley & Paquette 1990); (Incognito 2002), alongside technologies (Hamel & Prahalad 1994).

Competitive advantage is said to be lost, therefore, as a result of losing this core competence through staff loss (whether directly from the organization. or by loss under the outsource provider where staff leave or are reassigned etc.). Core competence leadership (amongst organisations) is said to have a profound impact on the

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<sup>44</sup> The Transfer of Undertakings (Protection of Employment) 1981 (UK), are designed to protect the rights of employees in a transfer situation enabling them to enjoy the same terms and conditions, with continuity of employment, as formerly.

organisation's potential for growth and competitive differentiation (Hamel & Prahalad 1994).

Obviously this would be one of the greatest perceived costs of outsourcing. If this dynamic is substantiated, then firms may be reluctant to outsource at all. However, given that knowledge loss may be difficult to quantify, the true cost of core competence reduction may also be difficult to establish. This is especially given that there could be a time lag in realising this cost. This could mask any cause-and-effect dynamic from being attributable to outsourcing.

### ***FM DELIVERY MAY IMPACT ON THE CORE BUSINESS***

Incognito (2002) further supports this critical aspect of an organisations positioning in the market, and extends this to that of the FM outsource providers. That is, they are now required not only to deliver non-core services but to provide strategic and vital services to the organisation, due in part to globalisation (as previously discussed).

He believes that as the role of the facility professional expanded and the requirements of the enterprise demanded proactive multinational companies as vendors, the entire process of selecting an outsourcing provider become critical to the enterprise. He advises that the facility professional needs to identify providers that can deliver solutions that are based on the needs of the enterprise rather than profit and loss (P&L), which actually thrives on the expansion of the total headcount in the outsourcing contract.

Whether FM is considered core or not is irrelevant under these circumstances. Even as a support role for core activities, FM is a vital service, and especially the "hard count" quality (Reilly & Tamkin 1996) (refer to Figure 5).

Thus a strict core versus non-core approach to the definition of FM functions may be a barrier preventing FM from becoming added value to strategic operations. This is because the organisation itself would consist of varying degrees of core and non-core activities integrated throughout its value chain (Barrett 1995).

This is supported by Nutt & McLennan (2000), who claim that FM performance is best measured by its interactiveness within organisations, especially its core areas.

According to a case study performed on the Greentrees organisation, Langefield-Smith, Stringer & Smith (2000) found that it was very difficult for the company managers (long-term employees) to determine what was and was not core. While none of the managers believed that outsourcing had taken place on core activities within the company, all managers believed that functions critical to their core business operations

to some degree had been outsourced. And as Bendor-Samuel (2000) put *it*, “Non-core does not mean not important. It just means not the most important.”

As such, the FM service-provider (outsourcer) would have to have an appreciation of the core *and* non-core activities of the client organisation to enable support at all levels, and thus must consider its employees delivering the service.

Payne (2000) also adds that the range, nature and complexity of the support that facilities offers to the organisation touches and impacts on all levels (from the top to the bottom) of the organisation’s hierarchy and the services could equally be regarded vital enabling functions. He thus furthers this reasoning to claim that in some instances the FM provision could be viewed as “more core” rather than non-core.

This cost cannot, therefore, be ignored. FM as a supporter of core business could thus be seen as a good indicator for outsourcing trends. That is, one could measure the success of an FM outsourcing contract by its contribution to the health of the firm’s core business. This would be especially so in areas of cost efficiency.

### ***OUTSOURCING FORCING POOR STRATEGIC OUTCOMES***

Thus, considering the “range of services”, there may be a potential for the FM outsourcing provider to operate in areas in which it is not qualified or experienced. This would have quality implications, as it would be entering into “first-time” areas (Johnson 1997).

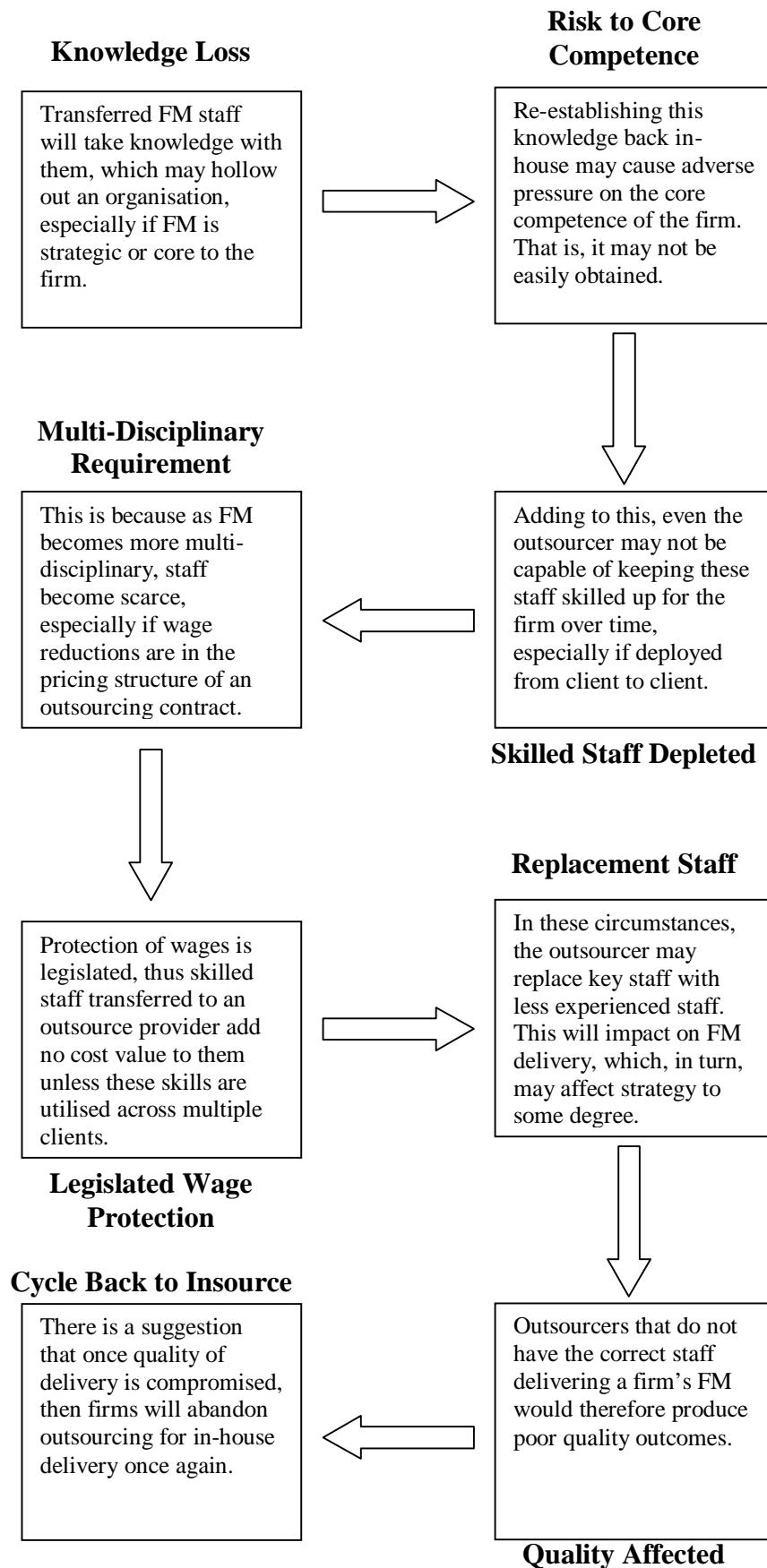
It would be difficult for the client organisation to effectively manage core competencies in these circumstances, as many of them may be embodied in staff – requiring specific measurement of individual skills and specific talents (Hamel & Prahalad 1994). Thus, eventually core competencies may be lost when staff are lost.

Poor-quality FM delivery could therefore be a warning sign to a potential effect on the firm’s core business activities.

### ***CYCLE DRIVEN BY STAFF SHORTAGE AND EMBODIED STAFF SKILLS***

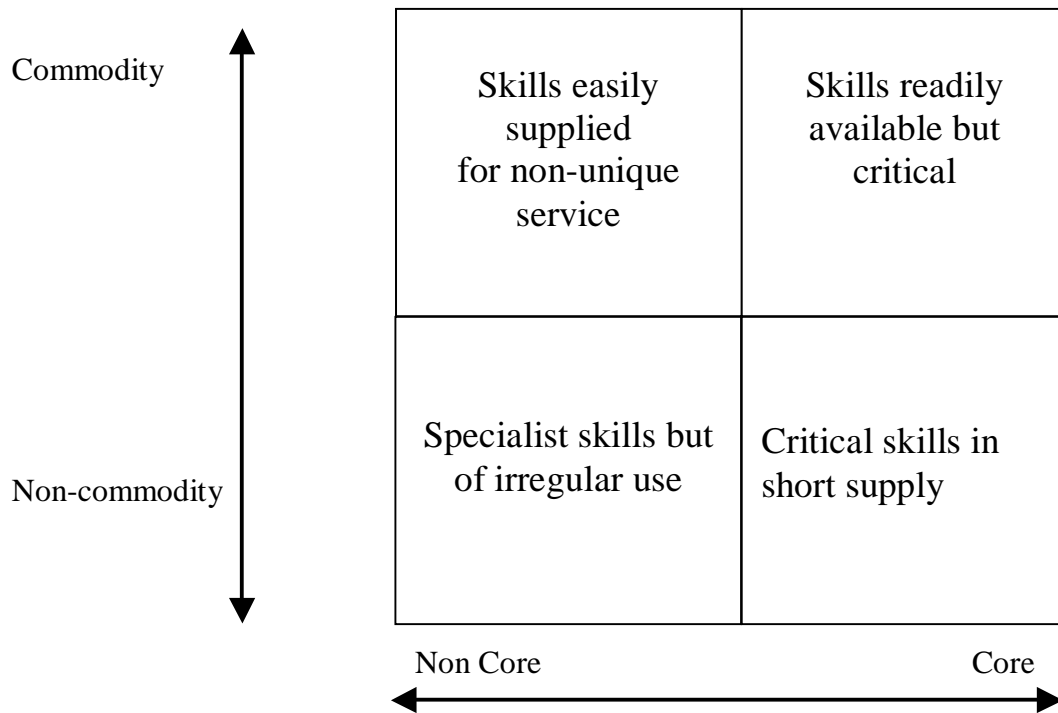
Considering this, it could then be argued that FM, by virtue of its natural tendency for eventual “staff skill” shortage, resulting from outsourcing the function (as outlined above), may indeed then cause the FM function to “become” (that is, be considered) core to the organisation at a certain period in time (when considering that competencies are embodied into these staff). This may then provide impetus for the client organisation to return the function to in-house provision, seeking ownership of the process once again (Reilly & Tamkin 1996) (refer to Figure 5).

**Flow Chart 15 – The Effects Outsourcing Has on Staffing**





If FM delivery was linked to core competence damage, and especially if the function itself was in danger of not performing due to skill shortage, then there would be no better impetus to insource the function immediately. Also, FM's worth to the organisation would be considered extremely important to the firm.



**Figure 5 – Analytical Outsourcing**

### ***MONITORING COSTS***

Thus, considering this possible staffing quality and availability issue, it could now be furthered that under these conditions, the decision to outsource FM may, eventually, increase the need to monitor performance. Thus then eventually increasing the perception of costs and causing a perception of decrease in quality outcomes.

Assuming that the firm has chosen to outsource the FM function, and that there is difficulty in sustaining an acceptable level of skilled staff, it is feasible to assume that there would be a need by the client organisation to ensure that correct monitoring of the service-provider is in place to ensure that the service is indeed supplied as per the contract (KPMG IMPACT Outsourcing working group 1995).

According to a study undertaken by the International Facility Management Association (1999), the main ways in which firms achieved this monitoring was through:

1. Personal observation
2. SLA adherence
3. Regular continuous inspection
4. Hiring specialist consultants

Bendor-Samuel (2000), in his book *Turning Lead into Gold*, states that it is imperative for the client organisation to adequately monitor supplier performance, as it is only what you inspect, that you will ultimately get. He states that without monitoring, the supplier will dictate and eventually steer the relationship to suit itself.

He thus claims that there are three main reasons why firms need to monitor supplier performance (as opposed to mere trust):

- a. Suppliers have their own profit and revenue imperatives. When inadequate metrics exist, the temptation for the supplier is to attempt to achieve increased profitability by reducing the quality of the service.
- b. The supplier is part of an integrated supply chain; it would be rare and extremely surprising if a supplier that is allowed to set its own parameters would bring alignment with a client organisation's objectives.
- c. The supplier's need for profit growth may force it to try to move components of the process outside the scope of the services so that it can then charge extra for them and satisfy its profit needs (that is, opportunism).

Obviously this infers an increase in management time (FMlink 2002e) to perform the adequate amount of monitoring necessary to prevent these issues from evolving (Raiford 1999), if this is possible.

Additionally, Raiford (1999) argues that there is a need for a different type of management skill set for this type of management monitoring (as opposed to monitoring hierarchical in-house staff management). Here it is argued that further management training may be required (McIntosh, Shauness & Wettenhall 1997).

According to a study undertaken by Ganley et al. (1988), in order to derive sustained benefits from outsourcing a previously performed in-house function, it was necessary to provide complex supervision both during and after tender selection. They claim that this impacts on managerial expertise and administrative reforms – thus without this skill, identified savings from outsourcing were put at risk.

It is also accepted that this monitoring, therefore, leads to increased costs for the client organisation. A study undertaken by the UK's Audit Commission found the costs

associated with monitoring for building maintenance came to about 9% of the total cost (Domberger, Fiebig & Fernandez 1999), a little-recognised statistic.

The question that needs to be addressed here is whether or not these costs existed in-house prior to outsourcing? Support for the affirmative is extremely limited. The majority of literature supports the argument that in-house production is less costly to monitor, due to the natural integration principles at play inside a firm, that is, the "Principal Agent Theory" which is essentially created through information symmetries, making it easier and less costly to monitor in-house (Domberger, Fiebig & Fernandez 1999).

It is argued here that there are complexities associated with an introduction of market forces (that is, through the separation of purchaser and provider) created by outsourcing, and that management principles have to be altered in order to monitor quality outcomes (Dean 2000), thus increasing monitoring costs.

This is especially so when the tasks outsourced are considered a high risk should the contract fail. In this situation, monitoring costs would be even higher (Domberger & Hall 1994).

Furthermore, it is even argued that this need to increase monitoring causes a level of bureaucracy in itself.

Reilly & Tamkin (1996) comment on the time spent monitoring performance:

To avoid these difficulties, careful monitoring of the contractors performance against the contract is necessary. Some have felt that this has spawned a new bureaucracy and tied up managerial time.

Thus failure to adequately monitor providers may lead to cost increases, however, too much monitoring will also lead to increased costs, leading to duplications (Oates 1998). In this climate, quality may also eventually be affected, as it will be impossible to monitor everything all the time (as previously stated).

Katsanis (2003) adds that disadvantages may arise from issues of quality control in an environment with multiple partners, temporary unavailability of expertise as the resources may be spread thin, and possible problems arising from infringement and exploitation of proprietary knowledge.

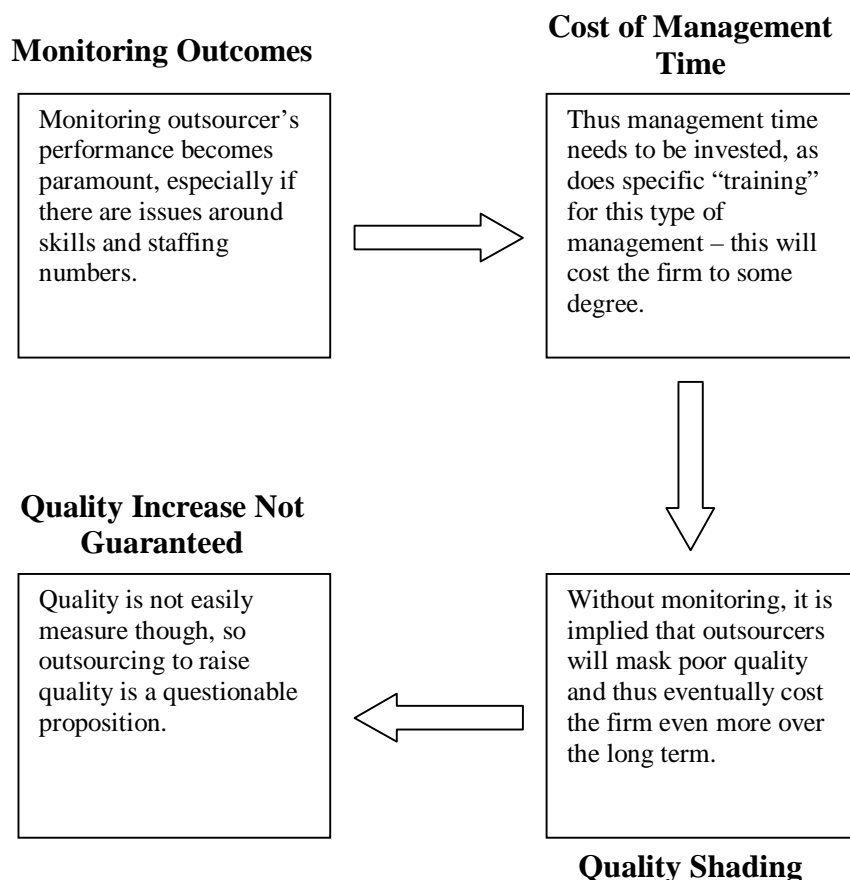
So firms that underestimate this monitoring cost or do not monitor adequately and subsequently suffer quality loss may be tempted to manage the function on behalf of the outsource provider. This would duplicate costs, but, more importantly, would dilute the outsourcing dynamic and its potential benefits. Firms should anticipate these monitoring costs up-front, and allow the outsourcer to "get on with it".

## **QUALITY DEGRADATION**

In these situations, without adequate monitoring, the outsourcing company may be tempted to cut corners and reduce quality outcomes. In a competitive tendering situation, this may already be a given in the minds of the outsource company, simply to make the contract profitable. This is known as “Quality Shading” (refer to Flow Chart 16).

There is evidence to support that this has been evident since the nineteenth century, when the public works system turned to day labour rather than contract companies, due to poor-quality outcomes (McIntosh, Shauness & Wettenhall 1997).

Dean (2000) also add that managing service quality becomes more difficult in outsourcing because, whether viewed from a private- or public-sector position, the separation of purchaser and provider means that the client organisation has the responsibility for managing the quality outcomes delivered by an intermediary.



**Flow Chart 16 – Monitoring Costs and Quality – Ramifications**

It is fair to say, however, that this measurement of quality is a difficult task when comparing previous in-house management to outsourcing. There are very few studies performed on measuring FM quality during procurement strategy change-overs (Dean 2000); (Domberger, Fiebig & Fernandez 1999). This has been known as ex-ante non-contractility of quality, whereby quality characteristics of a service are both difficult to identify and to specify prior to service delivery (Domberger & Jensen 1997).

One aspect which is not disputed, however, is the need for increased monitoring under these considerations. Thus, quality reduction is a result of a poor management environment (which may arise out of the need to monitor excessively, that is, bureaucracy), and thus, to a lesser extent, quality shading.

Domberger, Fiebig & Fernandez (1999) state that the quality of service assessed by the client organisation is affected to a greater degree by the nature of the client and its management style than by economic factors such as competition.

Considering this, it can now be furthered that outsourcing the FM function in itself cannot be seen as a way to increase quality in isolation.

According to a study by Benson & Ieronimo (1996), outsourcing maintenance functions did nothing to improve quality, and should not be used as a tool for simply increasing the quality of maintenance. This supports the previous conclusion that any quality reductions are a result of internal management issues surrounding the increased pressures on management monitoring caused by outsourcing the function from in-house.

However it is doubtful that firms will excessively monitor an outsource provider to the required level to ensure quality is maintained. It would simply be cost-prohibitive, thus either perceived or real quality reductions may occur (Marja Rasila & Florian Gersberg 2007). Firms may simply have to factor this dynamic in prior to outsourcing.

#### **4.4 CONCLUSIONS**

It can be concluded that there are both cost and value implications for both in-house and outsourced facilities management delivery at certain stages and under certain conditions in the process of FM procurement and delivery.

It is assumed that the perceived value and cost propositions outlined in the preceeding chapters are, in the main, that which affect organizations the most from the chosen FM procurement strategy. This being the case, then these delivery methods would either enhance or detract from the perceived overall worth of the FM function to organisations to some extent.

Certainly the variables outlined seem to support the hypothesis that regardless of the initial method, there could be a natural tendency for perceived costs to exceed perceived value over time.

Further research on the relationships between these influencing variables may also provide the conditions under which cycles between the two main forms of FM procurement and delivery may develop.

Thus, in the subsequent chapters, relevant data will be gathered and analysed in order to:

1. ascertain if cycles between the two main forms of FM procurement and delivery methods exist .
2. ascertain and determine the degree of association between the emergent dependent<sup>45</sup> and independent<sup>46</sup> variables listed from the literature review (that is, cost, value, influencing variables for both outsourcing and in-house delivery of FM)
3. identify and quantify the time spans involved to establish a relationship with perceived cost and value and determine the rate of degradation over time.

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<sup>45</sup> A dependent variable refers to the resultant costs and/or values produced by an independent variable.

<sup>46</sup> An independent variable or influencing variable is a cost and or value driver.

## CHAPTER FIVE

### METHODOLOGY

#### STRENGTHS / LIMITATIONS / SIGNIFICANCE

##### 5.1 PURPOSE AND APPROACH

The purpose of this chapter is to discuss the chosen methodology, and how it relates to the findings from the preceeding literature review. In particular, a discussion of the strengths and weaknesses and the benefits and limitations for each of the methods adopted.

In order to ascertain the extent of cycles; to determine the degree of association between the emergent dependent and independent variables; and to identify and quantify the time spans involved; the following methods have been adopted:

##### ***INTERNAL DATA***

**Method:** case study

**Sample:** one large<sup>47</sup> organisation

**Target:** comprehensive and diverse inputs from within the case-study organisation.

**Data Analysis:** descriptive single-case explanatory–exploratory study using multiperspectival analysis<sup>48</sup>, using both contemporary and historical information.

##### ***EXTERNAL DATA***

**Method:** questionnaire survey

**Sample:** 148 organisations

**Target:** manager responsible for the FM delivery (Internal employee)

**Data Analysis:** multiple correlation analysis using the rank (Spearman) method, polynomial regression analysis, and t-test averaging analysis.

(Refer to Appendix 2 for detailed results.)

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<sup>47</sup> “Large” is defined in subsequent chapters in this thesis with reference given to the Australian Bureau of Statistics’ definition.

<sup>48</sup> Multi-perspectival analysis, or triangulation, utilises and compares relevant data from at least three different sources.

## 5.2 CASE STUDY

A holistic case study of the David Jones organisation examined a multiple-site, single organisation with theoretical sampling – this aimed to replicate or extend theory by filling the conceptual categories in the hypothesis through the use of archives, interviews, and observations. A multiple qualitative (thick description) and quantitative data collection was completed – to gain a synergistic view of the evidence and to strengthen the grounding of the theory by triangulation of evidence (Feagin, Sjöberg & Orum 1991).

In applying a case-study technique to the research, it was intended to explain the complex causal links in real-life interventions, describing them in a real-life context. In this regard, triangulation techniques were employed in order to confirm whether the data remains the same in different contexts.

A micro-examination within an organisation of both FM outsourcing and insourcing should provide further insights into the dynamics surrounding the preceding variables identified.

However, when attempting to understand why the perceived value and cost fluctuate for FM procurement over time, a case study technique has both limitations and benefits.

For example, as the literature suggested that the main reasons why firms adopt an in-house option were due mainly to the pursuit of cost and opportunism reductions and flexibility and control increases, a case study technique would provide the context in which these pursuits are or are not achieved. The literature also suggested that these pursuits may be easier obtained by inhouse teams when FM was considered strategic; being delivered in uncertain conditions for large centralized organizations, for owned specific assets.

Accepting this, a case study would further reveal the extent to which human intervention and bias influenced the degree of association between the two sets of variables if any. This allows for a critical realist ontological standpoint (Archer, Bhaskar, Collier, Lawson, & Norrie, 1998). The same methodology would apply to the outsource dynamics presented in the literature review as well.

Thus a benefit of the case study technique is in the contextualisation of the identified variables. This may point toward alternate outcomes, other than identified in the literature review, based on different circumstances as predicted through human intervention.

However, there are also other limitations to consider. Micro examination of a single organization, in this case a retail organization, may not be considered typical



when considering the large range of industry types present throughout society today (Wofford 1995b).

Additionally, the retail sector has limited research performed on the effects of FM procurement strategies from which to compare against. There is, however, an observation that the retail sector has been slower to adopt outsourcing as a preferred FM delivery method than some other industry sectors (Collins 1996).

Also, the qualitative nature of the case study technique (I.e interviews, historical records) could be subject to individual and corporate bias from the respondents. As such the case study findings alone can only offer guidance for future analysis and interpretation of context-specific circumstances and events in other organizational settings.

Further, to address in part the issue of bias, the research methods used, including the case study, excluded the “providers” (outsourcer’s) viewpoint. As the hypothesis is attempting to ascertain the “perceived” cost and value propositions over time (as it is seen by a non FM service organisation, whether insourced or outsourced), the provider’s views are considered irrelevant. This is not to say they are not important, only that they add no value to the findings as they are servers in a client/server relationship. Thus it was concluded that they can not influence the first principles identified in the literature review. This was because the literature review findings focus on the client’s operating environment as a key driver of both cost and value, and not the providers operating environment.

However, understanding how organization perceive and influence their FM delivery as it relates to cost and value over time (that is, the aim of this thesis) would certainly facilitate any further research that was undertaken with similar methodology - if it were centered on the perceptions of the outsource providers of FM.

Thus when considering the critical realist standpoint adopted, the findings of this thesis could then be used for further testing to ascertain if they remain constant or not under different settings – especially if it focused on the provider side.

### **5.3 QUESTIONNAIRE SURVEY**

Therefor to further test and support these findings from the case study, being a study on a single entity with multiple sites, further external data was sought from multiple entities.

To further triangulate and test this data, external data was obtained using questionnaire methods, using statistical analysis such as averages (to quantify and

compare values), t-testing (to identify significant differences), multiple correlation analysis (using the ranking or Spearman method, to identify relationships), and polynomial regression analysis (to identify trends).

Using the case study as a reference base, the questionnaire data becomes the snapshot of multiple organisations with which to compare. Certainly the effects of time can only be discussed further if more than one source of data existed, A questionnaire was considered the most appropriate method of sourcing data to support the case study for the following reasons:

1. Access to a large sample of numerous organisations through the Facility Management Association of Australia (FMA). Research on a specialised, professional subject such as FM requires a survey of organisations whose managers are knowledgeable in FM, thus the FMA population was suitable.
2. Appropriate for the target population (that is, all responsible for FM)
3. Ease of access to multiple industry sectors (thirteen in total)
4. No other source available that easily satisfies the above.

### ***THE PURPOSE OF THE QUESTIONNAIRE***

The purpose of the questionnaire can be grouped into five distinct purposes, being:

#### **1. Quantify the typical extent of outsourcing within organisations**

In determining the source and extent of perceived value and cost associated with FM procurement and delivery, those functions considered as part of the FM function were further categorised in relation to the extent of their “process” ownership. This was to determine the extent to which “each” function was managed, controlled, and “owned” by an external source, as opposed to an internal source. For reasons previously examined, it is important to make this distinction, as it defines the extent of outsourcing.

#### **2. Quantify the extent of multidisciplinary categories considered part of FM within organisations**

Given that FM has no universally accepted definition, yet an imperative exists to measure its multidisciplinary nature as a basis for measuring its effects on staffing (as previously discussed), the function must be further broken down and

grouped by its number of categories. This basket can then be examined for multidisciplinary attributes.

**3. Quantify the independent<sup>46</sup> and dependent<sup>45</sup> variables with regard to both the perceived value<sup>6</sup> and cost<sup>7</sup> and their implications for procurement and delivery of FM.**

This will reinforce those criteria previously identified through the literature review and analysed through the case study, that were conducive with perceived cost and value maximisation and minimisation for both forms of FM Procurement and delivery by firms.

**4. Quantify the lifecycles of the two main forms of FM procurement and delivery.**

The suggested transient<sup>49</sup> nature of facility management procurement and delivery and the operating environment in which they function, suggest that procurement choices may not be considered permanent solutions in delivering facility management. This warrants further investigation.

**5. Establish the time implications for value and costs when comparing strategies**

Given that the identified perceived costs and values associated with each FM delivery method may not remain constant, and that a limited lifecycle may exist, quantification of the perceived cost and value over time also warrants further investigation.

Basically, in order to capture the perceived overall effects of outsourcing and insourcing on firms' value and cost over time to an organisation, only those variables identified in the literature review have been targeted. These are considered to be the main cost and value drivers, and are not meant to be further divided into their sum of parts through a micro-analysis of their detail. This is considered outside the scope of this thesis, and thus, are to be considered supporting to the case study findings, being from first principles only.

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<sup>49</sup> The term "transient" in this context refers to the evidence of cycles between insourced and outsourced procurement and delivery of Facility Management, including the operating environment they function in, as emerged in the literature review and case study.

## **QUESTIONNAIRE LIMITATIONS**

However, as was in the case study, the anticipated limitations of utilising a questionnaire for this population are listed as:

**1. Financial information not accessible (for the purposes of a research questionnaire) to the respondent.**

In anticipation of this limitation, the questionnaire addresses perceived costs in terms of the variables discussed in the subsequent chapters, emulating the case-study interview questions. As such, there is no specific reference to financial information.

**2. Historical information not accessible to the respondent**

In order to sufficiently test the hypothesis, there is a requirement to analyse the implication of time on an organisation's FM delivery. As such certain historical information is needed to allow adequate data analysis. To minimise data "gaps" from the returned data set, the majority of the questionnaire is designed to take a "snapshot" approach. That is it specifically addresses the current circumstances for the respondent, however, based on previous circumstances where known.

**3. Subjective responses influenced by the position held within the organisation by the respondent (that is, tunnel focus)**

When attempting to address "organisation-wide" implications through a questionnaire, there is a risk that the respondent may be influenced by her/his "world view", based on her or his position within the organisation. This may not give a true representation for the purposes of the research. Thus the questionnaire was specifically designed and targeted to similar middle-management positions within an organisation. The purpose of which to limit response variances based on disparate world views associated with varying levels of seniority. This was achieved in the chosen population sample being from a single professional association – the Facility Management Association of Australia, as opposed to differing associations. Most respondents hold similar seniority positions.

## **5.4 T-TESTING & AVERAGES**

The data from the Questionnaire was then converted using the following formula:

$$a = ((b/c)*100)-100$$

where:

a = percentage difference

b = lowest mean comparative scores from questionnaire

c = highest mean comparative score from questionnaire

(Refer Appendix 2)

By using the t-test<sup>50</sup> method, significant differences between the various forms of FM procurement (that is 100% to 0% outsourced) can be compared and discussed. Therefore by comparing the flagged significant variances results from the t-test for each FM procurement method, an indication of significant differences can be established. These differences can then be further discussed to ascertain whether the results point towards supporting the findings of the literature review or not.

Subject to the limitations previously mentioned, this method allows for separation of the rank data into the most obvious possible groupings as they apply to the literature review findings, if at all. This then can be used to easily reference and compare to the case study findings.

Also, the Questionnaire data was then further converted using the following formula:

$$(a/b)*100 = c$$

where:

a = average score from questionnaire (from 1 to 5)

b = maximum possible score (5)

c = average percentage score achieved,

(Refer Appendix 2)

By doing this, it can be determined, for each FM procurement method, just how much perceived value and how much perceived cost may have been realised by the organisations by using averages (subject to the limitations mentioned). In doing so further discussions surrounding which drivers of cost and value are applicable in either insourced or outsourced methods can be made, further supporting the literature review or not.

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<sup>50</sup> The t-test procedure compares means and flags significant variances. (The p-level reported with a t-test represents the probability of error involved in accepting a research hypothesis about the existence of a difference. Technically speaking, this is the probability of error associated with rejecting the hypothesis of no difference between the two categories of observations (corresponding to the groups) in the population when, in fact, the hypothesis is true.)

Again, when referenced and compared with the case study findings, further insight into what context specific circumstances are applicable could be discussed. This would hold enormous value for building on the discovery of a “recipe”<sup>51</sup> for when to outsource or insource under certain context specific conditions.

Also, the Questionnaire data was further converted using the following formula:

$$(a/b)*c = d$$

where:

a = averaged combined percentage dependent variable score

b = averaged combined percentage independent variable score

c = set maximum independent variable score

d = achievable theoretical maximum score based on ratio,

(Refer Appendix 2)

In doing this, we can further discuss just how much perceived value would have been achieved based on the current alignment of the dependent variables with the independent variables for each strategy. This is assuming a theorized “maximum” independent variable alignment (that is, a ratio adjusted score based on the presupposition that the organisation’s operating environment is fully aligned to its current FM procurement and delivery method).

Again, when referenced and compared with the case study findings, furtherer insights into the most likely outcomes may be drawn and further discussed.

## 5.5 CORRELATION ANALYSIS

Further, by using multiple Spearman’s rho correlation analysis on the questionnaire data, we can further determine the relationship between the variables, if any.

The bivariate correlations procedure computes Spearman’s rho<sup>52</sup> with significance levels to 0.05–0.01 for both one and two-tailed results, using the following formula:

$$\text{Spearman's } \rho = \frac{1 - 6D^2}{n(n^2 - 1)}$$

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<sup>51</sup> “Recipe” refers to the identified unique set of operating conditions that drive value for either insourcing or outsourcing, as defined previously in this thesis. Thus this recipe also causes costs as identified in this thesis previously, if incorrectly applied to the wrong procurement and delivery method.

<sup>52</sup> Spearman’s rho is a measure of association between rank orders.

Where  $D$  = difference between rank of  $x$  and rank of  $y$ .  $r_x - r_y$ .

Given the findings of the literature review, and conclusions drawn, it is expected that there would be correlations between the independent and dependent variables.

As there were found to be multiple variables to examine, multiple Spearman's rho correlationis was considered the most appropriate for the data set.

The benefit of using a questionnaire with this method of analysis is in its ability to identify links between the questions. Should correlations exist, then this gives greater confidence of reduced individual bias from response, especially should the correlations confirm the findings from the literature review.

## **5.6 POLYNOMIAL REGRESSION ANALYSIS - TIME SERIES**

As previously discussed, using the case study as a reference base, the questionnaire data becomes the snapshot of multiple organisations with which to compare. Certainly the effects of time can only be examined with more than one source of data. This is especially so when considering the differing time periods for each FM method adopted.

Having discussed that the hypothesis for perceived value and cost previously presented may exist, and in particular their cause-and-effect associations, we can now analyse and discuss any time implications for these costs and value variables.

Thus, the Questionnaire data was further converted using the following formula:

$$a = b \cdot 100 / c,$$

Where:

$a$  = value and/or cost result expressed as a percentage

$b$  = score of actual dependent variable (that is, cost or value variable) given from respondents via questionnaire

$c$  = maximum possible score of dependent variable (that is, cost or value variable) achievable via questionnaire ranking,

(Refer Appendix 2)

In doing so we can quantify the perceived overall cost or value percentage for each FM delivery method, and then reference the corresponding time period associated with this cost or value percentage for each FM delivery method as given from the questionnaire.

By using a one way ANOVA Contrast analysis technique, namely sixth degree polynomial regression analysis, we can then see whether a trend is prevalent from the results.

Polynomial calculates the least squares fit through points by using the following equation:

$$y = b + c_1x + c_2x^2 + c_3x^3 + \dots + c_6x^6$$

where  $b$  and  $c_1 \dots c_6$  are constants

This analysis technique is considered the most relevant, as it partitions the between-groups sums of squares into trend components. This allows us to test for a trend of the dependent and independent variables across the various time series levels, which become a factored variable.

By graphing these results we can then determine the associated time trends, if any.<sup>53</sup> Using questionnaire data alone would not give exact value and cost measurements when graphing their fluctuating levels, however, using series regression analysis, an indication of trends may be established.

This is especially important given that the hypothesised fluctuations in perceived cost and value were best analysed using multivariate analysis (as previously mentioned) as this method returned the best  $R^2$  values (Refer to Chapter Seven). This indicates that a cyclical nature to the trend lines exists. Using Bivariate analysis alone would not produce this trend.

Once again, questionnaire data is particularly beneficial when using this method as it produces a snap shot of time across multiple organisations. In doing so any trends identified could be considered context independent (as each organisation is surveyed independent from each other). This then can be referenced and compared against the case study findings for elaboration and discussion.

## 5.7 FURTHER METHODOLOGY DISCUSSION

Having addressed the limitations in the design of the questionnaire as much as possible, the case study will be used as a reference to ensure results are further

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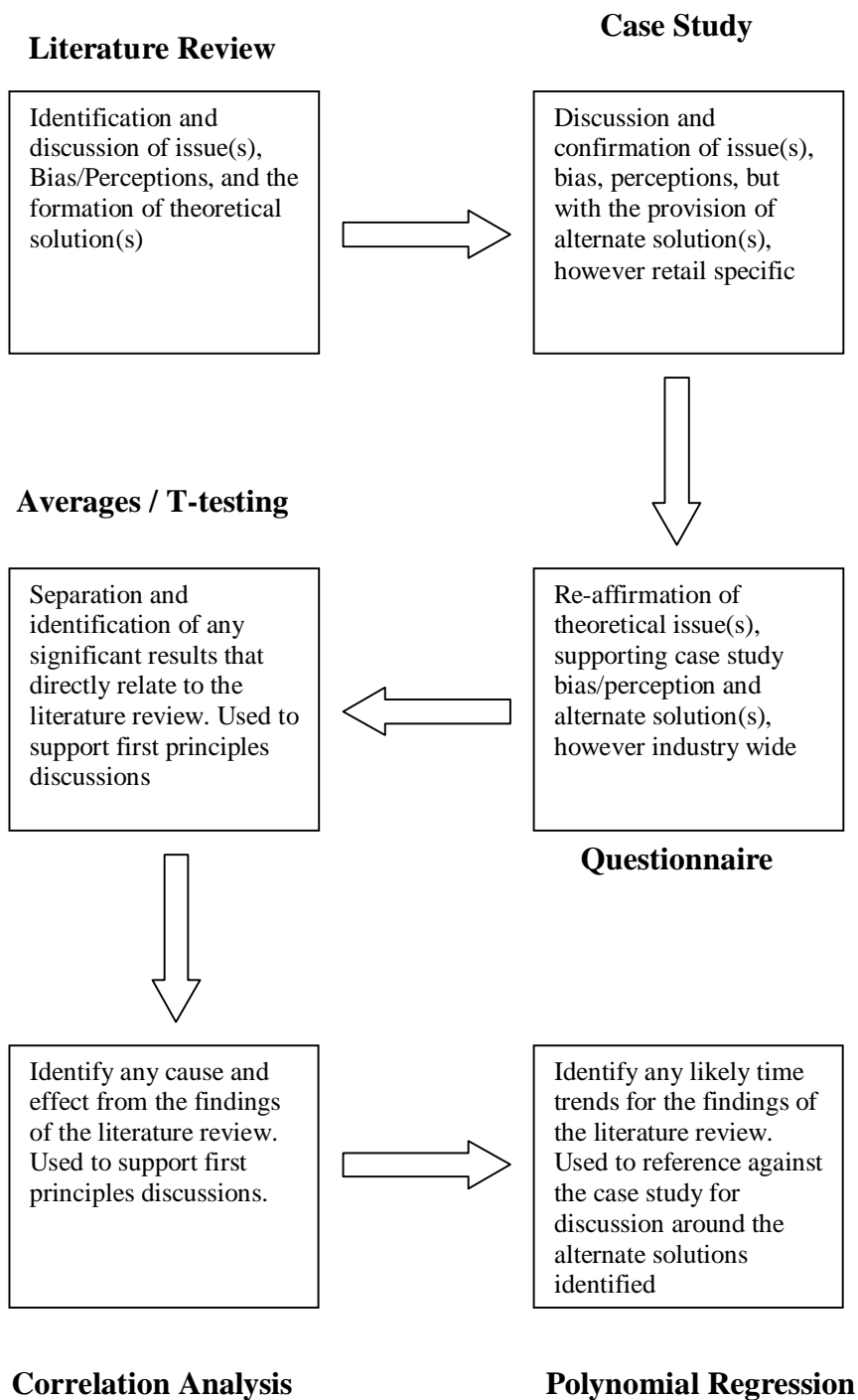
<sup>53</sup> It is not intended to use polynomial regression analysis to obtain exact quantifications of cost and value amounts. It has been chosen to analyse for trends in minimum and maximum values for cost and value over the time series as presented in the data. This allows each firm to produce a “snapshot” of its value and cost. When combined with all firms’ data, it allows for trend analysis.



supported where needed. As mentioned previously, questionnaire data alone would not, in itself, guarantee that the findings are replicable.

For example, the literature review identified that organisations and individuals within them are subject to bias when faced with decision making surrounding FM procurement. Issues such as identifying whether FM is strategic to the firm, or whether FM is considered core to the firm. Even identifying what truly is considered to be outsourced. As such it is expected that the results of any research would also include this bias in the results.

In order to come to conclusions, either supporting or not supporting the hypothesis, the various multiple methods discussed in this chapter were adopted and designed to allow for discussions around alternate solutions should this identified bias be able to be eliminated in real life contexts (refer flow chart 17).



**Flow Chart 17 – Research Methodology**

## **CHAPTER SIX**

### **CASE STUDY**

#### **DAVID JONES LIMITED**

##### **6.1 PURPOSE AND APPROACH**

Having now established a conceptual framework for the research, the following chapter is a descriptive single-case explanatory–exploratory case study, critically appraising the David Jones organisation to ascertain the level of relevance the variables have pertaining to the company.

David Jones is considered suitable for researching FM procurement and delivery, as both the main forms of FM procurement have been adopted by the organisation at some point in time. Defining data is available, both historical and contemporary (subject to the limitations discussed previously) (Luciani 2005a); (Jebb, Holland & Dimasi 2002).

A series of case-study questions will be applied, with the results analysed using multiperspectival analysis.

A micro-examination within an organisation of both outsourcing and insourcing should provide further insight into the preceding variables. Given that the literature remained fairly independent on specifics such as industry type, type of outsourcer, and larger economic indicators, generalisations may be drawn, however retail specific.

##### **6.2 DAVID JONES – HISTORICAL OVERVIEW**

David Jones is a major Australian department store retailer.

Department stores account for about 10.3% of total retail sales in Australia of about A\$108 Billion.

In terms of sales of goods and services, the retail industry is the third-largest industry in Australia, behind manufacturing and wholesale trade. The retail industry is cyclical in nature and is characterised by a major peak in activity at Christmas and the subsequent sale periods.

According to a study performed by Jebb, Holland & Dimasi (2002), the shopping-centre industry (of which department stores are a part) accounted for 40.4% of retail sales, 38.5% of retail employment, and 43.7% of retail sector Gross Domestic Product.

This represented 5.5% of Australian employment and 2.3% of Australian Gross Domestic Product.

The David Jones name is widely recognised by Australians and is synonymous with quality products and exemplary customer service.

David Jones is established in the higher value, higher margins end of the department store market and is perceived to offer higher quality products and better service than its major competitors. Its customers are predominantly middle-to upper-income earners in the 25- to 65-year age group.

The first store was opened in George St Sydney, opposite the general post office, by Mr David Jones in 1838 (A Welsh-born retailer trained in London).

The first goods sold were buckskins, gingham, cashmeres, waistcoatings, silks, cotton ticks, diaper rugs and other merchandise imported from England.

In 1848 David Jones extended its premises to accommodate the growth of the business – attributed to the 40,000 or so strong population of Sydney and visitors from regional areas.

By 1890, additional premises were leased adjacent to the first site, as the product range had expanded. On Christmas Day 1906, David Jones announced its intentions to become a public company. The announcement also included a statement that the product range was to be extended further by *“not only ... the best and most exclusive goods, but to carry a stock that embraces the everyday wants of mankind at large in drapery, clothing and furniture”*.

In 1914, David Jones purchased part of the land in Market St Sydney where it was to build its current city store. In 1920, more land was purchased in Elizabeth St Sydney, which a new flagship store was then opened to the public in 1927. By 1938, a new store in Market St was opened to celebrate 100 years of trading.

From 1947 to 1954 David Jones played the principal role in the establishment of Paris-style fashion parades in Sydney, culminating in a visit by Queen Elizabeth II in 1954, a banquet being held in her honour at the Elizabeth St premises.

For the period of 1954 to 1979 David Jones expanded its geographical spread opening new stores in New South Wales, Queensland and South Australia. In 1980, the company Adsteam acquired a considerable interest in David Jones Limited (DJL). At this time DJL also embarked on a series of other acquisitions, one of which was a company called Buckley & Nunn which was a department store in Melbourne.

Other acquisition included a department store business called John Martin, operating from Adelaide, which was the largest department store chain of the time, and Aherns in Western Australia.

When considering other historical accounts of department store development throughout history, David Jones could be considered typical in its evolution (Clausen 1984).

Currently David Jones operates in 37 stores throughout Australia (except for the Northern Territory and Tasmania), and has three warehouses/distribution centres. There are also head office leases.

The development of the department store in Australia was intrinsically linked with infrastructure (store) expansion, with FM performed in-house. FM as an industry was non-existent when David Jones evolved, until around the 1980s. Outsourcing was also little recognised in the FM space, thus DJs developed its own in-house FM techniques.

## **6.3 DAVID JONES – OPERATIONS**

### **6.3.1 OPERATING ENVIRONMENT**

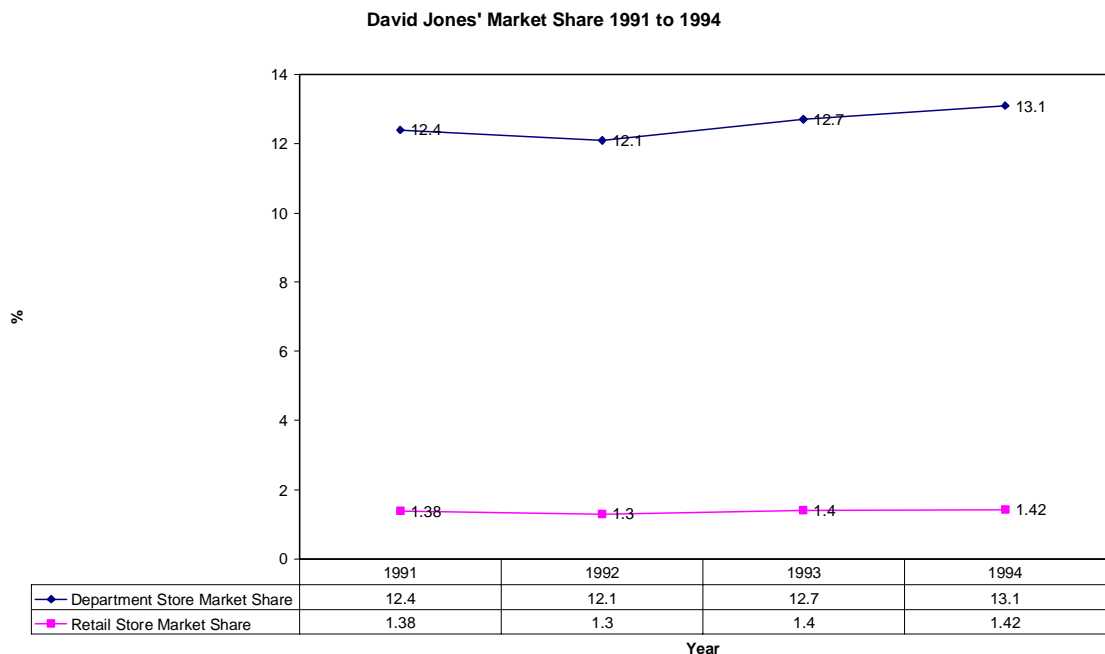
According to the internal study performed by Jebb, Holland & Dimasi (2002), the company was the second-largest department store in Australia, accounting for about 13% of the turnover of all department stores (including discount stores) in 1993–94 (refer to Figure 6).

David Jones' major competitors are other full range department stores, particularly traditional department stores which target a similar market to David Jones. The largest of these chains is Coles Myer Limited's Myer and Grace Bros stores which compete in all of the major cities and most suburban and country locations where David Jones has a store.

According to the internal memorandum, David Jones also competes with:

- speciality clothing retailers increase such as women's apparel, menswear and jeans
- discount department stores and speciality stores in areas such as white goods and electrical
- specialist retailers of jewellery and watches, such as Goldmark and Angus & Coote
- footwear retailers such as Footlocker, Mathers, Fay's and Ezywalking
- specialist handbag, wallet and luggage goods retailers.

However, at a time when the department store market share of the retail sector was on the rise, both outsourcing and FM were available to David Jones (that is, from 1991 to 1994).



**Figure 6 – David Jones' Department and Retail Store Market Share 1991 to 1994**

### ***THE DAVID JONES COMPETITIVE ENVIRONMENT***

It would seem that competition in this industry sector is currently very high. This is reflected in the Annual Report for David Jones (2003b, p. 5), which states:

*Despite a slow down in consumer spending and a very competitive sales environment involving heavy discounting by market participants, sales for the core department store business in FY03 were \$1.675 Billion compared to \$1.631 billion in FY02 ... however the last quarter experienced a slow down reflecting an unseasonably warm winter, increased discounting activity by our competitors ... We anticipate this slow down in consumer spending and competitive discounting pressure will continue in FY04 ... We recognise that we operate in a cyclical and competitive sector”.*

Competition in this retail market is limited in geographical terms for David Jones, in that David Jones does not compete on the global market directly. That is, it does not

put out its services to customers outside Australia. However, globalisation plays a role for David Jones as far as the purchase of products is concerned. In this respect, the company seeks goods from overseas merchants for sale back in Australia. This has been seen in the history of David Jones, as previously described in this chapter. Competitors of David Jones also purchase from overseas markets (refer to Flow Chart 18).

David Jones procures these goods in two basic groupings – Home & Food, and Apparel, Accessories & Footwear (these groups constitute the core business products for the organisation).

However, of the total stock purchased, for the period of 1992 to 2004, only 6.76% was purchased from overseas markets, whilst the remaining 93.24% was sourced locally. In dollar terms, \$9,147,516,766 was spent locally, whilst only \$663,053,760 was spent overseas (refer to Table 1).

According to the *General Manager for Merchandising Planning* of David Jones, who is responsible for stock purchase, overseas markets do not greatly influence purchasing strategy within David Jones.

Interview response of 1-12-04:

***Can you explain the competitive environment in which David Jones operates?***

*Two years ago our major competitor, Myer, seemed to drop the ball when it came to competing in the marketplace. However, recently, with a new CEO, they have a coherent strategy to compete, based around brands. They also understand that store ambience is important. This has led to heightened competition and extreme discounting.*

*We operate in an intense, highly competitive environment with almost zero barriers to entry.*

***In your opinion, do you believe David Jones operates in, or is affected by Globalisation?***

*No, we are very locally orientated. Our employee base is 99.9% Australian. Most of our vendors are Australian-based, who supply \$1.7 billion dollars worth of stock!*

*The only area that globalisation may affect us is in the recent tariff reductions that went from 25% to 17.5%, however, any savings from this will be passed onto the consumer anyway and therefore will not affect David Jones.*

*I would say we are only marginally affected by globalisation as we spend about \$50 million a year on overseas stock."*

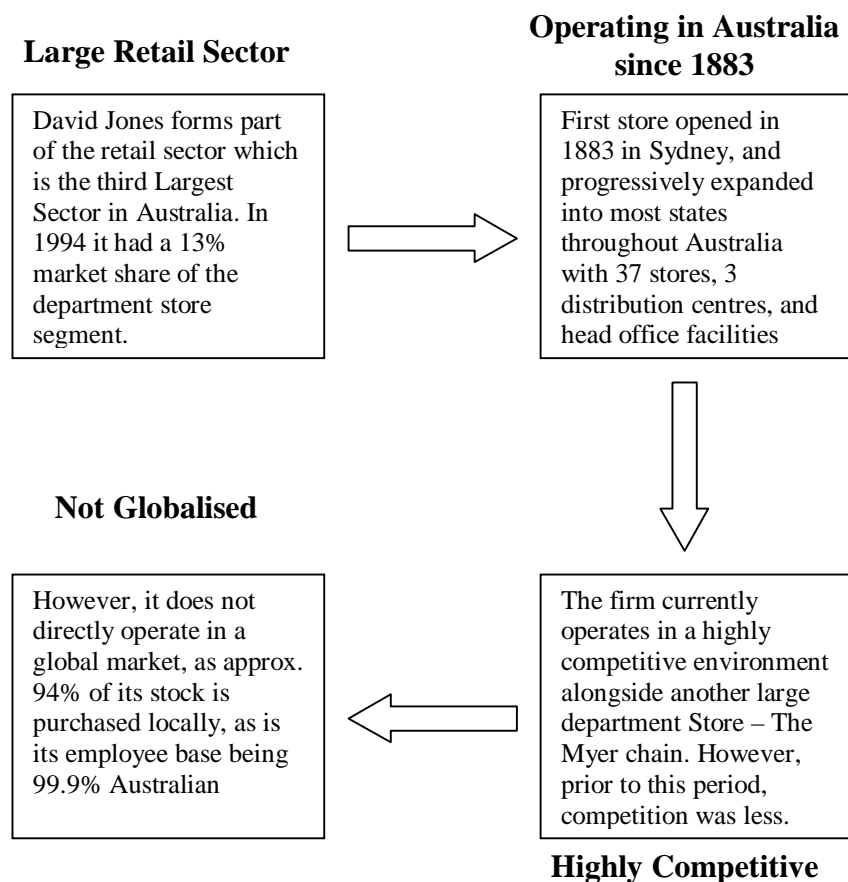
The *General Manager of Procurement* for David Jones supported this in an interview response of 1-12-04:

**Can you explain the competitive environment in which David Jones operates?**

*Very competitive! We compete for every retail dollar. According to the ABS, we are segmented into the complete department store category, this includes discount department stores, however our major competitor is Myer who competes with us on an extreme level.*

**In your opinion, do you believe David Jones operates in, or is affected by globalisation?**

*Yes, in some respects further up the supply chain, however, only marginally. Globalisation does have an impact on products and services we purchase which has a general impact on driving down the cost of goods."*



**Flow Chart 18 – The David Jones Operating Environment**



It is concluded, therefore, that David Jones is only marginally influenced by globalisation.

It is, however, concluded that David Jones currently operates in a highly competitive local environment.

Under these competitive conditions, it is highly likely that the greatest focus is shifting onto core business objectives in order to compete effectively. Prior to this competitive period, without the influences of globalisation forcing David Jones to compete internationally on best practice, it is unlikely that the FM function was given much attention. However, as competition and growth place more and more demands on the infrastructure, especially as the market share is increasing, management focus on the FM function, especially in areas of strategic cost efficiencies, would be intensifying. That is, a decisive shift in priorities now includes the FM function, thus supporting a decision to outsource the function.

	<b>Local Purchases for Resale</b>	<b>Overseas Purchases</b>	<b>Total</b>	<b>% Overseas</b>	<b>% Local</b>
<b>1992–93</b>	\$649,790,267	\$55,717,477	\$705,507,744	7.90%	92.10%
<b>1993–94</b>	\$679,748,672	\$51,021,363	\$730,770,035	6.98%	93.02%
<b>1994–95</b>	\$680,360,583	\$55,984,376	\$736,344,959	7.60%	92.40%
<b>1995–96</b>	\$755,820,699	\$72,550,240	\$828,370,939	8.76%	91.24%
<b>1996–97</b>	\$721,887,865	\$56,145,010	\$778,032,875	7.22%	92.78%
<b>1997–98</b>	\$678,597,977	\$28,599,860	\$707,197,837	4.04%	95.96%
<b>1998–99</b>	\$718,609,859	\$61,232,799	\$779,842,659	7.85%	92.15%
<b>1999–2000</b>	\$794,355,992	\$62,921,047	\$857,277,040	7.34%	92.66%
<b>2000–01</b>	\$798,826,635	\$57,970,794	\$856,797,430	6.77%	93.23%
<b>2001–02</b>	\$884,219,165	\$58,123,345	\$942,342,511	6.17%	93.83%
<b>2002–03</b>	\$867,015,630	\$55,644,724	\$922,660,354	6.03%	93.97%
<b>2003–04</b>	\$918,283,417	\$47,142,722	\$965,426,139	4.88%	95.12%
<b>Total</b>	<b>\$9,147,516,766</b>	<b>\$663,053,760</b>	<b>\$9,810,570,527</b>	<b>6.76%</b>	<b>93.24%</b>

**Table 1 – David Jones Local vs. Overseas Purchasing Spend 1992 to 2004**

### 6.3.2 OPERATIONAL STRUCTURE

Currently David Jones has 5,073 employees (922 full-time, 4,151 part-time) nationwide (refer to Table 2).

According to the Australian Bureau of Statistics (ABS) (2000), this is considered a large-sized business:

*Large businesses (with employment of 200 persons or more) contributed less than 1% of the total number of retail businesses, but 41% of total retail income. The remaining 4% of retail businesses and 21% of income was attributable to medium size businesses (with employment 20–199 persons). (8622.0 Retail Industry, Australia EMBARGO: 11:30 AM (CANBERRA TIME) 13/10/2000).*

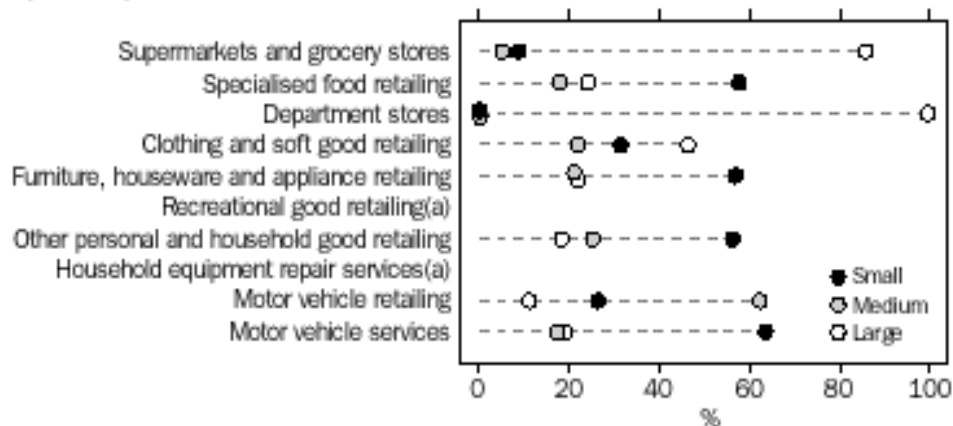
Including Foodchain		Excluding Foodchain	
<b>2000–01</b>		<b>2000–01</b>	
Full-time	1,270	Full-time	1,187
Part-time	4,451	Part-time	4,269
<b>Total</b>	<b>5,721</b>		<b>5,456</b>
<b>2001–02</b>		<b>2001–02</b>	
Full-time	1,191	Full-time	1,090
Part-time	4,650	Part-time	4,466
<b>Total</b>	<b>5,841</b>		<b>5,556</b>
<b>2002–03</b>		<b>2002–03</b>	
Full-time	1,045	Full-time	1,032
Part-time	4,390	Part-time	4,377
<b>Total</b>	<b>5,435</b>		<b>5,409</b>
<b>2003–04</b>		<b>2003–04</b>	
Full-time	922	Full-time	922
Part-time	4,151	Part-time	4,151
<b>Total</b>	<b>5,073</b>		<b>5,073</b>

**Table 2 – Employment Numbers for David Jones 2000–04**

By way of comparison, the ABS (2000) reported that the total employment in the retail trade industry at 30 June 1999 was estimated to be 1,104,651 persons. Specialised food retailing had the highest level of employment, with 243,757 persons, which was 22% of total retail employment. This was followed by supermarkets and grocery stores with employment of 234,960 persons (21% of the total retail employment). Within the specialised food industry group, take-away food retailing was by far the largest contributor to employment, with 166,612 persons in this industry alone. Those industry classes with the least employment included trailer and caravan dealing (1,105 persons), milk vending (1,156 persons) and photographic equipment retailing (1,906 persons). (8622.0 Retail Industry, Australia EMBARGO: 11:30 AM (CANBERRA TIME) 13/10/2000).

And, as David Jones is classified as a large department store business, it was found to dominate this sector with other department stores contributing the highest percentage to total income (refer to Figures 7 and 8).

PERCENTAGE CONTRIBUTION TO TOTAL INCOME,  
By Industry Group and Business Size— 1998–99



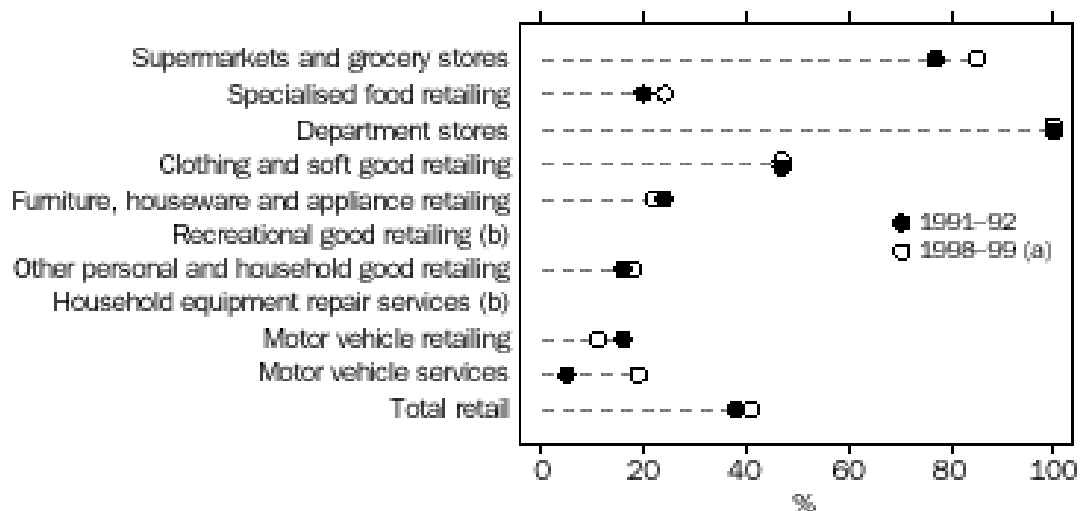
(a) Not available due to confidentiality

**Figure 7 – Department Store Contribution to Retail Sector Income**

Also:

*Large businesses completely dominated total income for the department stores (99.6%) and supermarkets and grocery stores (86%) industries. They also contributed the largest proportion of the clothing and soft good retailing industry with 47% of total income (8622.0 Retail Industry, Australia EMBARGO: 11:30 AM (CANBERRA TIME) 13/10/2000) (Australian Bureau of Statistics 2000)*

LARGE BUSINESSES, Percentage Contribution to Total Income by Industry Group—  
1991–92 and 1998–99



(a) See paragraph 20 of the Explanatory Notes

(b) Not available due to confidentiality

**Figure 8 – Large Businesses Contribution to Retail Sector Income**

Department stores (and therefore David Jones) were found to have one of the lowest labour costs per employee. The labour cost per employee mirrors the relationship of full-time to part-time employment across the various retail industries. The highest labour cost per employee was recorded in motor vehicle retailing, with \$36,400, followed by household equipment repair (\$30,700) and furniture, houseware and appliance retailing (\$28,400). These industries had a high proportion of full-time employees. The lowest labour cost per employee was recorded in specialised food retailing (\$12,800), followed by department stores (\$18,000) and supermarkets and grocery stores (\$18,900), which had a high proportion of part-time employees (8622.0 Retail Industry, Australia EMBARGO: 11:30 AM (CANBERRA TIME) 13/10/2000.) (Australian Bureau of Statistics 2000)

David Jones' corporate structure is currently a centralised operation (refer to Table 3). David Jones has operated centrally for the majority of its operating duration. As can be seen in Table 3, the majority of stores are in NSW, as are all the head offices. This is also reflected in the employee numbers by state, wherein NSW has the highest proportion of employees (refer to Table 3).

Of these employees, the following head office divisions are centralised out of two office locations in Elizabeth and Market Streets, Sydney: Administration, Buying Office, Company Secretary, Corporate Credit, Corporate Management, DJ.COM, Food Chain, General Managers – Stores, Human Resources, H. R. Development, Information Technology, Insurance, IT, Legal & Risk Management, Marketing, Marketing/Visual Merchandising Advertising, Merchandise Operations, National Supply, Occupational Health & Safety, Procurement, Projects, Property, Risk Management, Store Administration, Stores Process and Administration Group, Stores Project Manager – NSW North and Queensland, Stores Support, Supply Chain, and Treasury (David Jones Limited 2004b).

As can be seen from these divisions, David Jones operates most of its critical management functions from a centralised corporate structure.

Given that David Jones is a large firm, it is assumed that the FM function would have enough scale to reap value in-house. However this size could only be effectively utilised in a reasonably centralised structure. David Jones has “progressively” been centralising its functions over the last four years or so. At the time of outsourcing, there was still a decentralised FM function, operating on a store-by-store basis.

### 6.3.3 PHYSICAL INFRASTRUCTURE

This centralised department store operation currently involves 37 Class 6<sup>54</sup> retail stores throughout Australia (refer to Table 3), and 592,489 m<sup>2</sup> of infrastructure. The infrastructure is situated in all states and territories within Australia except Tasmania and the Northern Territory.

There are also three Class 5 head offices located in Sydney, and three Class 7 warehouses of 33,867m<sup>2</sup> in total. Therefore, 626,356 m<sup>2</sup> of infrastructure are used by David Jones to operate its business.

The majority of this infrastructure forms part of a larger shopping-centre complex (excluding the Market and Elizabeth Street Stores, warehouses and head offices). Also, all sites are leased to David Jones by various landlords throughout Australia.

As such, ownership of the properties in which David Jones operates is with others (landlords). However, internal fit out, including most assets that fall under the FM function for David Jones (refer to Table 7), are owned 100% by David Jones or maintained by David Jones and owned by the landlords. No assets have been, or are owned currently by an FM service-provider.

According to the *Building Service Manager* during the interview of 1-12-04:

***Can you describe the assets that David Jones owns which come under the facilities management function?***

*Ninety-five per cent of all stores we are in we own all central plant for our stores. Lifts and escalators, all fixtures and fittings, all general lighting and power supply and distribution boards, etc. We are not, however, responsible for some I.T. infrastructure. We supply all the back-up systems also.*

***Can you describe the assets that David Jones does not own which come under the facilities management function?***

*External building fabric and entrance doors, some grease traps. Basically the Lessor supplies us with a shell, and we are responsible for everything inside it!*

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<sup>54</sup> Building Code of Australia classification is used to classify building types for the purpose of Legislative compliance

Of these 100%-owned assets which fall under the FM function, Table 4 identifies those assets that may have a specific<sup>55</sup> impact on David Jones's core business (that is, impacts on, and contributes to core business objectives specifically). This indicates which are shared by others outside David Jones, and which are considered specifically tailored for David Jones's use and therefore are considered unique specific assets.

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<sup>55</sup> These assets are considered specific in that they directly affect customers during the shopping experience (refer to the CEO's comments as previously quoted) and have been designed specifically for David Jones's unique operation – excluding fit-out of fixtures (Wofford 1995a).

<b>Including Foodchain</b>							
<b>2000-01</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	36	657	143	118	190	126	1,270
Part-time	138	2,207	619	349	855	283	4,451
Store Nos	2	15	7	3	5	4	36
<b>2001-02</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	37	576	128	99	210	141	1,191
Part-time	171	2,327	603	343	831	375	4,650
Store Nos	2	18	7	3	6.5	4	40.5
<b>2002-03</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	37	515	115	97	142	139	1,045
Part-time	216	2,120	570	321	733	430	4,390
Store Nos	2	17	7	3	7	4	40
<b>2003-04</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	31	457	101	99	127	107	922
Part-time	232	2,039	538	278	672	392	4,151
Store Nos	2	17	7	3	4	4	37
<b>Excluding Foodchain</b>							
<b>2000-01</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	36	625	143	118	139	126	1,187
Part-time	138	2,155	619	349	725	283	4,269
Store Nos	2	15	7	3	4	4	35
<b>2001-02</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	37	544	128	99	141	141	1,090
Part-time	171	2,278	603	343	696	375	4,466
Store Nos	2	17	7	3	4	4	37
<b>2002-03</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	37	512	115	97	132	139	1,032
Part-time	216	2,113	570	321	727	430	4,377
Store Nos	2	17	7	3	4	4	37
<b>2003-04</b>							
Emp. Type	<b>ACT</b>	<b>NSW</b>	<b>QLD</b>	<b>SA</b>	<b>VIC</b>	<b>WA</b>	<b>Totals</b>
Full-time	31	457	101	99	127	107	922
Part-time	232	2,039	538	278	672	392	4,151
Store Nos	2	17	7	3	4	4	37

**Table 3 – David Jones Employees by State**



<b>Asset Type</b>	<b>Sub-element</b>	<b>Description</b>	<b>Unique/Specific</b>
Contract Cleaning	Sell and non-sell areas, kitchens, coffee shops, restaurants, recycling, grease traps	All cleaning requirements for stores and offices	Special cleaning requirements tailored for David Jones department stores. Differ from Industry standard specifications. Not a shared resource.
– Contract Maintenance – Electrical	Luminaries, power supply, switchboards, UPS, control devices, communications.	Complete electrical infrastructure maintenance for stores and offices	Unique lighting designs and specific lux levels required to maintain ambience considered critical to core trade vis customer perception and not shared by others.
– Contract Maintenance – Air-conditioning	Chillers, boilers, air-handlers, BMS, dampers, split systems, plant rooms.	Regular maintenance of plant and equipment for the complete air-conditioning systems for stores and offices.	Dedicated systems independently servicing the David Jones store (as opposed to centre provided A/C). Critical in maintaining comfort levels for customers.

**Table 4 – David Jones Specific Assets by Account Code Directly Managed by the Facility Management Function**

These identified specific assets for David Jones (as derived from management) represent 25% of the total infrastructure managed under the FM function (refer to Flow Chart 19).

Infrastructure ownership is basically with David Jones, but real-estate ownership is not. Real-estate ownership was sold off and leased back over a period of five years or so. This program has only just been completed in full, and seemed to coincide with the outsourcing of the FM function.

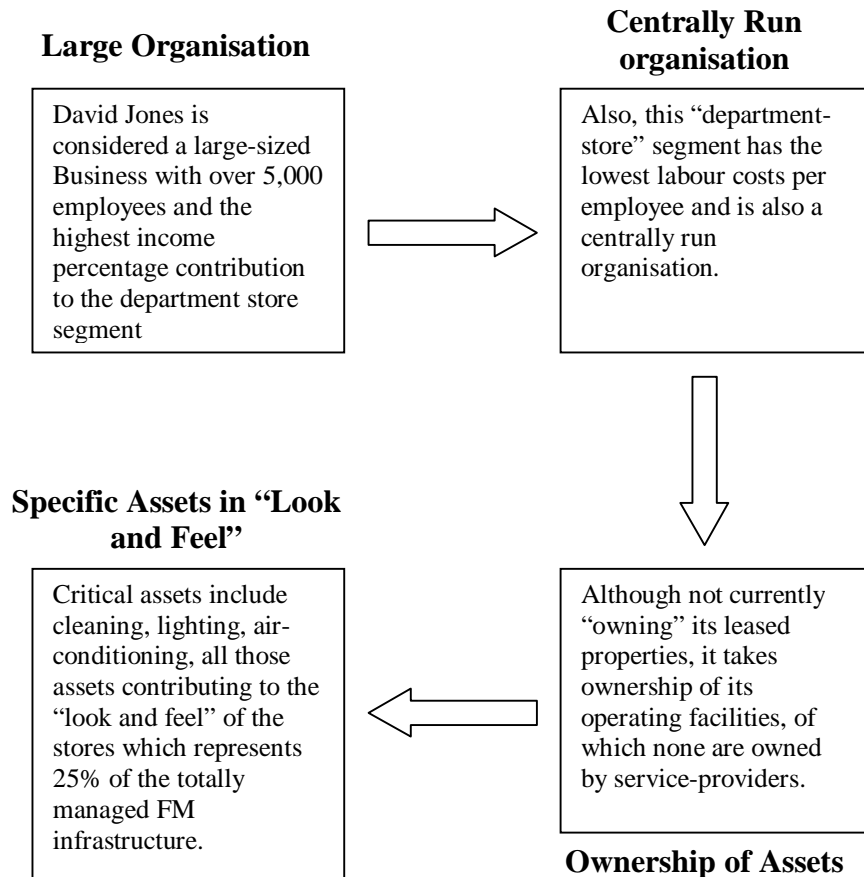
According to the *Building Service Manager* during the interview of 1-12-04:

***In your opinion, what are the services/assets that you feel are particularly unique to David Jones?***

*Lighting and the level of quality of our fixtures and fittings.*

***Do you believe these assets could or do impact on core business/trade directly?***

*Yes. We are to satisfy the expectations of our customers by delivering quality of ambience and fixtures and fittings of the store. We are operating in the high end of the market, to achieve sales we must deliver this!*



**Flow Chart 19 – The David Jones Fm Operating Environment**

### ***SPECIFIC ASSET – LIGHTING***

In 1993, HOP Illuminations (a service-provider) was asked by David Jones property management to present a paper on department-store lighting. A comprehensive review, dating from 1887 through to 1993, was submitted. The report seems to confirm that lighting of David Jones is a unique and important asset.

In summary, in the very first application of electricity for lighting, David Jones had installed lighting in its George Street Store in Sydney in 1887; barely six years after Thomas Edison publicly demonstrated his first electric light bulb in New York to his bankers and investors. This shows that David Jones was very progressive even then. The first really big change came when the new Elizabeth Street Store opened its doors on November 28 1927. The totally reworked ceiling had symmetrically arranged

pendants creating a uniform light level at the counter; for 1927 this was quite a radical move.

By 1950 it was being realised that presentation and visual effect of the merchandise was very important to sales.

From about 1970 there was a blossoming of the variety and styles of luminaries and light sources. Colour and spotlighting to attract the customer were now recognised as an important part of merchandising (Paidasch 1993) .

This would indicate that some competitive advantage may have been realised through this specific asset of lighting. It is expected that David Jones would not be readily considering outsourcing the design of its internal fit-outs along with its FM, as this aspect has developed with it throughout its history. Most of the design knowledge would be unique, even intellectual property held by David Jones and its nominated sub-contractors. This will be discussed further in this chapter.

## **6.4 DAVID JONES – FACILITY MANAGEMENT**

### **6.4.1 FACILITY MANAGEMENT HISTORY**

The management of all these assets via the FM function (refer to Table 7) for David Jones was performed in-house until 2001 (refer to Figure 9).

According to the *General Manager Property and Projects*, who stated during the interview on 3-12-04:

***Can you give me a brief overview on how David Jones performed its facilities management when in-house?***

*It was in-house facilities management but wasn't co-ordinated and wasn't centralised except for major contracts. It was handled at the lowest level at the stores.*

David Jones then outsourced its FM function to an external company from February 2002 to August 2004.

According to a "request for information" sent out to prospective FM companies, the outsourcer was to perform the outsourced management of the FM contractors (which David Jones then had in place with various third-party goods and service-providers), including but not limited to buildings, lifts, escalators, plant (fixtures and fittings), electrical, repairs and maintenance, in-store communications (paging and PA systems), luminaries (lighting), materials handling (provision of appropriate trolleys for

the movement of goods in the store etc), in-store plant hire (decorative plant/shrubs), air-conditioning, refrigeration, all energy management, all cleaning (provision of cleaning materials and waste removal), in the David Jones department stores, rack stores, Foodchain Stores, warehouses and corporate sites. "[David Jones has] a number of staff employed, performing repairs and maintenance at most stores, who will need to be transferred across to successful respondent." (David Jones Limited 2001b)

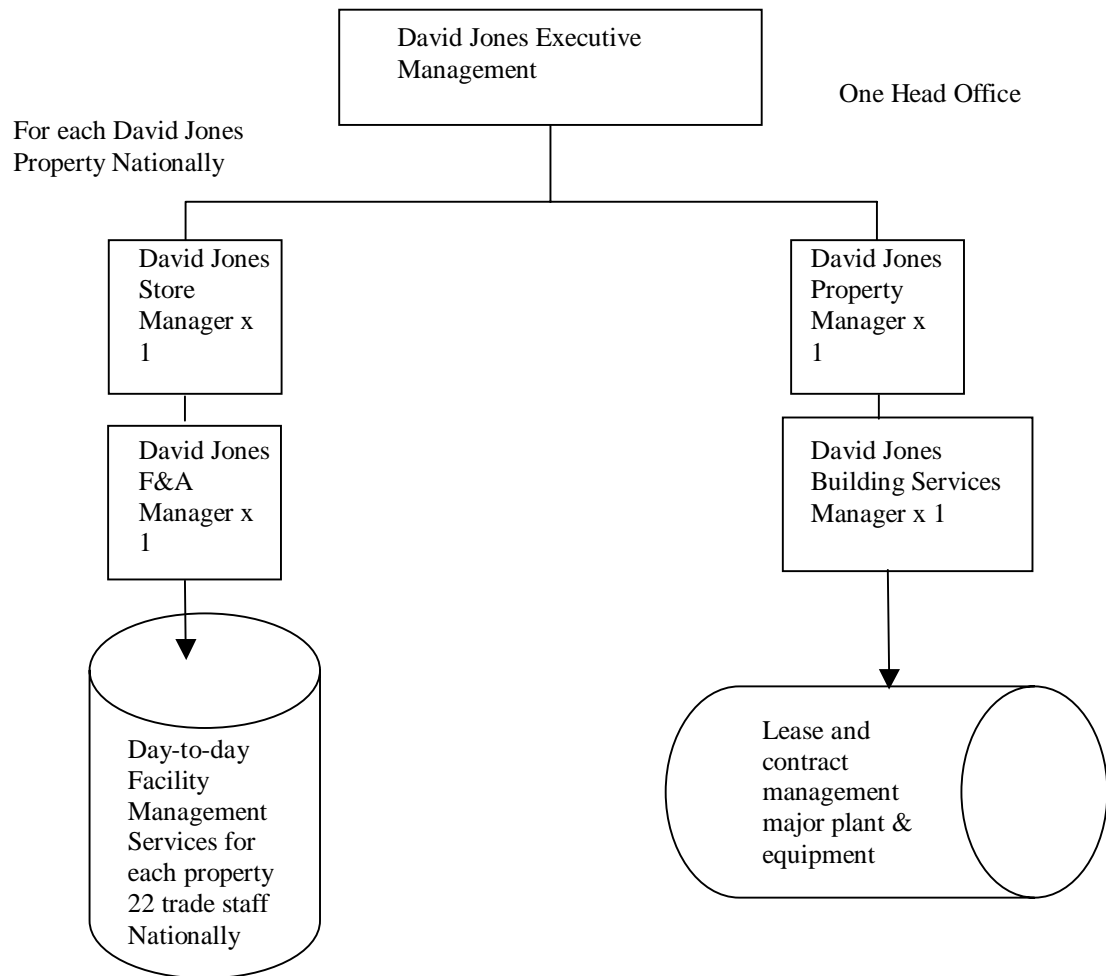
The outsource contract was comprehensive, in that only one outsource provider was chosen to manage all the facility management functions listed (refer to Figure10). So all of the FM was outsourced, except for the already centralised contract management team, design and fit-out work.

However, just how much "true" outsourcing took place is questionable, especially given that the existing contract management team remained relatively unchanged. But it would be fair to say that some transfer of control and ownership took place for the FM function to some extent.

### ***IN-HOUSE MODEL***

As indicated in Figure 9, the in-house FM function was primarily the responsibility of the Finance and Administration personnel.

A typical profile of the duties undertaken by Finance and Administration staff during this time can be found in the David Jones position description. This describes it as managing the administration and finance functions of the store to ensure all relevant policies and procedures are implemented to achieve the strategy and value propositions of the company. Also, to manage the cleaning and maintenance of the store, the asset register of the store, and ensure company compliance with legislation (David Jones Limited 2000a).



**Figure 9 – David Jones In-house Facility Management Structure Chart up to Feb 2002.**

The current *Human Resources Manager* for the stores, when interviewed on the 2-12-04, stated:

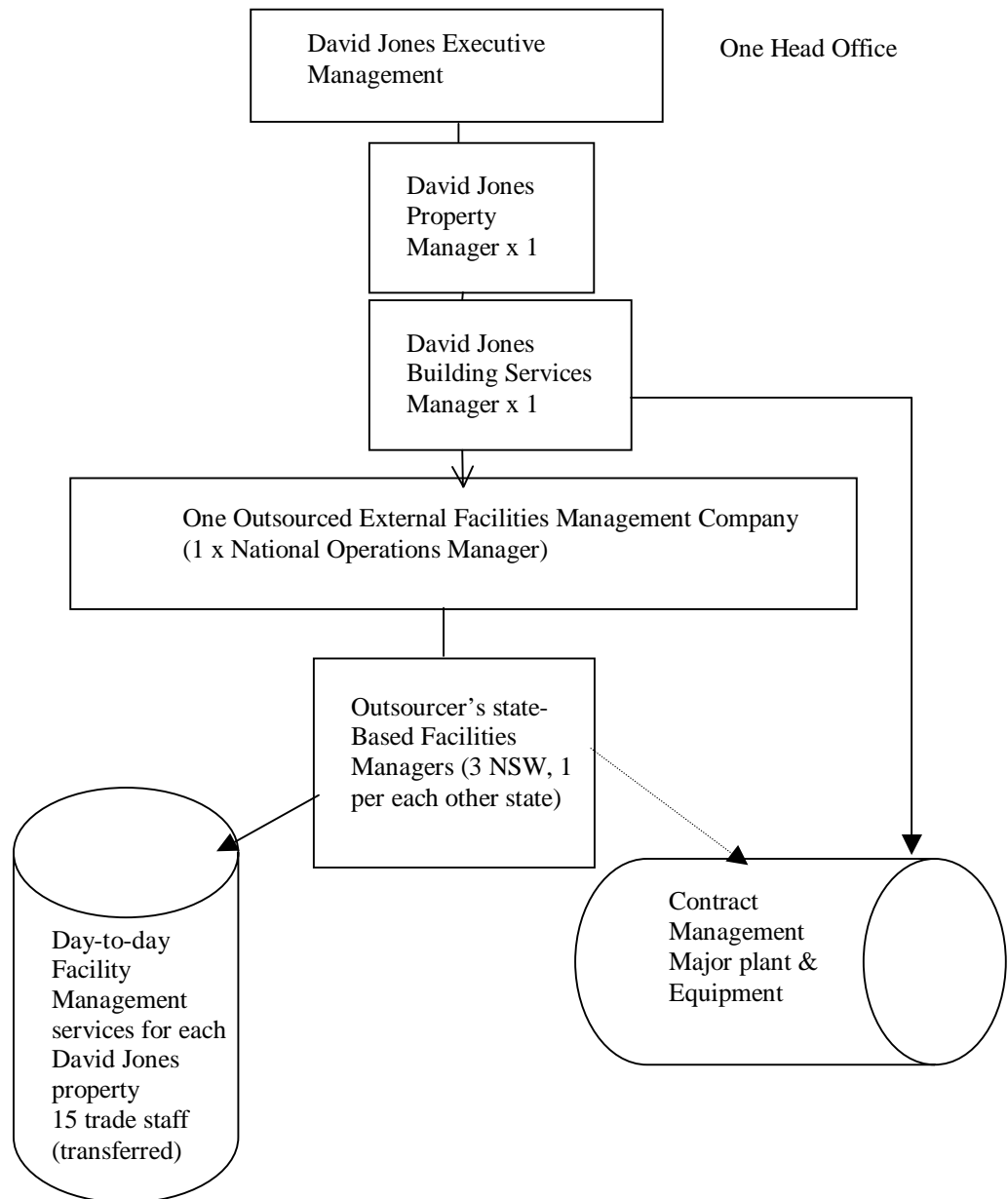
***What was the involvement of the Stores Staff when David Jones performed its Facility Management in-house?***

*When I worked for David Jones' major competitor it was the same thing! Each store rang whoever they wanted direct. That is a preferred list. The store would make the decisions usually based on Occupational Health and Safety and brand health, especially for the last two years of in-house management."*

***How much resource allocation was built into the stores' staff job description to perform this work?***

*Nil. It was just considered as part of their job. Most stores had a personal assistant working for the Finance and Administration Managers. As years*

went on these PAs were reduced. Today's structure is a lot leaner than before as a result of cost efficiencies brought about by the competitive nature of our business and profit.



**Figure 10 – David Jones Outsourced Facility Management Chart from Feb 2002 to August 2004**

***How much had this changed when Facilities was outsourced?***

*It was a change management process. I do not know of any formal change management plan. I did witness that work orders were now the way stores did FM via the outsourcer."*

***Now that it has been brought back in-house again, are there any changes when compared to the previous in-house arrangement?***

*The service is now quicker than it was with the outsourcer. Nothing changed as far as the Stores job descriptions goes. Nothing has changed for "Floor Staff", as they have always had to report maintenance issues.*

According to the *Finance and Administration Manager* for the Market and Elizabeth Street Stores, when interviewed on 3-12-04:

***What was your involvement when David Jones performed its Facility Management in-house?***

*We had maintenance staff on salary that I directly managed and was responsible for. I managed the people and the outcomes. The property department looked after the bigger picture like strategy etc. We did the on-site day-to-day and at times contract negotiations also. Back then, stores could use their own contractors.*

***How much of your time was spent on performing this work?***

*About three hours per day; with managing cleaning and stuff like that also.*

***How much had this changed when Facilities was outsourced?***

*There was negotiation of contracts taken away and that was a good thing. It saved me about two thirds of my time. That is, down to about one hour per day.*

***Now that it has been brought back in-house again, are there any changes when compared to the previous in-house arrangement?***

*Yes, no on-site salary maintenance people anymore. Contract are now at a national level with the procurement department. Now there is an avenue that I can go to for professional advice. I utilise the FM team more now than I did before. I do not have to write work orders or invoice payment now. Also, I do not have to chase suppliers.*

Considering these comments, it could be suggested that approximately 38% of the store management time was taken up with managing facilities when performed in-house previously.

As indicated in Figure 10, the function was then outsourced, which was then managed by the Building Services Manager of David Jones Property and Projects.

The point here is that initial control and “centralised” management supplied by the outsource provider allowed the remaining F&A managers to concentrate on store issues rather than FM issues. This afforded more centralised control of FM for David Jones in totality.

### **CENTRALISED FACILITY MANAGEMENT**

A typical profile of the duties undertaken by the Building Services Manager was found in the David Jones position description Key Result Areas for this position (refer to Figure 11).

<b>Maintenance budget</b>	Manage service contracts and the facility management outsource provider in regard to performance of service providers, cost and quality of service provided.
<b>Compliance with mandatory regulations</b>	Manage company's compliance with regulatory requirements for services, plant and equipment.
<b>Capital expenditure</b>	Manage the company's Engineering Services capital budget within approved guidelines.
<b>Maintenance costs</b>	Manage and review the ongoing performance of the outsource provider

**Figure 11 – David Jones Building Services Manager Key Results Areas**

According to the *Building Services Manager* during the interview on 1-12-04:

***What was your involvement when David Jones performed its Facility Management in-house?***

*Total involvement. I oversaw and managed the day-to-day operations and at one stage major projects. There was no General Manager of Property at that time. The project team was also set up differently (when all drawings were done by hand). I reported to the Director of Operations.*

***How much of your time was spent on performing this work?***



*Ninety per cent of my time was spent on Facilities Management. The role grew and grew. Contracts were done by the National Services Manager of Procurement. However, this function also came over to me. I renegotiated most of these services contracts, especially air-conditioning. At the time I had other David Jones Limited companies to look after; like John Martins."*

***How much had this changed when Facilities was outsourced?***

*It was supposed to make my life easier, but in fact it increased my workload. However, it did help me out a little as I gained the outsourcers' state based Facilities Managers. But I did lose the full-time maintenance staff, especially the works managers. The property portfolio also reduced slightly."*

***Now that it has been brought back in-house again, are there any changes when compared to the previous in-house arrangement?***

*Yes, I am much more involved in the day-to-day activities. All this was handled locally by the F&A managers and the works managers. There is a major difference in the type of F&A managers now compared to back then. Previously they were older and experienced. Now they are younger without operational experience. They are also under a lot more pressure with sales and are unable to concentrate on facilities management."*

This would suggest that monitoring of the outsourcer may have been more time-consuming than anticipated (refer to Flow Chart 20).

Although there were definite transfer and centralisation advantages to outsourcing, there was a definite need to increase monitoring of the outsource provider.

## ***RELATIONSHIP AND MONITORING ISSUES***

It is also suggested that this "excessive" monitoring can be attributed to the type of relationship that David Jones had with the outsource provider.

The *Building Services Manager* stated, during the interview on 1-12-04:

***In your opinion, what was the cause of the large quantity of management time spent by yourself during the outsourcer's management of David Jones Facilities?***

*The main problem was the outsourcer was under-resourced from day one which we communicated to them both formally and informally. It took nine months to get a South Australian state-based Facility Manager! This was*

*contrary to the terms of the contract. I think they were having their own problems within the company at a senior management level. The same also happened with our ACT region.*

***Can you describe the type of relationship David Jones had with the outsource provider?***

*Initially we had a very good relationship (for the first twelve months). Then it degraded. I think it was because we asked them to do accounts accruals. They did not have the accounting staff to handle this work. They had quite a consistent turnover of staff which created instability. I think this was because their salaries were too low and the quality of people not good enough. The relationship became totally negative at the end. One main reason in my opinion was because there was a management change within their structure, especially on the David Jones account management side. There was a depletion of active staff.*

This adversarial relationship became fully evident by the actions of David Jones, in that the outsourcer's services were terminated in August 2004, well before the contract end date of January 2007.

According to the *General Manager, Property and Projects*, who stated during the interview on 3-12-04:

***Can you describe the type of relationship David Jones had with the outsource provider?***

*Initially it was quite good but deteriorated due to a lack of perceived performance and issues with changes in their management. This reduced our confidence in their ability to do a good job.*

***Why did David Jones choose early termination of the outsourcing contract?***

*Due to lack of performance and a number of issues created within David Jones as a result. Also a general loss of confidence in their ability to rectify these issues.*

Not only was additional monitoring becoming an issue, but it seems that a lack of suitable staff from the outsource provider was also causing issues. After only twelve months into the contract, this is considered a major issue.

## **QUALITY ISSUES**

It is further suggested that one of the main reasons for the early termination of the outsource provider was the low level of perceived quality of the management service provided by it. This is especially so when compared to the previous in-house delivery.

According to the *Building Services Manager* during the interview on 1-12-04:

***Can you describe the overall level of quality of service that the outsourcer provided?***

*In the end sub-standard. In the beginning they were good. There was a genuine attempt by them to integrate into our culture. They underestimated the workload.*

***How was this different from when David Jones performed in-house facilities management?***

*When we were in-house we had more control. It was easier to manage one store at a time by the local F&A managers. Control of quality was questionable due to a lack of expertise within the David Jones Finance and Administration Managers. This was due to young inexperienced F&A staff coming into the business.*

This is supported by the views of the *Finance and Administration Manager* for the Market and Elizabeth Street Stores, when interviewed on 3-12-04, stating:

***Can you describe the overall level of quality of service that the outsourcer provided?***

*Quite poor standard. I judge poor standard by no financial advantages, no best practice introduced. They were obstructive to improvements. I felt they were on their own agenda and didn't fit in with us. They wanted us to fit in with them. Their skill set was questionable. The best Facility Manager they provided to us was an ex-barman!"*

***How was this different from when David Jones performed in-house facilities management?***

*I did work orders and we had better knowledge and transparency of the finances and our work. We knew which supplier would be used.*

These comments seem to be supported by the comments of the *General Manager, Property and Projects*, who stated during the interview on the 3-12-04:

**Can you describe the overall level of quality of service that the outsourcer provided?**

*Over-promised and under-performed.*

**How was this different from when David Jones performed in-house facilities management?**

*In some areas quality was much better. There was a quicker response time. The internal staff were able to provide a higher level of confidence.*

According to an internal audit initiated by David Jones on the outsourcer's performance, data taken from customer surveys (refer to Tables 5 and 6) suggested that quality of service did not meet the expected levels in the last year of the contract. This further supports the previous comments:

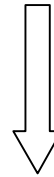
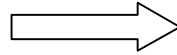
[The outsourcer's] formal procedures require a customer satisfaction survey be completed by the Store Manager on a six-monthly basis for contracted suppliers and ad hoc maintenance ... Perusal of the reports for the six months ended 31 July 2003 highlighted some critical comments by David Jones Staff ... NSW CBD region rated the following services as 1 out of 10 (poor): Cleaning, Electrical Services, Ad Hoc maintenance, Overall service. (PriceWaterhouseCoopers 2004)

### **Decentralised In-house FM Delivery**

David Jones performed a decentralised FM in-house until 2001, and was primarily managed by Finance & Administration Staff with on-site in-house trades staff

### **Management Time on FM Delivery**

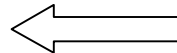
Overall, Facility Management represented about 38% of on-site staff's management time when performed in-house



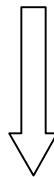
### **Management Time & Relationship Issues**

However, further management time and relationship issues developed between David Jones and the outsource provider, culminating in early termination of contract

From 2001 to 2004 FM was outsourced to a single provider, which freed up on-site management time and transferred on-site trades staff.



### **Centralised Outsourced FM Delivery**



Quality of FM delivery also became questionable and FM was subsequently returned in-house.

### **Quality Issues Saw a Return to Insourced FM**

**Flow Chart 20 – David Jones Facility Management History**

Further, it could even be argued that this was a problem evident from day one, as six months into the contract<sup>56</sup>, David Jones Property and Projects undertook a comprehensive customer survey by sending to all Finance and Administration

<sup>56</sup> The results of this survey support the effects of “time” and “nullification”, which will be discussed in subsequent chapters of this thesis.

managers a questionnaire, which indicated that the outsource provider was perceived by David Jones to not be providing a reasonable level of quality service (refer to Tables 5 and 6).

The anticipated quality was short-lived. Indeed, a perception of a failure to deliver the required quality certainly prevailed. This is a premature development and one explanation could be attributed to the fact that overall total control was not actually delivered to the outsourcer, when considering the remaining centralised in-house contracts management team, which actually maintained control of sub-contract contracts.

	Question	Rating out of 10 (all properties)
1	Cleaning management	4.75
2	Mechanical services management	6.04
3	Vertical transportation management	6.50
4	Electrical services management	5.72
5	Ad-hoc maintenance repairs	5.01
6	Essential services management	6.25
7	Waste management	6.94
8	<b>Overall outsourcer performance</b>	<b>5.18</b>
	<b>Average</b>	<b>5.8 or a score of 58%</b>

**Table 5 – Customer Surveys – Quality of Outsourcers' Services 2004**

	Question	Rating out of 5 (all properties)
1	How would you rate your satisfaction with the outsourcer's response time once you have placed a work order?	2.71
2	How would you rate the outsourcer's effectiveness?	2.55
3	Does the outsourced state manager listen to you and respond within a reasonable time of 24 hours?	2.71
4	Are you satisfied with the responses you receive from the outsourcer?	2.71
5	Do you find the outsourcer's personnel approachable?	3.39
6	How would you rate their managing of services such as cleaning, pest control, hygiene and waste removal?	2.61
7	Do you receive a fortnightly visit from your state representative?	1.84
8	Has there been in your opinion an increase in the standard of services provided to your store and managed by the outsourcer?	2.29
9	Are you satisfied with David Jones continuing with the outsourcer in managing the David Jones Facilities management requirements?	2.71
	<b>Average</b>	<b>2.61 or a score of 52%</b>

**Table 6 – Customer Surveys – Quality of Outsourcer's Services – First 6 Months of Contract 2002**

### ***DAVID JONES CORE BUSINESS AND FACILITY MANAGEMENT***

Understanding that there were issues for the FM delivery, it is important to gain an appreciation of the David Jones organisation, and its relationship with the FM Function, in order to identify any cause-and-effect patterns.

According to Mark McInnes, current Chief Executive Officer of David Jones, the company went through a restructure from 2003 to 2004, to enable a focus on core business:

We assessed a number of options for each of the businesses that we were under-performing or whose prospects did not meet our investment hurdles. On the basis of this analysis we decided that in order to generate sustainable earnings growth and long-term value for shareholders, we needed to restructure the business to focus on our core department store business. This restructure involved the exit from Foodchain, the re-positioning of the On-line business and a thorough review and assessment of the store portfolio. Our restructure is now complete and as a result, our entire management team is now focussed on delivering results from our core department store business (David Jones Limited 2004c, p. 7).

It is clear from the CEO's remarks that David Jones considers the "Department Store Business" as the core business for the company. This obviously excludes FM from being the core business, however, he further adds:

A key component of the Strategic Review was the assessment of each of the stores in the group's store portfolio ... Since announcement of the Strategic Review on 3 June 2003 we have commenced implementing a new cost efficiency program targeting non-customer service related areas. This program is designed to generate savings that more than offset costs arising as a result of investment in key store refurbishment's and improved customer service (David Jones Limited 2004c, p. 7).

So there may have been other factors involved in why the FM outsourcing was prematurely abandoned. Recent cost-efficiency drivers may have changed the dynamic of the importance of the FM function (as a major cost centre in its own right) and increased emphasis on the function would increase emphasis on quality outcomes (not previously requested). Under these new conditions, the original outsourcing strategy of initial cost cutting and staff re-structuring, being the key drivers, may have been achieved but with a perceived negative effect on quality. This is not entirely the fault of the outsource provider and may explain why David Jones felt it necessary to keep some control of the outsourcing process initially, and progressively.



## **STRATEGIC COST EFFICIENCIES**

From these comments, it can be suggested that even though the property<sup>57</sup> function is not considered as the “core” business for the company, it does, however, now play some part in the delivering of value for the organisation through strategic cost efficiencies.

He further adds:

We anticipate that by FY06 the cost efficiencies implemented as part of our cost management program will reduce our Company’s cost base by \$50 million per annum. Of this \$50 million per annum savings, \$40 million per annum will be offset against strategic cost increases (such as rent, occupancy and customer service) resulting from investment in key store refurbishment’s and service initiatives (David Jones Limited 2004c, p. 7).

These comments further support suggestions that there is now value to the organisation in strategic cost efficiencies generated in part by any property/facilities function efficiencies.

According to the *General Manager of Property and Projects*, who has overall responsibility for managing David Jones’s FM function, the FM function may affect core business in such a way as to be considered strategically important, however, not strategic in its own right. In his interview response of 3-12-04, he stated:

***What is your definition of facilities management as it relates to David Jones?***

*Management of facilities in David Jones offices, stores and warehouses. It excludes projects, as they are considered specific to our retail environment.*

***What is the relationship of the Facility Management function and other property functions for David Jones?***

*There is a relationship in terms of the operations. There must be a connection with Stores, Projects, and FM functions because of overlapping areas.*

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<sup>57</sup> The facilities management function for David Jones has always formed part of the Property & Projects department for the group. However, more emphasis has always been on the project work surrounding new fit-outs and the leasing side surrounding new sites and centre redevelopments, rather than the FM function. A detailed FM function description for David Jones will be dealt with in subsequent chapters.

***In your opinion, what is the relationship of the Facility Management function for David Jones with other business within the company?***

*The main relationship is that FM affects all parts of the business, including warehouses and stores. It affects core business and there are key elements of our core business which are affected greatly by FM. Senior management consider FM as a support function, same as our project area. That is, they support the business strategy.*

***How important would you rate the Facility Management function to David Jones?***

*Fairly important. This business is about our two biggest costs; people, then premises! (Stock is our third biggest cost.)*

It seems that the FM function became strategic “after” the decision to outsource. And after achieving cost reductions through staff transfer, with centralisation of the function and many David Jones core business functions now established, this changed the dynamics of the operating environment. David Jones felt it increasingly important to re-gain control of the FM function under these conditions. This would definitely put adverse pressure on the outsource provider.

***UNIQUE SPECIFIC ASSETS AND UNCERTAINTY***

It could therefore be suggested that the FM function (forming part of the property department) is considered by David Jones to be, at times, a strategic business unit in a support capacity. However it could also be excluded from being regarded as core business or strategic in its own right.

However, considering that there could be a level of strategic contribution, it could be furthered that the majority of this contribution is tied up in the effective management of the assets managed under the FM function (refer to Table 7).

The FM function for David Jones is responsible for the day-to-day running<sup>58</sup> of these assets in a department-store environment within various major shopping centres (excluding offices).

Of these assets, as per the account code description in Table 7, a number of the more critical assets, say air-conditioning, are under comprehensive preventative maintenance contracts. This involves routine inspection and maintenance of the

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<sup>58</sup> The day-to-day running of the FM services are to be distinguished from the fit-out and physical establishment of the facilities, as they are considered as part of the project function and not the facilities management function (later evident in subsequent chapters).

assets. It can then be argued that uncertainty<sup>59</sup>, in these cases, is kept to a minimum through specified call-out and response times under contract, also, through redundancies and back-up systems built into the infrastructure – such as secondary chillers, alternate suppliers, and stand-by portable equipment.

Without exception, all the services managed under the FM function (excluding some specific branding and visual merchandising) can be purchased off the shelf and are not unique to David Jones. In the event of disruption to services, loss of trade may result, however simple business continuity plans exist that should minimise uncertainty (refer to Flow Chart 21)

This reasonably stable environment seems to be confirmed by the company's incident database<sup>60</sup>, as the data indicates minimal disruptions through plant and equipment failure.

This database is the tool used within David Jones to log trade-affected incidents. The incident reporting database provides a facility into which all David Jones staff can enter information relating to a particular incident that occurred within a particular store, and across the corporate business units. Another objective of the system is to store the data that relates to a particular incident (David Jones Limited 2004d).

The database indicates that from 2000 to 2004 (the time since data has been captured) 33,536 incidents were logged overall, with only 613 related to FM services incidents. This represents only 1.83% of all reported incidents being related to FM assets (refer to Table 8).

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<sup>59</sup> Uncertainty, for the purposes of this thesis, is defined as “the likelihood of issues for the assets listed requiring considerable co-operation to fix, which could cause major disruptions for the organisation”.

<sup>60</sup> An incident summary report is created whenever an incident arises within a store of David Jones. It contains information describing the nature of the incident, date and time when the incident occurred, type of the incident and any corrective actions taken. Every incident is assigned a unique incident number. The data is managed via the risk management unit of the company.

<b>Asset Type</b>	<b>Sub-element</b>	<b>Description</b>	<b>Business Continuity</b>
Light and Power	Third-party power supply retailer	All power requirements for stores and offices	UPS, diesel generation, battery back-ups, alternate grid supply
Gas and Oil	Kitchens, boilers, air-conditioning systems	All fuel requirements for stores and offices	Risk exists – limited back-up systems
Contract Cleaning	Sell and non sell areas, kitchens, coffee shops, restaurants, recycling, grease traps	All cleaning requirements for stores and offices	Comprehensive cleaning contract (performance-based)
Waste Removal	Cardboard, wet, general, foam, plastic, trade waste	Complete waste removal functions for stores and offices	National service contract with two suppliers + stand-by suppliers on database
Sundry Occupancy Costs	Pest control and hygiene services, toilets, rest rooms, change rooms, food handling areas	For stores and offices	State-by-state service agreements
Repair & Maint: Plt, Fixt & Fittings	Carpentry, locksmith, painting, glazing, electrical	All internal fit-out and appliance upkeep	National contract 3 major suppliers + local and state stand-by service providers in database
Contract Maint: Buildings	Plumbing, roller doors, auto doors, fire doors, fire services, flooring, boom gates,	Regular maintenance works for stores and offices	Regular maintenance agreements with minimum call-out and response times
Contract Maint: Lifts	Passenger, staff, goods, food lifts.	Regular maintenance of lifts	Under comprehensive maintenance contract
Contract Maint: Escalators	Stores escalators only	Regular maintenance of escalators	Under comprehensive maintenance contract
Contract Maint: Electrical	Luminaries, power supply, switchboards, UPS, control devices, communications.	Complete electrical infrastructure maintenance for stores and offices	Regular and comprehensive contract to maintain all electrical equipment – including back-up systems
Contract Maint: Air-conditioning	Chillers, boilers, air-handlers, BMS, dampers, split systems, plant rooms.	Regular maintenance of plant and equipment for the complete air-conditioning systems for stores and offices	Under comprehensive maintenance contract – including back-up systems
Contract Maint: Refrigeration	Fridges, cool rooms, food preparation areas, display cabinets.	Regular maintenance of refrigeration plant and equipment for stores and offices	Risk exists – no regular contracts in place

**Table 7 – David Jones Assets by Account Code Directly Managed by the FM Function**

Year	FM-related Incidents	Total Incidents	% of total
2000	191	6,882	2.78%
2001	148	7,876	1.88%
2002	190	6,920	2.75%
2003	45	6,507	0.69%
2004	39	5,351	0.73%
<b>Total</b>	<b>613</b>	<b>33,536</b>	<b>1.83%</b>

**Table 8 – David Jones Incident Database**

Having said this, however, the retail and service environment that the FM infrastructure supports operates in a high-turnover, high-public-traffic environment. Any failure or part failure of assets managed under the FM function would almost certainly affect the profitability of the company at some point, should trade be affected. And with the recent management focus on “look and feel”, due in part to increased competition with the Myer group, uncertainty levels are changing upward.

The *Building Services Manager* for David Jones, who was responsible for managing the facilities function as an employee of David Jones for fifteen years, when interviewed on 1-12-04, stated:

***What assets/functions managed under the facilities management function do you consider the most important and why?***

*The core functions that make the department function are mechanical services, power and light and vertical transportation.*

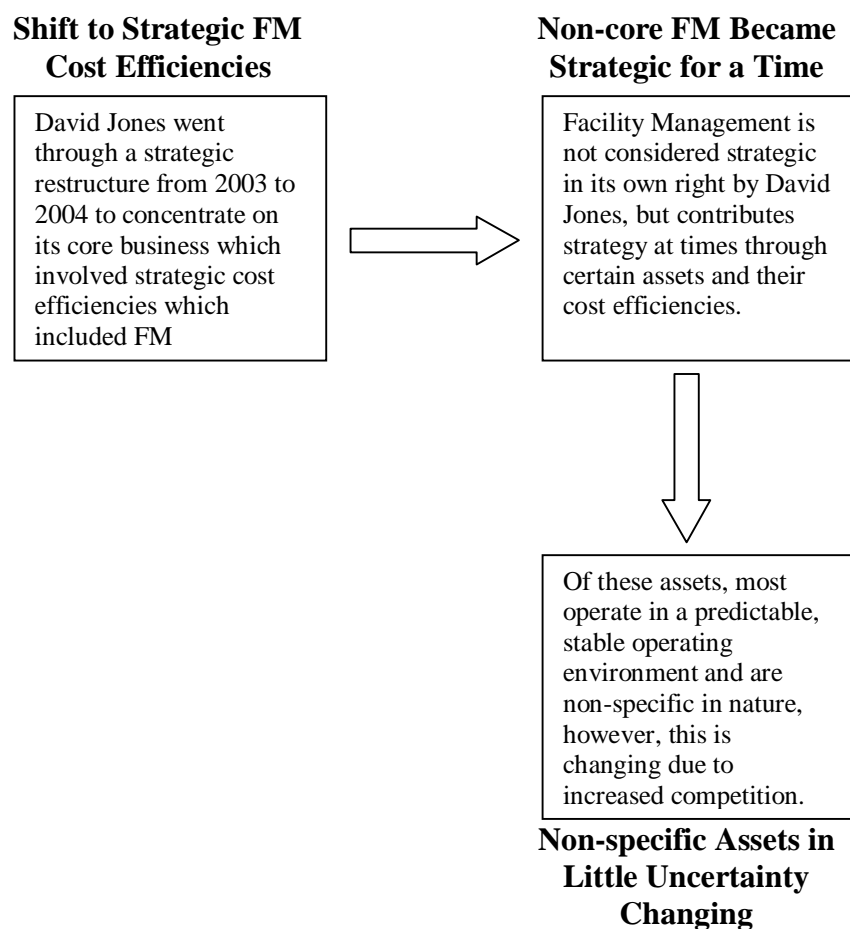
*Previously, I was not heavily involved in cleaning and waste management as they were handled by procurement; however, they are also important. All these services I mentioned are extremely important to David Jones because customer perception is important! They satisfy customer expectations of a David Jones store and the level of service and comfort provided.*

***How would you describe the environment in which they operate?***

*They are a critical part of the function of the store which can not function without them! They are all integral to our operation. Each one has degrees of impact, however, most have alternatives in the event of failure.*

***Of these assets, what is the likelihood of issues arising affecting their performance, and how often do you have to intervene to maintain their functionality?***

*An interruption to power is likelihood, becoming more and more likelihood due to a lack of infrastructure from the supply authorities. Mechanical services can become an issue due to poor quality of maintenance, age, and obsolescence, however, overall there is a small likelihood of issues arising affecting operations.*



**Flow Chart 21 – David Jones FM Contribution**

Therefore, it could be concluded that there originally existed little uncertainty in the operating environment for the assets managed under the FM Function for David Jones however, with increased competition and focus on “look and feel”, this is changing.

Certainly, on the whole, the managed assets were by nature not critical and certainly not strategic in their own right. Operating in a reasonably stable environment, it begs the question as to why the management of these assets was also not outsourced, that is, the centralised contract management. However, it also indicates why a push to insourcing took place.

### **DAVID JONES FACILITY MANAGEMENT IMPACT ON CORE BUSINESS**

Considering this, the core business (previously established as the core department store business) for David Jones would rely on the normal and ongoing operation of the facilities for continued trading. This normal and ongoing operation of the facilities in which the core business operates could be considered the “base line” in respect of supporting the core business’ ongoing operation.

Furthering this, evidence suggests that the FM delivery for David Jones has, at some point in time, either detracted from or improved the core competencies or competitive advantages of David Jones at some stage (as opposed to just maintaining the status quo) (this will be dealt with in more detail in subsequent chapters of this thesis).

According to *Richard Warburton, previous Chairman of David Jones*, David Jones considered its property portfolio as a strategic asset on the whole, which either contributed to or detracted from the core business:

The business that we took over in 1995 required a significant injection of capital to return the brand to its rightful position as Australia’s premium department store. We have over the past 7 years effectively rebuilt the brand from the ground up, including commencing our refurbishment program ... The effect of the extent of the unanticipated capital injection was unfortunately to cause a diminution of shareholder value in the short term. David Jones took the view that it was imperative to make this investment in the interest of delivering long term sustainable growth ... establishing a customer service program in our stores which provides significant competitive advantage (David Jones Limited 2002a, p. 2).

These comments seem to demonstrate that the core business could be affected by the property portfolio, even to the extent of affecting shareholder value and

providing a competitive advantage through customer service initiatives, to which the facility management function must play a part in some way<sup>61</sup> (refer to Flow Chart 22) This is further supported by the comments of *Peter Wilkinson, CEO of David Jones* in 2002 who stated:

We are increasing selling space in our most productive stores whilst at the same time improving the efficiency of store operation ... lowering the cost base and improving the ability of the store to contribute to profit ... Having successfully reduced our costs through the Securing our Future program over the last two years further work is now required in order to counter expected cost increases in areas such as insurance, food labelling and infrastructure going forward (David Jones Limited 2002a, p. 7).

He further adds that customer service is regarded as a critical component of the group's market positioning (value proposition), which includes how the stores "look and feel" (P12).

The reference to infrastructure and customer service with competitive advantage seems to further support the view that the FM function has the capacity to affect the competitive advantage of David Jones.

Considering that the major competitive advantage to David Jones was cost efficiencies at the time, any outsource provider bringing scale should be able to reduce this cost base even further, thus improving the competitiveness of the department store chain. However, partial outsourcing in this case may have reduced this potential cost efficiency from being fully realised.

### **FOODCHAIN FAILURE**

An example of this can be seen in 2001, when David Jones suffered an operating loss due to a "Foodchain" business on which David Jones embarked. This loss extended into 2002. This included the "write off of \$19.5 million of Foodchain, IT and store assets and development costs" (David Jones Limited 2002a, p. 5).

It could be argued that a proportion of the Foodchain failure could be indirectly attributed to the FM function, in so much as the concept was stopped pending certain "operational" issues which "are impeding our path to profitability" (David Jones Limited 2002a, p. 7)

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<sup>61</sup> FM is considered a source of strategic cost efficiencies.



And “Work continues towards being able to confirm the long term viability of the Foodchain concept by improving our systems, waste management and site selection processes”.

#### **FM Enhances the Brand**

Facilities are linked to the strategic branding of David Jones.

#### **FM Delivers Strategic Cost Efficiencies**

Also, FM has been seen to supplement strategy through infrastructure cost efficiencies. Also linked to increased competitive advantages (especially for the period 2003 to 2004).

#### **FM Cost Inefficiencies by Outsourcer**

Foodchain FM costs grew by 36.6% over a 3-year period – especially for the 2001/2003 fiscal year periods. This represented a \$1.2M overspend.

#### **Inefficient FM Hurting Business Outcomes**

The “Foodchain” stores suffered heavy losses, in which inefficient infrastructure played a role, partly blamed on the outsourcer’s inability to manage this type of infrastructure.

#### **Outsourcer Terminated over Quality Issues**

Quality of FM delivery also became questionable and FM was subsequently returned in-house. This was partially blamed on hollowing-out, with a loss of knowledge.

#### **Cost Blowout during Outsourcing**

FM spend for David Jones during the time it was outsourced increased by 10.7%, representing a \$1.1M overspend, impacting on the strategic cost efficiency program.

**Flow Chart 22 – David Jones Outsourced FM Delivery Affecting Core Business Outcomes**

The General Manager, Property and Projects stated the following in an interview on 3-12-04:

***In your opinion, why did the Foodchain business fail?***

*Lots of different reasons. The marketplace at the time, the level of sophistication that Foodchain was, the competitive nature of the food industry, it was an up-market operation with limited scope in a small market. There were premises location issues and issues with volume and cost of running the operation.*

***Did the facility management function play any part in this cause of failure?***

*No.*

However, the David Jones Leasing Manager (contract), who was the nominated David Jones business owner and manager of the FM Outsourcing transition at the time of Foodchain, claimed in an interview on 3-12-04:

***What was your involvement in the Foodchain business?***

*Initially, by default, I was the business owner for the “Securing our Future” program for Property, Projects and Logistics. This was at the time when an external consultant advised us to outsource our Facility Management function. Also, the David Jones Board decided to create stand-alone food halls, different to the existing David Jones food halls. I found some initial sites for David Jones, however, was not involved in the implementation apart from some lease negotiations.”*

***Which business units within David Jones were a part of the Foodchain implementation and operations?***

*I can only speak for the area I was involved with. That is, for Property and Projects, a food chain team was formed separate from Property and Projects, which was given a lot of authority. There was a nominated development manager from Property and Projects. The outsourcer for facilities management at the time did the facility management for the sites. The outsourcer advised that the Foodchain stores were demanding a lot of resources and needed intense support from them. Foodchain had different equipment to David Jones that caused problems for them (the outsourcer). There were problems with cleaning and general maintenance.*

***Out of these business units, which ones, in your opinion, contributed to the failure of the business and why?***

*The Foodchain management did because they had the wrong people running it at the store level. Expensive up-market delicatessen stores must have good on-site staff running them. Also, the site selection was wrong. They failed to operate effectively and were not good in a physical sense. The demand on the Facilities Management side was intense without the right resources. Foodchain also had their own buying department separate from the David Jones buyers!*

Also, according to the *Building Services Manager*, when interviewed on the 1-12-04:

***What was your involvement in the Foodchain business?***

*I had nil involvement in the set up. I took over the warranty management and the day-to-day maintenance (of the sties). The short lifespan of the Foodchain vision meant short term service agreements were put in place. I managed the outsource provider (of facilities management).*

***In your opinion, do you believe the facilities management function for this Foodchain business was effective?***

*Yes it was effective. We did, however, have a number of failures. We had culture problems with Foodchain staff on-site which meant operations were equipment-intensive. These staff were under pressure and caused damage to fixtures and fittings! They couldn't get enough sales and were a 12 x 7 operation with two shifts and low profit margins. That meant volumes were necessary and they just couldn't compete with larger supermarkets. Initially there was to be forty stores, however only five were opened. They had nineteen head office staff!"*

Certainly here, the reverse is true. Even within the realms of partial outsourcing, the specific and uncertain nature of the food chain assets were poorly managed by the outsource provider. This would have had the undesired affect of reducing the Foodchain model efficiency and subsequently adding to its demise.

***FM AFFECTS CORE BUSINESS COMPETITIVE ADVANTAGE***

Thus, it could be concluded from these statements that, although the FM function was not the cause of failure for Foodchain, the "operational" FM issues noted did contribute to the failure in part.

Thus, when considering the comments of the CEO, the issues surrounding property placement and "look and feel", and the related operating costs, when

combined with the failure of the food chain business, it can be suggested that the FM function for David Jones contributed to the diminishing competitive advantage during this time.

The financial data pertaining to the FM of the Foodchain business (period 2000 to 2004), reveals that the operating costs exceeded the operating budget for the facility FM-related functions. This seemingly supports suggestions that the facility function was becoming increasingly inadequate to support the business needs, as costs per store were increasing every year (refer to Table 9).

## FOODCHAIN

Facility Management Account	August 2003 to July 2004		August 2001 to July 2002		Aug 2000 to July 2001	
	Actual	Budget	Actual	Budget	Actual	Budget
Light and Power	\$532,098	\$0	\$503,316	\$204,000	\$93,217	\$129,049
Gas and Oil	\$6,130	\$0	\$21,508	\$24,500	\$4,188	\$5,402
Light Globes Replacement	\$11,078	\$0	\$5,316	\$24,500	\$0	\$12,604
Cleaning Materials	\$131,149	\$0	\$133,175	\$0	\$17,410	\$9,002
Contract Cleaning	\$248,201	\$0	\$159,776	\$147,000	\$39,255	\$49,997
Waste Removal	\$79,412	\$0	\$68,899	\$100,000	\$29,160	\$51,000
Sundry Occupancy Costs	\$5,783	\$0	\$6,670	\$0	\$720	\$0
Repair & Maint: Buildings	\$54,839	\$0	\$11,462	\$0	\$2,305	\$0
Repair & Maint: Lifts	\$10,873	\$0	\$1,198	\$0	\$878	\$0
Repair & Maint: Plt, Fixt & Fittings	\$46,414	\$0	\$36,800	\$88,000	\$2,293	\$7,230
Repair & Maint: Electrical	\$24,106	\$0	\$13,700	\$0	\$2,524	\$3,602
Repair & Maint: Air-conditioning	\$15,494	\$0	\$2,462	\$76,000	\$0	\$1,800
Repair & Maint: Refrigeration	\$50,036	\$0	\$16,257	\$84,486	\$844	\$1,800
Contract Maint: Buildings	\$0	\$0	\$729	\$0	\$0	\$0
Contract Maint: Electrical	\$1,474	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$1,217,087</b>	<b>\$0</b>	<b>\$981,266</b>	<b>\$748,486</b>	<b>\$192,794</b>	<b>\$271,486</b>
Variance to budget		-\$1,217,087		-\$232,780		\$78,692
No. of Foodchain Outlets		4		4		1
\$ per Store		\$304,272		\$245,317		\$192,794

**Table 9 – David Jones Food Chain FM Costs 2000–04**

However, as previously suggested, FM has also been attributed to the contribution of increasing competitive advantage for David Jones' shareholders at other times. Table 10 is a summary of both.

<b>YEAR</b>	<b>ISSUE</b>	<b>FM EFFECT</b>
<b>1995 to 2001</b>	Stores in need of significant refurbishment with large capital injection required.	Lack of facility upgrades – no preventive maintenance plans. Results in diminished shareholder return and loss of competitive advantage.
	Adjustments on store placement required.	Nil.
	Store operating costs high.	Maintenance spend not efficient. Results in excessive costs subtraction from capital growth initiatives, further reducing potential competitive initiatives.
	Cost efficiencies required	Savings realised on tighter management of maintenance spend. Savings reinvested to increase competition initiatives
<b>2001 to 2002</b>	Foodchain business failed	Unique on-site maintenance requirements not adequately met. Results in contribution to failure of the business.

**Table 10 – FM Delivery Effects on David Jones**

As another example, accepting that cost efficiencies are considered a strategic advantage by David Jones's executive management (refer to the CEO's previous comments) a review of the FM function spend for the rest of the David Jones business indicated those periods where cost efficiencies were realised or not realised (as can be seen from the cost of FM compared with budget and considering increase/decrease in Gross Lettable areas. Refer to Table 11)

Thus, when considering the approved budget for each respective year, the business could be said to have experienced periods in which competitive advantages were either enhanced or reduced as a direct or indirect result of the facilities management function, as performing "cost-efficient" FM was considered a strategic initiative by David Jones during these periods.

**August 2000 to July 2001**

Facility Management Costs		Actual	Budget	Variance	Total GLA*
<b>TOTAL</b>	\$47.60 /m2	26,810,166	27,483,006	672,840	563,250

**August 2001 to July 2002**

Facility Management Costs		Actual	Budget	Variance	Total GLA
<b>TOTAL</b>	\$51.91/m2	30,199,334	31,918,519	1,719,186	581,796

**August 2002 to July 2003**

Facility Management Costs		Actual	Budget	Variance	Total GLA
<b>TOTAL</b>	\$53.20/m2	31,530,119	30,737,965	(792,155)	592,644

**August 2003 to July 2004**

Facility Management Costs		Actual	Budget	Variance	Total GLA
<b>TOTAL</b>	\$52.85/m2	31,311,675	30,215,694	(1,095,980)	592,489

GLA = Gross Lettable Area of Stores

**Table 11 – Total FM Spend David Jones 2000 to 2004**

This is supported by the comments of Mark McInnes, CEO David Jones, and Robert Savage, Chairman of David Jones, as quoted from the David Jones Concise Annual Report 2004:

I am pleased to report that in the first full year since our Strategic Review program was launched in June 2003, significant progress has been made in restoring the investment fundamentals of our Company and in creating value for shareholders ... and is reflective of everybody's hard work and commitment over the past 18 months in focussing on our Company's core business and in implementing the Strategic Review initiatives announced in June 2003 (David Jones Limited 2004c, p. 1).

As previously stated, part of this strategic review aimed to look at cost efficiencies, in which FM was identified as a business unit that was to be included in this review.

As Mark McInness adds:

We made significant progress throughout the year in identifying and generating savings and efficiencies in areas such as non-merchandising procurement [includes all facility management accounts as listed in Table 7] ... Key non-merchandising supply contracts that were put to tender and generated significant savings in FY04 were in areas of ... lift and escalator maintenance (David Jones Limited 2004c, p. 8).

Certainly, during the term the outsourcer took over management of the Foodchain stores the cost per store to deliver FM increased. Foodchain was closed not long after. Should costs be a deciding factor in core business advantages, then this example illustrates an outsourcer's disadvantage

### ***OUTSOURCED FM CAUSING COST INCREASES***

Furthering this, as previously noted, for the period February 2002 to August 2004, David Jones outsourced its FM. One notable trend was that the approved FM budgeted costs were actually exceeded overall for the facility management account codes (refer to Table 11) during the time in which the outsourcer was responsible for this budget delivery.

However, for the periods prior to this, when FM was managed in-house, the budgeted amounts for FM overall were not exceeded. Thus, given that David Jones considered cost efficiencies, especially during this period, as a strategic goal, it could be said that the FM delivery during this period negatively affected, to some degree, the strategic objective.

As was seen with Foodchain, the overall outsourced FM function for David Jones also saw an initial cost increase over the previous year. This may have simply reflected transition costs, as in the following years, costs started to decrease. Ordinarily this may have been acceptable, however, during this critical period costs were considered a strategic indicator, thus overall core business advantages were considered to be at risk.

### ***HOLLOWING-OUT AND CONTROL LOSS***

There also seems to be supporting evidence that David Jones experienced a loss of substance within the company. That is, hollowing-out, as a result of outsourcing its facilities management function at the time.



According to the *General Manager, Property and Projects*, who stated during the interview on 3-12-04:

**In your opinion, when David Jones outsourced its facilities management, did this result in a loss of substance or structure from within David Jones as an organisation, either directly or indirectly?**

*Yes. There was a loss of control that really didn't have to be! The biggest problem was inadequate change management. There wasn't a critical loss, but definitely a small amount of internal loss.*

Also, according to the *Finance and Administration Manager* for the Elizabeth and Market Street stores, who has been responsible for the ongoing day-to-day operations of the stores for the last fifteen years, when interviewed on the 3-12-04:

***In your opinion, was there a loss of substance or structure from within David Jones as a result of outsourcing the facilities management structure?***

*Yes. Did affect our relationship with our contractors and suppliers. The cost of facilities went up and the best-practice initiatives went down! Therefore it did affect David Jones.*

This seems to support the argument that some hollowing out took place affecting core business strategies at some point.

The *Store Manager for Glen Waverly* indicated via a post-implementation review of the outsourced FM arrangement in mid-2002, that:

When damage was done to our escalator through misuse by one of our own staff) [the outsourcer] was not committed to ensuring that the costs (and time) to David Jones were minimised. We had to wait five days for escalator parts to be sent from Sydney. A company that had our best interests at heart, and was not prepared to accept second-best, would have ensured that the problem was fixed in less than 48 hours. Our store traffic was affected, one escalator did not run in our store over the weekend and for three week days, but it was only when the store manager escalated to the [David Jones] Regional General Manager that we got the response we required.

This, plus other comments made by David Jones staff, that the in-house teams were more accommodating than the outsourcer for specific portfolio issues (refer to subsequent discussions), seem to indicate that some hollowing-out may have taken place that may have affected the overall realisation of the strategic cost efficiencies previously outlined by the CEO of David Jones.

The control loss is to be expected and desirable under true outsourcing arrangements. In this case, however, a perception of hollowing-out was developing in David Jones. This could be attributed to a lack of ownership transferred across to the provider. The escalator referred to in the previous remarks of the Store Manager, was, in fact, still under the ultimate control of the in-house central management team.

#### **6.4.2 FACILITIES MANAGEMENT SCOPE**

##### ***WHAT IS FM TO DAVID JONES?***

When considering these issues, the range of the FM services (refer Table 7) has not significantly changed since 1990. Project and development work have never formed part of the FM function for the company.

According to the *General Manager, Property and Projects*, who stated during the interview on 3-12-04:

***During your time as General Manager of the Property and Projects area, has the core facilities management function increased or decreased in scope?***

*Increased due to more emphasis on cost control and an increase in regulatory authority requirements.*

***Have you ever considered retail project work as part of the facilities management function?***

*No.*

So these adverse outsourcing outcomes can not be attributed to a change to infrastructure and its operating environment. That is, there was no scope increase during the outsourcer's contract other than a major focus shift onto cost control.

However, should the outsource provider have had ownership of the contracts as well, then further scale advantages and other advantages may have compensated for transfer losses (hollowing-out).

## **SLA MANAGEMENT**

Service level agreements (SLAs) have been in place for all of the FM categories listed in Table 7 which are marked as contract accounts. Each contract has an individual set of SLAs in place. However when David Jones outsourced its FM function in 2002, there were overriding service level agreements set for the management of these services as a whole (David Jones Limited 2002b); (refer to Table 12, and refer to Appendix 1 for a complete list of SLAs).

These outsourced SLAs are considered simple, in that they do not go into any great detail around each specific category listed in Table 7, however, there are a large number of them when each individual contract is considered (refer to Appendix 1).

According to *the Building Services Manager* during the interview on the 1-12-04:

***Do you consider the service level agreements that were in place for the outsourcer under the contract to be simple or complex? Why?***

*The intention was for them to be simple, however, the outsourcer made them complicated. The outsourcer created red tape, the contractors then became frustrated.*

***Do you consider that service level agreements in place for individual service providers are simple or complex? Why?***

*Simple. Was intentional to be made simple. I was responsible for drafting them. The more complex they are the more grey areas and the more discrepancies. The service companies must have a reasonable dollar return to make them work.*

According to the *David Jones Leasing Manager* (contract), who was the nominated David Jones business owner and manager of the Facility Management Outsourcing Alliance chairman (a group set up to implement the outsourcing strategy), when interviewed on the 3-12-04:

***Can you explain the process that took place when the SLAs were formulated for the outsourcer?***

*Negotiated with the potential outsource providers. The successful outsource provider had KPIs in their submission which we accepted. They were not altered.*

***Do you consider the Service Level Agreements in place for the outsourcer to be simple or complex? Why?***

*They were adequate, but there was failure in the management of them. They were fairly simple SLAs, however, David Jones did not manage the outsourcer's management of them! A management committee, the Alliance, was set up but allowed to die off.*

<b>Description of Service</b>	<b>Outsourced Service Level Standards</b>	<b>KPIs</b>
<b>Building Structural</b>	Ensure appearance, condition and function of building fabric is maintained or enhanced.	No Decrease in asset/system performance or standard. No upward trend in reporting work order request issues as measured by the property call centre. No breaches.
<b>Mechanical Services</b>	Ensure performance, condition and function of building fabric is maintained or enhanced. Ensure all statutory and legal requirements are met.	Ditto
<b>Electrical Services</b>	Ditto	Ditto
<b>Hydraulic Services</b>	Ditto	Ditto
<b>Fire Services</b>	Ditto	Ditto
<b>Energy Management</b>	Monitor, analyse, manage and report on energy usage. Minimise consumption without negative operational impact on each site.	More than 90% of property energy reports submitted within 14 days after quarter end and no later than 21 days. More than 95% of properties have annual increase in energy consumption/demand and 5% have a decrease.
<b>Cleaning Services</b>	Ensure satisfactory cleaning standard.	No upward trend in reporting work order request issues as measured by the property call Centre. No breaches.
<b>Landscape</b>	Ensure appearance and condition of landscape areas is maintained or enhanced.	No decrease in asset/system performance or standard.
<b>Essential Services</b>	Ensure properties have been certified annually per statutory requirements.	More than 90% of properties annual certification completed on or before the required date within past 12 months and all properties completed within past 14 months. (verify with building owners).

**Table 12 – Extract of Service Levels for the Provision of Outsourced FM Services  
– David Jones Contract Agreement 2002.**

Similarly, for each of the *individual* contracts for the facility management services listed in Table 7, each contract has its own SLAs specific to its service type. The SLAs are also regarded as simple. For example, for the Contract Maintenance Air Conditioning contract, the SLAs are simply stated as:

A Problem Severity Level of 1 will be assigned for any fault which is reported by David Jones or their Principal Nominee and which is preventing David Jones from conducting its normal business. For each such occurrence, the Vendor will provide a response time of one hour from lodgment of call and a Resolution Time of two hours, three hours for a priority level 2, 24 hours for a priority level 3, and 72 hours for a priority level 4 (David Jones Limited 2003a).

These contracts, and therefore the SLAs, were managed directly by David Jones until January 2002 (refer to Figure 9), when they were then handed over to the outsourcer to manage under the umbrella SLAs, as previously mentioned (refer to Figure10).

So even though the SLAs were simple, there was evidence of mismanagement by the outsource provider. However, as previously stated, ultimate control and responsibility seemed to still rest with the David Jones's centralised contract management team. Thus it is doubtful that the outsourcer provider could have adequately managed the contracts anyway. This is especially so in an environment where cost efficiencies are being increasingly required. It simply did not have commercial control over each individual contract.

#### **6.4.3 DAVID JONES FACILITIES MANAGEMENT STAFFING**

##### ***BOUNDED RATIONALITY***

There was no change to the individual SLAs or the FM Service categories listed during transition to the outsourcer.

Stores staff are not considered FM technical specialists, however, the David Jones centralised property staff (who are responsible for the overall contract management of SLAs) are considered qualified property personnel.

Stores staff are day-to-day managers, whereas the David Jones Head Office property staff are mainly managing the major contracts centrally, and were considered project-orientated managers. Both were responsible for the management of all the categories listed in Table 7, whereas the Stores staff were responsible for the day-to-day delivery of the services in the main.

According to an internal document entitled “Securing our Future – 26-02-01”, David Jones performed an internal analysis of “Centralised Contract Management – Repairs, Maintenance and Energy”, which led to the outsourcing of the facility management functions.

The findings included:

Central Property Management have acknowledged for a number of years the decline in quality of David Jones’ property portfolio ... Some Stores Finance and Administration Managers have recognised a lack of knowledge and resources in dealing with energy, cleaning and maintenance services. Some F&A Managers expressed frustration with regard to a lack of knowledge of contract arrangements ... Many stores have local arrangements for minor repairs, maintenance and modifications ... as a result the quality, reliability and price of these services varies considerably. In some instances the compliance with statutory requirements is questionable and places David Jones at risk ... David Jones has acknowledged that current central repairs and maintenance management capability is below what is now required to deliver the savings and quality required (David Jones Limited 2001c).

This would suggest a level of bounded rationality within the in-house delivery of facilities management services for David Jones at the time, when there was simply not enough time, resources, and expertise to adequately provide the necessary FM Delivery.

According to the *Finance and Administration Manager* for Market and Elizabeth Street Stores, when interviewed on 3-12-04:

***When you were responsible for managing the facilities in-house, were there any valid reasons, in your opinion, for outsourcing the function?***

*Yes, based on financial advantages and the utilisation of specialist professionals. Our core business is not building buildings. It was my understanding this would take us to the next level. It would help us manage the contractors.*

***What benefit, if any, did the outsourcer bring into the facilities management function that David Jones could not perform themselves?***

*They managed our workmen, so industrial relations were their responsibility. They also had a high workplace safety ethic. We were not good at these two things.*

***In your opinion, what type of skills are necessary to adequately perform the facilities management function for David Jones in-house?***

*Some exposure to the operational side of running a business, not specifically retail. Just to be a good business manager, fiscally astute with good people skills (contractors and customers). You do not need to be an engineer. There is a difference between technical skills and competencies.*

***Have you had any formal training in managing facilities and related services?***

*No formal training but I have been a part of operational teams my entire career. I have experience in multidiscipline operations. I have also completed some project management courses.*

According to the *Building Services Manager* during the interview on the 1-12-04:

***When you were responsible for managing the facilities in-house, were there any valid reasons, in your opinion, for outsourcing the function?***

*Yes. The main reason being the lack of internal expertise in the field of Facilities Management.*

***What benefit, if any, did the outsourcer bring into the facilities management function that David Jones could not perform themselves?***

*We went from a fragmented structure to a centralised control of our Facilities Management. They brought technical expertise and utilisation of I.T. which we did not have before. There was also a reduction in costs in FM services overall. They enabled us to reduce our staffing levels without going through HR processes for retrenchments. However, we did lose a lot of good people too!*

***In your opinion, what type of skills are necessary to adequately perform the facilities management function for David Jones in-house?***

*Practical general knowledge across a broad range of services.*

***Have you had any formal training in managing facilities and related services?***

*Yes, management training, a Degree in Marine Engineering – Electrical and Mechanical, and thirty years' experience in managing facilities."*



Thus it could be concluded that during the in-house period of facility management, the overall combined skill set of the management of the facilities was considered generalist and multidisciplinary in nature, with some degree of bounded rationality.

There can be no doubt that the outsourcer's staff were specialised whilst the existing in-house team was not. There was a need to outsource based on the need to increase the FM delivery.

### ***SPECIALISATION OF OUTSOURCE PROVIDER***

The outsourcer's staff, however, for the period when David Jones outsourced its facilities management, were considered specialist facility managers.

According to the outsourcer's successful tender bid:

We have nominated an outstanding team to work in a dedicated fashion to this contract. They are experienced in operating in a multi site environment using new technology... [We are] a committed contributor to the facilities management industry ... Our National Operations Manager is a member of the FMA board, our senior staff regularly lecture at Degree courses and conferences (David Jones Limited 2001a).

From these comments it could be concluded that the outsourcer's staff were specialists in FM.

In 2002, the outsourcer presented an information session to David Jones staff, outlining the services to be undertaken for all the FM Accounts listed in Table 7.

They included:

1. FM planning and budgeting
2. Lifecycle costing
3. Building maintenance and renovations
4. Procurement
5. Strategy for assets register
6. Maintenance strategy
7. Co-ordination of work
8. Audit third-party providers.

These specialised initiatives were introduced into David Jones where they never previously existed. This would add value, even if not initially reflected in a reduction of dollars per square metre of property occupancy for the FM budget. More non-financial benefits would have existed.

### **DECLINING SKILL SET AND STAFF NUMBERS**

According to a synopsis of the staff employed by the outsource provider, many of the regional managers hold qualifications in more than one discipline, and usually have project management experience. For example, the NSW Facilities Manager has qualifications in electrical, refrigeration and air-conditioning mechanics, with project management experience in managing new building fit-outs to the value of \$11 million dollars.

The position descriptions for the State Facility Managers state that the minimum requirements for job knowledge for the role are:

Suitable trade qualifications (electrical/mechanical) and have a minimum of four years' commercial management and supervisory experience, maintenance experience covering a broad range of installations and equipment types and uses, large organisation and/or government experience is desirable, leadership experience in the building/maintenance industry (David Jones Limited 2000b); (Refer to Appendix 1).

According to the *Building Services Manager* during the interview on 1-12-04:

***How would you describe the skills and experience of the outsourcers staff?***

*Mixed, in the end they were using contracted labour hire people and quality was questionable. It came down to the level of finances they had. They had to get multidiscipline skilled generalists to do the role. Most of the good ones are self-employed. Initially they were much better than the end. They just couldn't get staff!*

***Do you believe they were sufficiently qualified and experienced to perform Facility Management for David Jones?***

*You have to consider them on an individual basis. In the end there was no leadership and direction. In the beginning yes. At the end no.*

According to the *Finance and Administration Manager* for the Market and Elizabeth Street Stores, when interviewed on 3-12-04:

***How would you describe the skills and experience of the outsourcers staff?***

*Their experience was not necessarily in Facilities Management! They were heavily contractor-based. A lot of guys assigned here were on short-term contracts.*

***Do you believe they were sufficiently qualified and experienced to perform Facility Management for David Jones?***

*The issue was with the State Facilities Managers higher level managers! They would just turn up here but I doubt if anyone knew from their head office what was going on! Time was spent training them up in the store and they would leave not long after anyway! Each manager who left commented that it was not the job they had expected. They did not seem to have the office skills and therefore felt trapped in the paperwork. The reports overcame them.*

This would suggest that the outsourcer's staff were considered multidisciplinary and project-orientated contingent workers.

Since the outsource contract began, there were numerous staff changes within the outsourcer's function.

At the beginning of 2002, there were ten full-time and fully employed persons assigned specifically to manage the David Jones account by the outsourcer. By 2004 there were only seven full-time and fully employed persons, and two part-time persons employed to manage the David Jones account, one of which was a stand-in National Account manager. Many of the remaining staff were not the original staff.

Conversely, there was little staff movement within the in-house staffing structure prior to outsourcing, except for transferred staff.

According to the *Building Services Manager* during the interview on 1-12-04:

***In your opinion, were there sufficient staffing numbers to satisfy the requirements of the outsourcing contract?***

*No! Not even from day one. They were two to three people short to satisfy the initial agreed contract service levels.*

***Did you experience staff turnover whilst managing the outsourcer? And why, in your opinion, was there staff turnover?***

*Yes, because of the excessive workload and associated stress and pressure that goes with that. The outsourcer would work them hard – on call seven days per week! This stressful environment was the way the outsourcer operated.*

However, even though the outsourcer brought in specialisation, the staff were rotated, to the point of becoming semi-permanent. Eventually this would add cost to an organisation through re-learning, additional site inductions, knowledge loss, etc.

### **STAFF CONDITIONS DETERIORATED**

According to the *Finance and Administration Manager* for the Market and Elizabeth Street stores, who stated during the interview on the 3-12-04:

***In your opinion were there sufficient staffing numbers to satisfy the requirements of the outsourcing contract?***

*In the beginning yes, they took on our people. In my opinion the staffing conditions were bad from the outsourcer. Two went off on stress within a month. If the outsourcer managed their staff to success then it would have worked. They did not encourage their staff for success.*

***Did you experience staff turnover whilst managing the outsourcer? And why, in your opinion, was there staff turnover?***

*Yes, working conditions were no good from the outsourcer. There was stress and no encouragement. We experienced a turnover in the outsourcer's management and on-site workforce. It was a whole negative vibe!*

This would seem to confirm that there was difficulty in fulfilling the requirements of the outsource contract with adequate staff, even from the beginning of the contract (refer to Flow Chart 23). However it also indicates that David Jones store management were becoming more educated to best-practice FM, as both increased focus on the function intensified, and the outsource provider's process was embedded.

A post-implementation review undertaken by David Jones (2002d) six months after the outsourcer took over the FM, seems to confirm this:

It seems that we are managing the [FM] Managers who are supposed to be managing the people doing building repairs and presentation (Market St Store F&A).

Whilst I would like to continue our involvement with [the outsourcer], some changes are required and am hoping with the appointment of a new [state-based] Facility Manager most of our issues will be rectified (Westlakes F&A Manager).

At the moment [the outsourcer] has increased my work load. However, I believe that as [the outsourcer] start to get familiar with stores and their needs they will improve. They probably need more manpower (Wollongong F&A Manager).

According to a joint information bulletin which was circulated internally and produced by David Jones and the outsourcer in October 2002, the outsourcer's performance was, indeed, affected by staffing issues:

In retrospect it would be fair to say that there have been some settling in difficulties following the implementation of our facilities management operations, but looking forward positively we can anticipate further improvements to services being provided by [the outsourcer] ... These improvements will be achieved through planned changes in management structure, personnel and processes procedures currently being implemented as a direct response to constructive feedback from our stores (Anonymous 2002).

One reason attributed for this turnover of outsourced staff was the staffing conditions and the working environment in which they worked.

Notification to David Jones by the outsourcer of indefinite leave taken by staff due to stress-related illness occurred on four occasions (one Victorian State Manager in 2002, one South Australian transferred carpenter in 2002, one NSW State Manager in 2003, and another NSW State Manager in 2004).

According to an internal e-mail sent by the outsourcer to David Jones (2002d) on 29-8-02:

[a staff member has just resigned ... and] there is a strained work relationship and workplace environment and he feels he does not need the added stress and worry .

According to the *Building Services Manager* during the interview on 1-12-04:

***From your observations of the outsourced staff, how would you describe the environment in which they worked, and the conditions under which their company operated?***

*The office facilities were good, but this was supplied and paid for by David Jones! They were stressed by the way they operated, trying to fit into the financial constraints of the contract. They did not have the funds to get more staff. They underbid for the contract and relied heavily on project work to supplement their income from the contract.*

***In your opinion, did these conditions contribute to staff turnover?***

*Yes, but it wasn't the sole contributor. It was mainly due to the high level of workload and no head office support. David Jones tried to intervene and encourage the outsourcer to provide additional support for their staff but we were not successful.*

According to the *Finance and Administration Manager* for the Market and Elizabeth Street stores, when interviewed on 3-12-04:

***From your observations of the outsourced staff, how would you describe the environment in which they worked, and the conditions under which their company operated?***

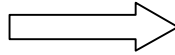
*A negative vibe. Stressful. Managers did not know how to channel their stress and it spilled over David Jones staff! The outsourcer's staff were committed but the stress got to them in the end.*

***In your opinion, did these conditions contribute to staff turnover?***

*Yes.*

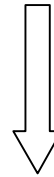
**In-house FM Staff Were Generalists**

Stores staff were considered generalists with some degree of limitations in their skill sets to achieve the desired outcomes so it was outsourced.



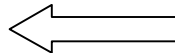
**Outsourcer Managed under Simple SLAs**

Outsourcer's SLA's were simple, and were managed by a central in-house management team.



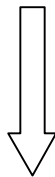
**Outsourcer's Staffing Retention Rate Poor**

Staff turnover was high and staff numbers were reducing over time. This was attributed to a stressful working environment created by the outsource provider.



The outsourcer's staff are specialist and project-orientated personnel, with some being contingent contracted workers, however, eventually skill sets were becoming questionable.

**Outsourcer's Staff Specialist but Skills Declined**



Conversely, this turnover was not experienced with FM staff when performed in-house.

**Little to No Staff Turnover when Inhouse**

**Flow Chart 23 – Staffing and Management Dynamics**

Conversely, the lack of turnover for in-house staff during the time when David Jones controlled its FM is attributed to a good working environment.

According to the *General Manager, Property and Projects*, who stated during the interview on 3-12-04:

***Can you describe the working environment and conditions in which staff managing the facilities operated when it was performed in-house by David Jones?***

*It was simply done within the stores group. They were not overworked. There was a mixed variety of work.*

***When David Jones performed facilities management in-house, did you observe much staff turnover in those managing the function and why?***

*Not really. There was a big turnover in some staff areas but this was a company-led initiative. Example is when we retrenched 35 FM staff when we took over the John Martin's Department Store chain.*

According to the *Finance and Administration Manager* for the Market and Elizabeth Street stores, when interviewed on 3-12-04:

***Can you describe the working environment and conditions in which staff managing the facilities operated when it was performed in-house by David Jones?***

*We had employees who were in the company long term who resisted change. But David Jones work with their staff fair so we had little absenteeism. Staff loyalty was high. Accident rates were also low. If I had to get them to do work outside their job description, they would do it without push back. Even when we outsourced the maintenance staff the transition went reasonably well.*

***When David Jones performed facilities management in-house, did you observe much staff turnover in those managing the function and why?***

*No.*

There is now little doubt that during the first two years of outsourcing, staff conditions were in a downward spiral.

The question is how the rate of decline is affected by changes in the operating environment, which make outsourcing less viable. In David Jones's case it seems the



rate of decline was accelerated due to a shift in the focus of business as usual to strategic cost efficiencies. This would have changed the dynamics in favour of insourcing, with intensified senior management scrutiny.

### **QUALITY QUESTIONED**

Not only was there a high turnover of staff for the outsourcer, there seems to be evidence that there was also difficulty in placing adequate staff into the roles (thus the vacancies in 2004).

One reason given for this difficulty in placing adequate staff was that David Jones was not completely satisfied that the outsourcers FM staff were suitable for the services required. There were suggestions that David Jones in-house staff were actually better at providing the management of facilities services listed in Table 7. As previously mentioned, this can also be attributed to an increase focus on the FM function and by learning from the outsourcer's embedded processes. The post-implementation review undertaken by David Jones (2002d), seems to support this:

There has been no increase in the standard of service we receive in store (Wollongong F&A Manager).

All in all the store looks no better, and at times worse, and I am less informed and less happy to be associated with this standard ... In summary, the road blocks that are now being experienced make managing maintenance and repairs more difficult, time consuming for what seems to be no improvement, and in some cases worsening standards in the store (Market Street F&A and Store Manager).

It would appear that [The outsourcer] makes the general maintenance requirements more difficult, however the FM knowledge and expertise in the technical side of maintenance and plant and equipment is far superior than what we previously had (Store Manager, Chadstone).

Compared to [our in-house team], I see no realised benefits either financially or operationally. Operationally we have the same level of involvement, requesting the work, meeting workmen, showing them jobs etc. (F&A Manager, Bankstown).

On the surface it would seem that [the outsourcer] are doing their job, they are technically equipped to resolve technical issues and are able to supervise providers in a professional manner ... [however, they] seem to find it difficult to meet our needs in a timely manner ... OH&S issues require immediate attention not when there is sufficient number of jobs to warrant a visit from a contractor (F&A Glen Waverly store).

[The outsourcer's] Facilities Managers for Queensland lack of experience and knowledge in the retail environment has hindered the smooth transition of the facilities management (Carindale F&A Manager).

According to the *General Manager Property and Projects*, when interviewed on 3-12-04:

***As the overall manager responsible for managing the outsourcer, were you satisfied with the skill and experience of the outsourcer's staff?***

*Generally no.*

***In your opinion and observations, did the skill level and experience of the provider's staff remain constant throughout the contract?***

It varied because there were a lot of changes in staff. It generally went down as the contract rolled on. They did not put the infrastructure in place from day one.

According to the *Building Services Manager* during the interview on 1-12-04

***As the manager responsible for managing the outsourcer on a day-to-day basis, were you satisfied with the skill and experience of the outsourcer's staff?***

*Yes at the beginning, not at the end. As an example our capital management suffered because the outsourcer failed to provide correct timely information.*

***In your opinion and observations, did the skill level and experience of the provider's staff remain constant throughout the contract?***

*No, it went on a downhill slide. The enthusiasm also waned.*

It therefore seems that the outsourcer was unable to satisfy David Jones that staff were adequate for this account management. This then led to a shortage of suitable candidates for the vacant positions, even though the outsourcer's current staff

were considered “technical specialists”. It is also evident that there were insufficient resources to satisfy the outsourced FM contract, which further declined over time.

So there existed a definite perception of quality reduction. This supports the argument that outsourcing in itself can not be seen as a means to increase quality of service delivery, especially in a dynamic and changing operating environment.

#### **6.4.4 DAVID JONES FACILITIES MANAGEMENT DELIVERY**

##### ***MONOPOLY CREATING COSTS***

As previously indicated, the outsourcing contract was terminated by David Jones on 24 August 2004. The termination was given without default (that is, terminated for convenience by David Jones under the provisions of the contract, without any reference to lack of performance). As part of a “cost efficiency” and “centralisation” strategy, David Jones brought the FM function back in-house (refer to Figure 12).

According to the outsource contract David Jones Limited (2002b):

[For any reason] David Jones may terminate this Contract by giving to the Vendor ninety (90) days notice in writing (Clause 19.3).

There was no provision within the contract for part termination of services. It was all or nothing:

If the Vendor fails to fulfil or is in breach of any of its obligations under this Contract (other than service levels) and does not rectify ... then ... David Jones may terminate this Contract (Clause 19.1).

David Jones was unable to alter the service levels and/or service provision in part.

The process of deciding whether or not to take the function back in-house started approximately two years after the outsourcing contract began. During the last twelve months of the contract, David Jones attempted to seek alternative delivery methods for delivering “part” of the facilities services categories listed in Table 7.

These alternatives were not effectively implemented or supported by the outsource provider. The change process was completely managed by David Jones.

For example, David Jones was not happy with the choice of the cleaning provider put forward by a tender process initiated by the outsourcer. The result was that David

Jones re-tendered the cleaning services, and removed the cleaning contractor. This was so even though this function came under the direct management of the outsource provider.

According to the *General Manager, Property and Projects*, when interviewed on 3-12-04:

***Why did David Jones decide to re tender the cleaning provider that was originally put in place with the help of the outsource facilities management company?***

*Due to performance issues of the cleaning contractor. We were not satisfied with their services.*

***Did you involve the outsource provider, and were they willing to co-operate?***

*We tried to involve them but they were not interested in co-operating.*

According to the *General Manager of Procurement*, when interviewed on 1-12-04:

***As the overall manager for cost efficiencies, did you involve the outsource provider of facilities management services in your strategies?***

*No. We did ask them what they did, if they took anything to the market, what they want to do, and what they have not done. I didn't find any areas of cost savings. They were involved in implementations.*

***Did you find them co-operative, and were you able to change their service delivery without penalty to David Jones?***

*They were not co-operative and were unwilling. They were unable to co-operate, they did not have the information systems they said they had. They took mechanical services to the market, however, we had to take it off their hands which meant a double-up of management time.*

***In your opinion, what additional costs did David Jones incur as a result of the inability to use the outsourcer's services to alter key result areas?***

*Cost everywhere! There were risks generated by our cleaning contract because of their lack of information required on the cleaning contract. There were risks with the Mechanical Services contract as we had to take over and redo the contract without the outsourcer. It would have cost us about \$200,000 in extra management time because of a lack of the*

*outsourcer's involvement. And it cost us millions because they were not flexible in their key result areas!*

As David Jones was unable to reduce the outsourcer's management of this service (as per the contract provision), David Jones incurred additional costs by seeking alternatives and managing them themselves, or in association with the outsourcer's usual costs.

According to the *Building Services Manager* during the interview on the 1-12-04:

***In your opinion, were you unable to alter the services of the outsourcer without incurring additional expense?***

*Yes, we were unable, however, we actually got what was agreed to under the contract. We couldn't get additional resources though. David Jones wanted to throw money at it but the outsourcer said that they could do it under the existing arrangement. Their fees would not reduce so we couldn't take away any services or we would have to pay twice!*

***Can you give me any examples?***

*We paid for them to do accruals as they were not doing it correctly. They took it in under duress and became contentious and it became an argument from that time on.*

This would suggest that there did exist a type of monopoly of FM provision, whereby David Jones was unable to steer or change the management of facilities without financial penalty (in the form of double management of services).

It is now clear that the contract for outsourcing binds David Jones in such a way as to be unable to alter outcomes without paying twice, should scope be changed. This became more evident as time went on. Obviously this was the perfect staging-ground to invoke uncooperative behaviour from the outsource provider. It is at this stage that opportunistic initiatives from the provider would be introduced.

It is highly unlikely that this situation would have arisen if a focus onto strategic cost efficiencies had not taken place.

## **CONTROL LOSS**

This is also reflected in the perceived lack of control over FM delivery during the outsourced contract by David Jones. When asked "*Do you have any comments on the effectiveness of [the outsourcer] compared to the previous in-house delivery?*" under

the post-implementation review undertaken by David Jones (2002d) the respondents revealed that:

We no longer feel we have control over this [FM] expenditure when we have a responsibility for items hitting our P&L (F&A Manager, Garden City, Western Australia).

Seems to be an issue with Financial Accountability. [The outsourcer] has control over maintenance spending, however we are still accountable for bottom line inclusive of the expenditure (F&A Manager, Marion, South Australia).

I feel that there was resistance initially due to the feelings of not being in control of the budgets and the impact on the stores net profit. I also feel that [the outsourcer] came into the business with an attitude of supreme confidence and they failed to recognise the capabilities of the people within the store and tried to operate independently without involving the store ... I feel that we are no longer in control of the charging due to the timing of the off charging, and it is difficult to access what is outstanding in dollar terms (Store Manager, Queen Street, Brisbane).

In theory there should be only one point of call for most administrative issues, but we would have to say that there has been no significant change in the management of our facilities since the introduction of [the outsourcer]. In fact, when the follow-up was the responsibility of the administration manager, we at least felt more control over time taken to fix any problems (Store Manager, Glen Waverly).

According to the *Finance and Administration Manager* for the Market and Elizabeth Street stores, who stated during the interview on 3-12-04:

***In your opinion, do you believe that David Jones experienced an increase or decrease in control over the facilities management function when it outsourced it and why?***

*A decrease in control. Also, a decrease in knowledge and transparency.*

***Was this change for the better?***

*I believe that the principles of the change were for the better. When we had a good State Facility Manager it really made a big difference. It allowed us to get on with the running of the store, however, it was only for a short time.*

According to the **General Manager, Property and Projects**, when interviewed on 3-12-04:

***In your opinion, do you believe that David Jones experienced an increase or decrease in control over the facilities management function when it outsourced it and why?***

*We experienced a decrease in control.*

***Was this change for the better?***

*It was worse for the company. David Jones could have improved this, however, if we were more diligent in our management of the outsourcer. We gave them too much control without checks and balances.*

This would suggest that David Jones felt that some control was lost when it outsourced the FM function.

This definite control loss, combined with some hollowing-out and monopoly from the outsource provider seemed unavoidable under the changing operating environment and would have affected David Jones more and more as time progressed.

Once again, it is highly unlikely that control loss would have been raised as an issue, as outsourcing almost always involves handing over control. Control loss on strategic functions, however, would be an issue. FM became partially strategic under the strategic cost-efficiency program, as previously stated.

**OPERATIONAL FLEXIBILITY LOSS**

This inability to easily change or alter the services without costs, and a loss of control when considering the comments above, also seems to indicate a level of inflexibility of FM delivery as a result of the outsourced contract.

Notwithstanding the limiting terms of the contract (as explained previously), where the provision of FM services could not easily be modified in part by David Jones, there were also inflexibility issues on a day-to-day basis, when compared with the previous in-house method of delivery.

According to the post-implementation review undertaken by David Jones (2002d), the respondents further revealed that:

Compared to pre [outsourcing] days I see no realised benefits either financially or operationally. Operationally I have the same level of involvement. Requesting the work, meeting workmen showing them jobs etc. At this stage the follow through is poor with many smaller jobs still outstanding (F&A Manager, Bankstown).

To date I have not seen any saving in the time spent by myself in managing the R&M function in the store. The process is more time consuming and required more follow-up (F&A Manager).

The process for repairs and maintenance takes longer as a third person is involved. Subsequently making the process more time consuming for the Store Finance and Administration Manager". (F&A Manager, Carindale).

Too much delay in getting work done. [The Outsourcer] adds an extra layer in organising things and this has only seemed to slow things down and add some confusion (F&A Manager, Eastgardens).

Still lack urgency to complete "now" works in time frame required. Very time consuming from a Stores point of view. When Stores had their own maintenance crew that knew the Store, work was completed in a minimum amount of time (F&A Manager, Kotara).

According to the *Building Services Manager* during the interview on the 1-12-04:

***In your opinion, do you believe that David Jones experienced an increase or decrease in control over the facilities management function when it outsourced it and why?***

*A decrease in control, because we were not getting the information in a timely manner from the coal face. Information was coming in third-hand and even incorrect sometimes. They were supposed to be our eyes and ears, however, it didn't end up that way.*

***Was this change for the better?***

*In hindsight, no. A lot of staff expectations that initially looked good then peaked but went downhill very quickly after twelve months.*

***In your opinion and observations, on a day-to-day basis, what comparisons can be made with the in-house facilities management***



***and the subsequent outsourced facilities management when considering flexibility?***

*It was not flexible when outsourced. There was more flexibility in-house because we had local people dealing direct with contractors. In short, it's about response and feedback! The third party was a cog slowing down the process. The contractors were being divorced from David Jones via the outsourcer.*

It can therefore be concluded that there was both control and flexibility loss on an operational level.

The benefits of the high-level flexibility in transferring staff should therefore not be confused with a trade-off of operational flexibility loss and control loss, which is evident in the David Jones case study.

***HIGH-LEVEL FLEXIBILITY INCREASE – TRANSFER LEVERAGES***

On an overall strategic level when compared to the previous in-house delivery of the facility management services, there seemed to be some increased benefits to David Jones with regard to control and flexibility.

The F&A management structure (which performed most of the previous in-house management of facilities for its respective stores) did not alter in staffing numbers or Key Performance Indicators as a result of outsourcing. The same can be said for the in-house property team. There was also no change to the in-house property staffing structure.

However, there were eighteen transferred in-house maintenance persons who moved from David Jones over to the outsourcer (refer to Table 13).

This indicates that there was a level of bureaucracy that was removed from within the David Jones organisation as a result of outsourcing the FM function. This “transfer of staff” gave David Jones both the flexibility and control to address this layer, which would not have been made available under “business-as-usual” conditions.

According to the internal document entitled “Securing our Future – 26-02-01” (David Jones Limited 2001c), these benefits were identified prior to awarding the outsourcing contract, and form part of the business case recommending outsourcing the facilities management function:

In addition to the above expenditure, 23 Full Time Employees currently employed at stores who provide a range of repairs and maintenance services, cost \$800,000 per annum to employ. This cost will be reduced as a more focused approach can be applied by a Facilities Management Provider [outsourcer] ... By transferring up to 23 staff to the Facilities Management Provider [outsourcer] it would be reasonable to expect, on the basis of standard industry practice, that the costs of the services those staff currently provide should decrease as part of the Facilities Management Provider's activities. The Facilities Management Provider would have staff involved in delivering those activities take on additional services and thus improve their utilisation and skill level. This should result in a net saving in the order of 25% of the salaries of these staff ... These staff would be better employed in an organisation where their skills can be utilised more widely and they can be better supported with a range of corporate resources focused on repairs and maintenance service delivery.

According to the General Manager, Property and Projects, when interviewed on 3-12-04:

***In your opinion, what benefits and or opportunities did David Jones gain as a result of outsourcing the Facility Management Services?***

*We gained a better understanding of our Facilities Management and its operation within David Jones. We were able to centralise Facilities Management within the company. Although quality suffered, we centralised and control costs better.*

***Do you believe that these benefits could have been achieved without outsourcing?***

*Yes, but it would have taken a lot more management effort, time and resources.*

<b>Job Description</b>	<b>Location</b>	<b>Merit PW</b>	<b>Hourly Rate</b>	<b>Base Hours</b>	<b>Weekly Rate</b>	<b>Transferred</b>
<b>Labourer</b>	Market St	25	\$13.25	38	\$528.50	no – redeployed
<b>Painter</b>	Bondi Junction	45	\$14.20	38	\$584.60	no – retired
<b>Carpenter</b>	Chatswood	0	\$14.59	38	\$554.42	no – left
<b>Carpenter</b>	Woden	57	\$13.89	38	\$584.90	no – retired
<b>Machinist</b>	Kewdale	0	\$12.95	38	\$492.20	no – left
<b>Painter</b>	Market St	62.84	\$14.20	38	\$602.44	yes
<b>Carpenter</b>	Elizabeth St	0	\$14.59	38	\$554.42	yes
<b>Carpenter</b>	Elizabeth St	30	\$14.59	38	\$584.42	yes
<b>Painter</b>	Elizabeth St	0	\$14.20	31	\$440.20	yes
<b>Carpenter</b>	Market St	20	\$14.59	38	\$574.42	yes
<b>Plumber</b>	Market St	100.5	\$14.73	38	\$660.24	yes
<b>Carpenter</b>	Bankstown	20	\$14.59	38	\$574.42	yes
<b>Carpenter</b>	Canberra	57	\$13.89	38	\$584.90	yes
<b>Carpenter</b>	Newcastle	20	\$14.59	38	\$574.42	yes
<b>Carpenter</b>	Bourke St	55	\$15.03	38	\$626.14	yes
<b>Carpenter</b>	Rundle Mall	51	\$14.33	38	\$595.60	yes
<b>Painter</b>	Rundle Mall	0	\$13.14	38	\$499.40	yes
<b>Carpenter</b>	Marion	0	\$13.47	38	\$511.90	yes
<b>Carpenter</b>	West Lakes	0	\$13.47	38	\$511.90	yes
<b>Electrician</b>	Kewdale	50	\$12.95	38	\$542.20	yes
<b>Clerk</b>	Kewdale	0	\$12.08	21.16	\$255.70	yes
<b>Project Estimator</b>	Head office	0	\$23.21	38	\$882.13	yes
<b>Operations Manager</b>	Kewdale	0	\$27.42	38	\$1,042.10	yes
					\$13,361.57	

**Table 13 – Maintenance Employees to Be Outsourced 2002 – David Jones  
(Human Resources – Employee Relations)**

Therefore, it could be suggested that there were “Transfer Leverages” to the benefit of David Jones during the outsourcing arrangement (refer to Flow Chart 24)

The benefits of transfer leverages can therefore not be downplayed. A transfer of over \$500,000 of annual salary costs to a provider in one go held enormous benefit for David Jones.

### ***ECONOMIES OF SCALE BENEFITS***

Also, David Jones enjoyed other benefits from the initial outsourcing decision (refer to Flow Chart 24).

According to the internal document entitled “Securing our Future – 26-02-01”, these benefits were to be gained from economies of scale and expertise gained through seeking a specialised outsource provider:

Central Property management [David Jones] have acknowledge for a number of years the decline in quality ... due to restricted spending on the discretionary component of maintenance controlled by stores ... Based on the recent trend in the supply market for these services [Table 7] it is apparent that the lack of aggregation in the contracting structure provides opportunities for savings and improved quality of service delivery ... [by] appointing a Facilities Management Provider [outsourcer] to work with David Jones nationally, including Foodchain, to undertake the following tasks would be a key component of the above solution [tendering contracts, Provide National Help Desk, Take over transferred staff and functions] (David Jones Limited 2001c)

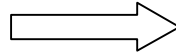
According to a presentation presented by the David Jones business owners to the David Jones Store division, the following benefits were to be gained from outsourcing facilities management to an external provider:

- Expenditure reduction
- Budget monitoring
- Compliance monitoring
- Full contract value achieved for services
- Consistency of presentation
- Programmed maintenance (as opposed to breakdown maintenance)
- Centralised FM records of all stores
- Centralised work orders
- 7 x 24-hour help desk

This list was compiled as a result of David Jones issuing a Request for Proposal to selected FM providers prior to outsourcing in 2001 (David Jones Limited 2002c).

### Transfer Advantages

Outsourcing the function delivered high-level flexibility through staff transfers and centralised control of the FM function.



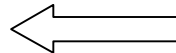
### Economies of Scale & Specialisation

It also gave David Jones access to specialised systems and economies of scale advantages, resulting in initial costs decreases.



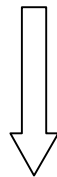
### A Created Monopoly

The outsourcing contract itself proved to monopolise the FM function, which disadvantaged David Jones through lack of remedial action available.



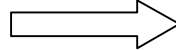
However, the outsourcer failed to deliver quality through excessive staff turnover and a declining skill set which saw costs rise.

### Quality of Delivery Reduction over Time



The outsourcer became unco-operative and David Jones lost control of the function to some extent.

### Uncooperative



This resulted in day to day flexibility loss for David Jones's FM function.

### Flexibility Loss

**Flow Chart 24 – Value and Costs from Outsourcing for David Jones**

The successful Tender returned a response that declared the following benefits would be achieved by utilising its services:

1. Owned by an international specialist company
2. Having 700 staff nationally
3. Having 40 FM contracts, each with their own unique qualities
4. Its prices reflecting its ability to source cost effective solutions
5. A single electronically delivered monthly invoicing – streamlining the David Jones administration function
6. Previous client wins in energy management, and redeployment of these resources to the David Jones Contract
7. Centralised pool of subcontractors
8. Experienced in maximising the potential of maintenance management systems
9. Received considerable industry recognition with awards from both the Facilities Management Association and Property Council of Australia
10. Has considerable corporate resources which are able to provide specialised assistance depending on the need.
11. The application of proven methodologies such as reliability-centred maintenance principles.

According to the *Building Services Manager* during the interview on the 1-12-04:

***In your opinion, what benefits and or opportunities did David Jones gain as a result of outsourcing the Facility Management Services?***

*Reduce costs. We went from a fragmented in-house system to a centralised control base. Also staff transfer opportunities. It changed the attitudes and minds of the store F&A managers which allowed head office to be more involved in decision-making. That is, looking at the big picture!*

***Do you believe that these benefits could have been achieved without outsourcing?***

*At that time no. We did not have the internal expertise to do it. It would have been too complex and involved to achieve in such a short space of time. We gave the outsourcer a three-month period prior to the contract term to prepare, however they did not utilise this time correctly.*

It is therefore concluded that there were definitely transfer leverages enjoyed by David Jones during the transfer process in the form of full-time staff reductions. Other

benefits were also gained from utilising a specialised service-provider and its associated economies of scale.

Most transferred staff were successfully aggregated into the outsourcer's existing client base. Without outsourcing, this would have been impossible to achieve on a cost-for-cost basis.

According to the post-implementation review undertaken by David Jones (David Jones Limited 2002d), the respondents further revealed that:

The FM knowledge and expertise in the technical side of maintenance and plant and equipment is far superior than what we previously had (F&A Manager).

It would seem [the outsourcer] is doing its job, they are technically equipped to resolve technical issues and are able to supervise our service providers in a professional manner (F&A Manager).

The outsourcer has taken away the demand of invoice payment and administration (Store Manager, Newcastle).

I find less time spent on organising solutions to problems (Store Manager, Tuggerah).

If we had the right personnel in Head Office we could do this as well. However, considering we are retailers then we should continue with [the outsourcer's] expertise (Store Manager).

[The outsourcer] has the potential to do great things for David Jones in the contract maintenance area with their knowledge and expertise etc. (F&A Manager, Brookvale).

On 22 October 2003, the outsourcer highlighted areas which it believed, due to specialisation and economies of scale advantages supplied by it, benefited David Jones over and above the SLAs and KPIs of the contract (refer to Table 14).

According to the **Building Services Manager** during the interview on the 1-12-04:

***In your opinion, were any benefits gained by David Jones through the specialist nature of the outsource provider, and if so, can you provide an example?***

*Provided expertise across the board. They gave us insight into utilising technologies across Facilities Management. They benefited David Jones through more formal reporting structures and databases. Example, lifecycle costing and budgeting.*

***In your opinion, were any benefits gained by David Jones through economies of scale provided by the outsource provider, and if so, can you provide an example?***

*No I do not believe so. They sold us that benefit but it did not eventuate.*



<b>Description of Outsourcers' claim of added value<sup>62</sup></b>	<b>Result of Economies of scale</b>	<b>Result of Specialisation</b>	<b>Broad-based Benefits to David Jones</b>	<b>% Implemented according to Outsourcer</b>	<b>% Implemented according to David Jones<sup>63</sup></b>
Centralised Property Call centre	X	X	Reduced transaction costs	100	60
Palm Computer devices (site audits)		X	Quality increases on site	100	25
Batching work orders	X		Reduced transaction costs	90	70
Subcontractor value	X		Cost decreases	100	75
Invoice consolidating	X		Reduced transaction costs	100	100
National OH&S guidelines	X	X	Risk reduction	100	50
Asset register/bar-coding	X		Reduced costs	90	10
Re-scoping services contracts		X	Quality increases/ cost decreases	90	60
Waste recycling initiatives		X	Cost decreases	100	70
Standardised business rules for work orders		X	Reduced transaction costs	100	80
Comprehensive contracts for air-conditioning		X	Quality increases/ cost decreases	100	100
Single contract for all FM requirements	X		Reduced transaction costs	100	55
Computerised maintenance management system	X	X	Reduced transaction costs	100	75
Lifecycle costings in CMMS		X	Cost decreases	10	0
Prophet CAD register	X	X	Reduced transaction costs	100	10
			Average	92	56

**Table 14 – Advantages to David Jones from Specialisation and Economies of Scale**

<sup>62</sup> Outsourcer's claim via letter October 2002.

<sup>63</sup> Rated according to the new National David Jones Property & Operations Manager.

## **OPPORTUNISM EVOLVED**

As can be seen from Table 14, there was a difference of 36% with regard to just how much value-added service the outsourcer contributed to the David Jones FM contract when compared to David Jones's assessment and the outsourcer's value-added services submitted for consideration. In fact, this difference of opinion prevailed throughout the remainder of the contract.

The outsourcer, in March 2004, submitted an invoice for a bonus claimed for value-added services, which it claimed was due under the provisions of the contract, and claimed due to value-added services over and above the contracted KPIs.

David Jones responded in May 2004:

In our view no such payment is due and owing under the terms of the contract between us for the provision of facilities management services. We do not accept that your claim has any validity ... While in certain instances there may have been a cost reduction this is due to a reduction in certain services resulting from a decision made by David Jones having regard to its cost efficiencies requirements. It is not as a result of any "innovation" (Letter Facility Management Contract: Share of Savings Claim Response and Payment Schedule 5-5-04); (David Jones Limited 2004e).

This was supported and thus confirmed by an independent adjudicator (appointed under provision of the contract), who stated that:

I have determined ... That the [outsourcer] is not entitled to be paid the bonus claimed for a share of alleged savings (Fax to David Jones 11-11-04) (David Jones Limited 2004a).

According to the *General Manager, Property and Projects*, when interviewed on 3-12-04:

***In your opinion, do you believe that the outsourcer was entitled to a share of saving?***

*No, they did not achieve the KPIs that were set.*

***Considering this, why do you think the outsourcer put a financial claim in for a share of saving?***

*They did not clearly understand the requirements of the contract in relation to their performance.*

According to the *Building Services Manager*, during the interview on the 1-12-04:

***In your opinion, do you believe that the outsourcer was entitled to a share of saving?***

*No under the terms of the contract they had specific conditions to comply with, but they did not do it!*

***Considering this, why do you think the outsourcer put a financial claim in for a share of saving?***

*Their belief was they saved us money but this was not actually what the contract said. They first believed they were entitled to it at the end of the first year, however, at the end they were merely pursuing this claim to satisfy individual bonus entitlements of some staff and to ensure a profit from the contract as it was not making them any money!*

It could therefore be suggested that, even though the outsourcer provided advantages through economies of scale and specialisation, it also became opportunistic in its interpretation of the FM contract and claimed for monies which were determined to be not over and above the contracted KPIs of the FM contract.

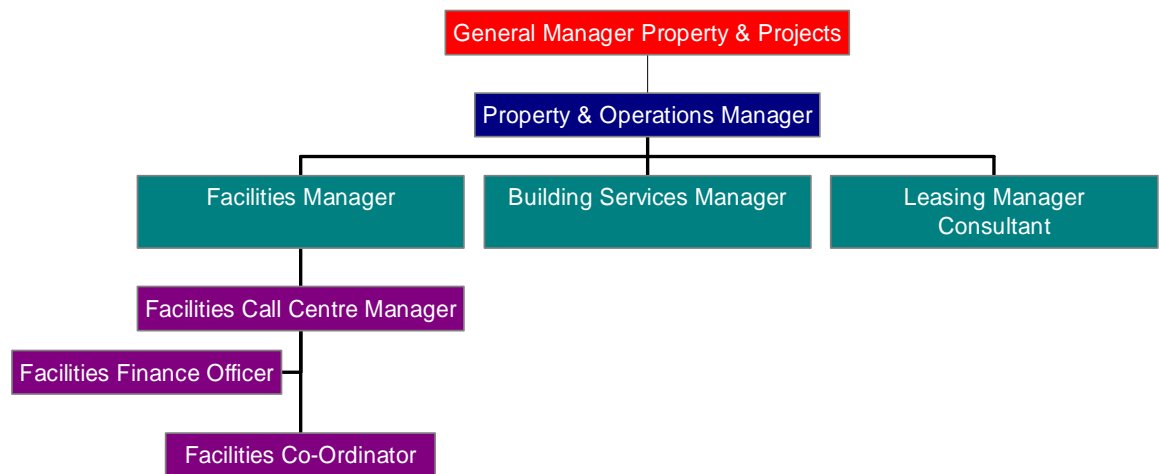
It seemed that opportunism did in fact evolve as the contract progressed, fuelled by the outsourcer's monopoly and its inability to achieve KPIs in full. Once again, this inability seems to stem from the structure of the outsource agreement not being, in fact, 100% fully outsourced. The majority of the under-realised initiatives in Table 14 would ordinarily be managed via centralised contract management which, in fact, was not outsourced.

Coupled with a shifting operating environment, the outcome was total dissatisfaction with the outsourcing of the FM function.

### ***DAVID JONES RETURNS TO IN-HOUSE FM***

As previously discussed, David Jones now performs its FM in-house (refer to Figure 12). There are some notable differences in the way the current in-house FM is managed, when compared to the previous methodologies.

There are no longer state-based FM managers; nor were the transferred maintenance personnel replaced. The FM operation is run via a call centre and is highly centralised (refer to Flow Chart 25), thus confirming that the operating environment has changed since the previous decentralised, highly staffed in-house structure.

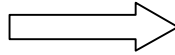


**Figure 12 – Current (2005) In-house FM Structure for David Jones**

Thus this would seem to be the logical progression for the David Jones FM Function. From the time outsourcing was tabled until now, the David Jones core business management environment had changed, from a more centralised structure, to strategic FM cost efficiencies, to heighten competition. These changes are more conducive to in-house management.

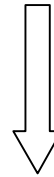
### **Opportunism Emerged**

The outsourcer provider became opportunistic in its approach to the contract via a share of savings clause in the contract.



### **Early Termination of Contract**

Subsequently David Jones exercised its early termination clause under the contract and took the function back in-house.



The new in-house structure is centrally managed.

### **Now In-house through Centralised**

**Flow Chart 25 – Opportunism Resulting in a Return to In-House FM for David Jones**

## **6.5 CONCLUSION: DAVID JONES**

### **6.5.1 IN-HOUSE COSTS**

It could therefore be suggested that the case study may support the hypothesis that:

*The multidiscipline nature of Facility Management leads to increased staff numbers for in-house teams resulting in excessive overhead costs.*

David Jones defines the FM function to encompass all the necessary activities to support the business' physical infrastructure, excluding project fit-out work, IT (other than some support services), and corporate real-estate management. As such, this function was considered by David Jones to be multidisciplinary in nature.

This function was originally managed in-house by on-site store management and on-site maintenance staff. The staffing numbers appeared to remain fairly static throughout this period. This staffing structure was considered to be too costly and ineffective by an internal David Jones review of the function, and was subsequently outsourced. Importantly, the new in-house structure excludes these maintenance staff altogether, suggesting that this layer of staff was indeed non-productive overall.

### **6.5.2 VALUE OUTSOURCING**

The case study also seems to support the hypothesis that:

*When there exists bounded rationality, and firms consider their FM non core, having simple FM service levels in a decentralised organisation within a highly competitive globalised environment, then there are large transfer and economy of scale benefits for the organisation from outsourcing the FM function. Competitive advantage and efficiencies are increased, as are flexibility and specialisation.*

David Jones's FM function was performed in-house since the companies inception in 1838, except for approximately two years, where it was handed over to a single outsource provider of FM services in 2002.

The decision to outsource was due in part to the acknowledgment of the existence of bounded rationality by David Jones when it came to performing this work.

It was found that the core business for the company was regarded as the department store business, and this excluded FM as being core.

David Jones became a fully centrally run organisation, operating more and more in a highly competitive environment. Initially the FM function was found to be managed on a decentralised basis, wherein corporate governance was difficult.

David Jones is not influenced by globalisation to any great degree, however, a major strategic push by David Jones to reform its operations could be indirectly attributed to the effects of a globalised economy. That is, a worldwide trend to flatten company structures and increase cost efficiencies, resulting in outsourcing of the FM function to shed some staff.

Under this outsourced contract, the service level agreements were considered simple. It was found, however, that there were numerous service level agreements when considering the entire portfolio of contracted services managed under the contract, but that they were "commercially" excluded from the outsourcing contract.

On a strategic level, David Jones gained flexibility in areas of staff movement, cost re-allocation through staff focus on core business, and corporate governance through outsourcing the function.

This flexibility allowed transfer leverages to be gained when in-house maintenance staff were transferred across to the outsource provider. Cost efficiencies were gained through the outsource provider's initial cost reductions through its economies of scale. Increased control of the FM function for David Jones was achieved through centralising the operation through the outsource provider.

It was also found that the outsourcer brought specialised facility management skills into David Jones, adding value that could not be realised by the in-house management team in the time frames required.

It was found that the FM function was considered as a contributor to the strategic objectives for the company. This was mainly in cost-efficiency initiatives and in maintaining ambience within the store, which the outsource provider enhanced through initial cost savings via economies of scale at the time of outsourcing the function. This was reflected in David Jones's leading competitive position at the time. However this "realisation" of the benefits of the FM function also contributed to a shifting operational environment, in which the outsourcer struggled.

### **6.5.3 OUTSOURCING COSTS**

Therefore, the case study also seems to support the hypothesis that:

*There is a monopoly created by outsourcing the FM function, and this will create the necessity to source multiple providers, resulting in a loss of control for the client organisation.*

*The outsourcing decision potentially complicates relationships which are in fact vital for the success of the decision to outsource, eventually increasing costs and lengthening the term of the contract, resulting in a decrease of flexibility for the client organisation.*

*Outsourcing will eventually lead to a shortage in skilled knowledgeable workers able to satisfy the demands of the client organisation, effectively reducing staff conditions and ultimately the client organisation's core competencies, with eventual hollowing-out of the client organisation's functions to some extent.*

*The decision to outsource FM will increase the need to monitor performance, eventually increasing costs and decrease in quality outcomes.*

There was found to be evidence of a monopoly situation arising during the outsourcing contract for the management of the David Jones assets by the outsource provider. David Jones sought alternative providers to satisfy part of the FM function, which disadvantaged David Jones at some point.

Control and quality loss of the function and its services were also said to be experienced by David Jones during the outsource period. There was found to be an ever-increasing adversarial relationship between David Jones and the outsource provider. This had developed as a result of the problems of fulfilling the contract requirements, which eventually indirectly contributed to the early termination of the contract. The original contract term was five years; however termination notice was given after only two years.

On an operational level, outsourcing the FM function was found to eventually reduce flexibility of delivery of the FM function, attributed to loss of control by David Jones under the new contract.

The facilities managers responsible for this function had either a broad generalist skill set (as in the in-house store managers), or were trained in more than one of the disciplines that the FM function for David Jones encompasses (as in the in-house property team personnel and the outsourcer's staff).

It was found that difficulty was experienced by the outsourcer in fulfilling the staffing requirements required by the contract, due to the high turnover of its project-orientated contingent workforce. It was concluded that one major reason contributing to this high turnover was the stressful environment in which the outsourcer's staff found themselves operating. Conversely, this turnover was not evident whilst the function was managed internally by David Jones.

The competitive position of David Jones increased over time, and was found to be enhanced via cost-efficiency strategies through the large FM spend cost centre. However, this was put at risk by the outsource provider, which exceeded the budget overall during its term under contract. The failure of the Foodchain business, in which the FM function was involved, detracted from the competitive advantage of the company as well. It seemed the outsourcer was not prepared for this intense focus on cost efficiencies, and thus was under-resourced.

There was also some evidence of hollowing-out of certain aspects of David Jones, as a result of outsourcing the maintenance function of FM, namely, the loss of the relationship and subsequent idiosyncratic advantage between the eighteen maintenance personnel transferred over to the outsourcer, and the vendors and suppliers of FM services procured direct by David Jones. However, this only became an issue once focus on costs had emerged.



During the transition from in-house to outsourced management of the function, over a period of two years, an ever-increasing amount of management time was spent by David Jones with monitoring the function. Hands on day-to-day management of the FM function, however, reduced as a result of outsourcing.

There were also indications that overall quality decreased as a result of outsourcing the function. Once again, this was to be expected as the now under-resourced outsourcing contract became more and more scrutinised by a cost-focused and now FM-skilled David Jones management team.

#### **6.5.4 IN-HOUSE VALUE**

Considering that the FM function for David Jones was brought back in-house in August 2004, it was suggested that this was due in part to the outsourcer becoming opportunistic through unfounded share of savings claims, which further degraded the relationship with David Jones under the outsourcing contract.

It can also be suggested that another major contributor was a drive by David Jones to further centralise the store functions (as reflected in the new in-house structure; refer to Figure 12), and, as discussed, this coincided with a strategic push for cost efficiencies.

The case study, therefore seems to support the hypothesis that:

*For large centralised organisations that consider Facility Management as strategic, having ownership over specific assets in an uncertain environment; in-house facilities management delivers maximum value by reducing costs, increasing flexibility and control, while reducing opportunism.*

David Jones was found to be considered a large organisation within the department-store sector, located throughout Australia, and eventually became a fully centralised operation. The company became more and more centralised in its operations during the outsourcing contract.

Ownership of the assets managed under the FM function resided with David Jones, or a landlord, and not with a third-party provider, however, real-estate ownership was relinquished just prior to outsourcing.

The question needs to be asked as to how much transfer and control of these owned assets were actually given to the outsource provider? In fact, according to the contract there was very little, if any transfer of control or ownership to the outsource provider for these assets (apart from management of maintenance). This may also

explain why the outsourcing arrangement was largely unsuccessful, when considering that there could be little, or no benefits gained by David Jones in merely assigning the management of its owned assets to a third party.<sup>64</sup>

Of these assets, it was concluded that one quarter are regarded as specific, unique to the successful operation of strategic contribution to core business strategy, namely, the look and feel of the store and its overall ambience.

There was, however, initially found to be minimal uncertainty in the operating environment in which these assets operate. However, this is changing due to increased competition and emphasis on “look and feel”.

The period of time in which David Jones outsourced its FM to when it returned back in-house was three years. Thus there is strong evidence to support the notion that all the variables attributed to both cost and value surrounding FM procurement and delivery emerged from the case study, supporting theory. No emergent theory from the case-study findings conflicted with the findings of the literature found within the body of knowledge.

There was an obvious relationship between the drivers of outsourcing and insourcing, for both cost and value, which was demonstrated through David Jones’ changing operating environment.

The degree of association of this relationship will be further investigated in the following chapter.

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<sup>64</sup> Outsourcing was previously defined as a transfer of control of processes and financial outcome ownership under contract for a specific time. It is doubtful that this transfer was fully achieved under the outsourcing contract, as there was little or no financial ownership or contract risk borne by the outsourcer.

## **CHAPTER SEVEN**

### **DATA ANALYSIS**

#### **CASE STUDY and QUESTIONNAIRE**

##### **7.1 INTRODUCTION**

Having defined the research questions through the establishment of the initial Hypothesis – and identified the issues surrounding FM procurement and delivery, comparisons were made against real-life contexts through the case study (David Jones).

The supporting nature of the case-study findings for the hypothesis suggests that causal relationships may exist when compared with the emergent variables from the literature review and their subsequent practical applications in a real-life context.

To further triangulate and test this data, external data was obtained using questionnaire methods, using statistical analysis such as averages (to quantify and compare values), t-testing (to identify significant differences), multiple correlation analysis (using the ranking or Spearman method, to identify relationships), and polynomial regression analysis (to identify trends).

This chapter thus attempts to reach a conclusion for the research objectives, which are to:

- (i) Analyse external data made available to determine the FM procurement and delivery strategy, length of realised strategy, and the associated perceived value and cost implications.
- (ii) Identify and discuss any influencing variables based on comparisons from the qualitative naturalistic case-study technique, and now through quantitative statistical analysis of the questionnaire data.

The purpose of collecting this data is to further discuss the notion and nature of the existence of cycles (if any) through the two main forms of FM procurement and delivery strategies as previously defined, and to investigate the reasons.

## 7.2 THE STRUCTURE OF THE QUESTIONNAIRE

The questionnaire consists of thirty-five questions and is grouped into nine distinct topics (refer to Appendix 2). The purpose of these topics are to:

1. **Employment function:** confirm the participant's relationship to the organisation, and to establish the extent of the multidisciplinary nature of the FM function being managed.
2. **Current procurement method:** establish the extent<sup>65</sup> (in both time and function) of outsourcing *currently* being performed for the organisation and its associated management structure.
3. **Previous procurement method:** establish the extent (in both time and function) of outsourcing *previously* being performed for the organisation.
4. **Outsourcing:** define the associated value attributed to through outsourcing the FM function.
5. **The FM function:** further define the nature of the FM function for the organisation to which it is being delivered, in particular its *strategic* value.
6. **The organisation:** define the organisation's operating environment and structure, including the facility assets under management.
7. **The management environment:** define the extent of perceived costs to management attributed to outsourcing the FM function.
8. **The core business of the organisation:** define the operating environment of the core business for the organisation and the extent of any perceived costs to the core business attributed to outsourcing the FM Function
9. **FM delivery:** define the perceived value and cost derived from the current FM delivery, regardless of whether it is delivered through outsourcing or in-house methods.

The structure of the questionnaire, therefore, has been designed in such a way as to take a complete snapshot in time of each organisation's perceived value and cost levels, whether outsourced or insourced.

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<sup>65</sup> "Extent" for the purposes of the questionnaire assumes that in the absence of outsourcing, in-house FM is the alternative.

## THE RESPONSE RATE AND GROUPINGS

Four hundred and ninety-seven questionnaires were sent, of which one hundred and eighty-one were returned completed, giving a 36% return rate.

Thirty-two were discounted from the research data, leaving a 30% return rate. Twenty six of the disqualified responses were filled out by service-providers<sup>66</sup> (or outsourcers) of FM services to organisations. Objectivity<sup>67</sup>, in these cases could not be guaranteed, thus they were discounted. The remaining six were excluded on the basis that they were conflicting within their responses. That is, it was noted that they contradicted previous question responses to the point of non-determination of the correct response when considering the questionnaire in its entirety, thus they were considered as incomplete or incorrect.

The questionnaire data results can be broadly categorised<sup>68</sup> into current and previous FM procurement methods, being grouped as 75% or more outsourced, 75% or more insourced, and 50% outsourced/insourced. Value and costs can then be measured for each of these categories, with comparisons made. The implications of time for each category can then follow, comparing the current with previous procurement methods.

The majority of respondents were delivering in-house FM, with the second largest being that of outsourced delivery, followed by a split between the two. There were only five respondents who fully outsourced their FM (refer to Table 15).

To ensure sufficient numbers of respondents were represented for each major FM procurement and delivery method, three groupings were devised to be used where required. Most organisations insource their FM.

	Sample Split by Category			Total
	75%+ Outsourced	75%+ Insourced	50% Out/Insourced	
<b>Nos</b>	24	107	17	148
<b>% of total</b>	16%	73%	11%	100%

**Table 15 – Extent Out/Insourced**

<sup>66</sup> The questionnaire was designed to be completed by organisations that are *recipients* of FM delivery, regardless if serviced by internal or external providers.

<sup>67</sup> The service provider, in some cases, was also acting as manager of the service provision for the client organisation and thus was in a conflicting situation. They were not the intended recipients of the questionnaire, but were given it to complete second hand and thus discounted.

<sup>68</sup> Categorisation of the data will, at times, also be grouped further into 100% Outsourced, 75% Outsourced, 50% Out/Insourced, and 75% Insourced when appropriate for the data analysis type used.

## ***FM CATEGORIES BY INDUSTRY SECTOR***

The average number of categories constituting FM for each organisation indicated that the communication services sector<sup>69</sup> (refer to Table 16) had the most individual categories, with the retail sector having the least categories (refer to Table 16).

Interestingly, the communications services sector was also the least outsourced, with the agriculture, forestry and fishing sector the most outsourced. This tends to support the notion that the more multidisciplinary, or multi-category the FM delivery, the more likely it is to be insourced, as complex SLAs lead to high outsource costs, as previously discussed.

Building maintenance and management was the most utilised FM category, with IT the least (refer to Table 17).

The spread across thirteen industry sectors is considered a good representation for the purposes of this research. It can now be seen that the more categories which are considered part of the FM function, the less they are outsourced. Also, in general, based on Table 17, FM is multidisciplinary, with a diverse basket of disciplines and services.

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<sup>69</sup> Australian Bureau of Statistics categories.

<b>Industry Sector</b>	<b>Organisations</b>	<b>Average No. of FM Categories</b>	<b>Extent Outsourced (%)</b>
<b>Commun'ctn Services</b>	2	10	10
<b>Wholesale Trade</b>	2	8.5	20
<b>Retail Trade</b>	2	6	20
<b>Cultural and Recreational Services</b>	15	7.9	28
<b>Transport and Storage</b>	8	8	30
<b>Manuf'ctng</b>	4	7.5	35
<b>Education</b>	20	8.7	35
<b>Finance and Insurance</b>	15	7.5	36
<b>Government Admin. and Defence</b>	44	7.5	39.1
<b>Property and Business Services</b>	12	7.8	45
<b>Electricity, Gas and Water Supply</b>	7	7.7	45.7
<b>Health and Community Services</b>	15	7.8	50.7
<b>Agriculture, Forestry and Fishing</b>	2	8.5	100

**Table 16 – Industry Sector Analysis**

<b>FM Category</b>	<b>Average Percentage of Usage</b>
Building Maintenance & Management	88.5
Construction & Project Management	83.3
Plant & Equipment Management	79.5
Grounds Management	75.6
Utilities Management	75
Architectural and Engineering design	74.4
Other	73.1
Space (Churn) Management	66
Corporate Real-estate Management	60.9
Administration Management	37.8
I.T Management	8.3

**Table 17 – FM Category Average Usage for Total Sample**

### **7.3 DURATION OF FM PROCUREMENT and DELIVERY STRATEGY**

On average, those organisations that currently insource 100% of their FM have done so for the longest period of time, with those that outsource 100% having done so for the shortest period of time (refer to Table 18). Interestingly, it is worth noting that those organisations that now outsource 75% or more of their FM had previously insourced 50% or more of their FM, and did so for the longest average period of time.

This may indicate, for this data set, that insourced methodologies may tend to remain the predominant form of FM procurement for a longer period of time than outsourced methods. This will be dealt with in greater detail in this chapter.

Also, those organisations that outsource 100% of their FM currently had also changed their procurement method the most, compared to their previous methodology (by 54%). The least change was by those that currently insource their FM 100% (by only 8%) (Refer to Table 18).

This may also indicate for this data set that the more insourced the FM procurement is the least likely it is to change (refer to Flow Chart 26).

Even though it would seem that insourced methods are the more stable over time and remain relatively unchanged compared with those that outsourced, this may be merely a reflection that the insourced organisations in this sample are yet to look at the



overall efficiency of their FM function when benchmarked against other organisations. This is especially so against overseas markets where it could be suggested that there is a more developed FM outsourced market. Quantification of cost and value levels over the time period should indicate whether this is the case.

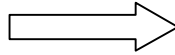
However, these figures may also suggest that Australian firms that outsourced may have experienced a correction some time after and brought back some of the outsourced function in-house, but only partially. This would also explain why wholesale change is not experienced. Once again, further quantification of value and cost is necessary.

<b>Current Procurement Method</b>	<b>100% In-house</b>	<b>75% In-house</b>	<b>50% In-house</b>	<b>75% Outsourced</b>	<b>100% Outsourced</b>
<b>Current Procurement (% of Sample)</b>	54.7%	17.6%	11.5%	13.5%	2.7%
<b>Current Procurement Length (Average in Years)</b>	23.3y	6.5y	7.6y	8.0y	5.1y
<b>Average Previous Procurement Method</b>	92% Insourced	82% Insourced	88% Insourced	26% Outsourced	46% Outsourced
<b>Previous Procurement Length (Average in Years)</b>	14.6y	20.9y	17.6y	30.3y	26.3y

**Table 18 – Duration of Procurement Methods**

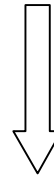
**Multidisciplinary Is  
Insourced More**

Those industry sectors that had the most categories under the FM function were also the most insourced.



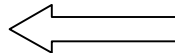
**Results in Complex  
SLAs**

This confirms that the more multidisciplinary the FM function, the more complex the SLAs, thus the less outsourced.



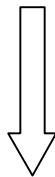
**More Insourcing Means  
Less Likely to Change**

The more of the FM function that is insourced, the less likely it is to change.



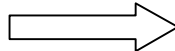
And the longer the FM function is insourced, the less likely it is to be outsourced.

**Less Outsourcing when  
Insourced Longer**



This indicates that “partial change” rather than “wholesale change” is the preferred adopted option.

**Partial Change  
Preferred**



However, partial outsourcing options require more staff numbers to deliver.

**Confirmed Staff  
Increases for Partial  
Outsourcing**

**Flow Chart 26 – The Dynamics Surrounding the Durations of FM Procurement Methods**

### **7.3.1 SIGNIFICANT “DURATION OF FM PROCUREMENT METHODS” DIFFERENCES – T-TEST ANALYSIS**

Furthering the conclusions drawn from the averages, that is, that insourced methodologies may tend to remain the predominant form of FM procurement for a longer period of time than outsourced methods, and that the more insourced the FM procurement is, the least likely it may be to change; by using the t-test<sup>70</sup> method, significant differences between the various forms of FM procurement (that is 100% to 0% outsourced) can be compared, discussed, and used to support the findings mentioned. Therefore by comparing the flagged significant variances results from the t-test for each FM procurement method, an indication of significant differences can be established.

#### ***COMPARING AGAINST 100% INSOURCED METHODS***

For those that currently insource their FM 100%, significant differences were established for the extent of change in FM procurement methods, the current length of the procurement method adopted, and the staff numbers involved (refer to Table 19).

These significant differences in means seem to support the theory that the more insourced FM is currently, the less outsourced it was previously. For example, when comparing previous FM procurement methods for the current 100% insourced FM method and current 100% outsourced FM methodologies, the difference was 83.56%. That is, previously the current 100% outsourced FM method was also 83.56% more outsourced in its previous method than the current 100% insource methodology was.

A similar trend is noted when observing the other current FM methodologies (Tables 19 and Appendix 2 Tables 38, 39 and 40). This may be suggesting that “wholesale change” may not be the predominant strategy when changing FM delivery methods. Rather, partial shifting from either major form, especially when moving from insourced to outsourced options, maybe the more favoured.

Also, using the same methodology, in this data set, there is support for the notion that insourced FM delivery may tend to remain the predominant form of FM procurement for a longer period of time than outsourced methods.

When noting the trend of difference for “current length”, it is observed that when there

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<sup>70</sup> The t-test procedure compares means and flags significant variances. (The p-level reported with a t-test represents the probability of error involved in accepting a research hypothesis about the existence of a difference. Technically speaking, this is the probability of error associated with rejecting the hypothesis of no difference between the two categories of observations (corresponding to the groups) in the population when, in fact, the hypothesis is true.)

**Table 19 – Independent Samples Test for 100% Insourced – Previous FM**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
Compared with 75% Insourced		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Prior procurement	Equal variances assumed	1.148	.286	-1.925	105	.057	-.514	.267	-1.044	.016
	Equal variances not assumed			-1.862	40.124	.070	-.514	.276	-1.072	.044
Current length	Equal variances assumed	12.464	.001	3.207	91	.002	16.77296	5.22991	6.38438	27.16154
	Equal variances not assumed			5.029	74.033	.000	16.77296	3.33502	10.12784	23.41808
Staff nos at start	Equal variances assumed	3.124	.081	-1.912	88	.059	10.28231	5.37715	-20.96826	.40365
	Equal variances not assumed			-1.647	33.749	.109	10.28231	6.24248	-22.97203	2.40741
Staff nos now	Equal variances assumed	9.902	.002	-2.872	102	.005	10.34615	3.60210	-17.49091	-3.20140
	Equal variances not assumed			-1.936	27.523	.063	10.34615	5.34469	-21.30281	.61051
<b>Compared with 50% insourced</b>										
Current length	Equal variances assumed	6.665	.012	2.404	82	.018	15.70079	6.53008	2.71037	28.69121
	Equal variances not assumed			4.058	76.398	.000	15.70079	3.86928	7.99510	23.40648
Staff nos now	Equal variances assumed	2.217	.140	-1.717	92	.089	-5.05288	2.94323	-10.89839	.79262
	Equal variances not assumed			-1.483	19.148	.154	-5.05288	3.40762	-12.18139	2.07562
<b>Compared with 75% outsourced</b>										
Prior procurement	Equal variances assumed	.035	.851	-3.165	99	.002	-.880	.278	-1.431	-.328
	Equal variances not assumed			-3.821	38.759	.000	-.880	.230	-1.345	-.414
Current length	Equal variances assumed	10.557	.002	2.565	85	.012	15.26873	5.95168	3.43520	27.10226
	Equal variances not assumed			4.614	72.004	.000	15.26873	3.30956	8.67124	21.86622
<b>Compared with 100% outsourced</b>										
Prior procurement	Equal variances assumed	1.491	.226	-3.109	83	.003	-1.880	.605	-3.082	-.677
	Equal variances not assumed			-2.470	3.182	.085	-1.880	.761	-4.225	.466
	Equal variances not assumed			4.700	26.983	.000	18.12873	3.85692	10.21476	26.04270

is no outsourcing at all, there is less change when compared to those that adopt partial outsourcing.

Also, for those that adopted partial outsourcing (refer to Tables 19 and Appendix 2 Tables 38 and 39) staff numbers<sup>71</sup> were higher. This would suggest that more staff are required in partial outsourcing strategies than full outsourcing or full insourcing options. This trend is evident, however, through the full range of FM procurement and delivery methods, indicating a trend exists for this dependent variable.

### ***PREVIOUS VERSUS CURRENT FM METHODS – COMPARISON TO DAVID JONES CASE STUDY***

Certainly, when considering the case study, the notion of insourced FM being in duration longer than outsourced, or partial outsourced options was confirmed, whereby but for a period of two years, David Jones insourced its FM over a period of more than 150 years.

Although there seems to be no support from the case study for the notion that the more insourced FM is currently, the less outsourced it was previously (as David Jones was seen to go from 100% insourced to 100% outsourced, then back to 100% insourced). It must be remembered, however, that it was concluded that, in fact, David Jones did not truly outsource its FM 100%. It failed to transfer ownership and control of the process to the outsource provider, thus diluting the dynamics of the outsourcing decision, as previously discussed.

It could therefore be argued that there was only partial outsourcing (when considering the previously accepted definition of outsourcing) and therefore the notion that the more insourced FM is currently, the less outsourced it was previously, would certainly hold true for David Jones.

It would also be consistent with the proposition that more staff are required to deliver partial outsourcing strategies. It was found in the case study that the David Jones management staff, by default, managed the FM delivery alongside the outsource management staff, effectively doubling management staff numbers.

David Jones certainly corrected its inefficient FM through outsourcing, which could be considered quite radical in terms of its history and compared with the findings of these results. However, a 100% shift back in-house seems to go against the trend found within these results. A more conservative approach (say, partial insourcing) may

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<sup>71</sup> Staff numbers refers to management staff for the procurement method referred to, expressly for the purpose of managing the FM delivery.

have been adequate and possibly more sustainable in the long term. This, however, is conditional to the operating environment, as previously discussed.

#### **7.4 VALUE AND COST RESULTS FOR OUTSOURCED AND INSOURCED METHODS**

It was previously discussed that there are both perceived cost and value implications for both in-house and outsourced FM delivery, and that each method has unique cost and values attributed to it. When measuring these costs and values it is important to define them, grouping them into the categories, as listed in Tables 20, 25, 29 and 33.

##### ***INDEPENDENT VARIABLES FOR OUTSOURCING VALUE***

As previously established, the independent variables for outsourcing value are defined as:

1. A decentralised organisational structure exists
2. Service Level Agreements are simple
3. Influence from globalisation on the organisation exists
4. Bounded rationality exists within the organisation
5. The FM function is considered non-core to the organisation
6. Competitive pressure exists.

##### ***DEPENDENT VARIABLES FOR OUTSOURCING VALUE***

The dependent variables for outsourcing value are defined as:

- a. Transfer leverages (virtually leveraging off the wholesale change process to enhance productivity)
- b. Economies of scale (through the service companies' size, and combined service companies market share)
- c. Increased competitive advantage (by shedding non-core functions and re-allocating focus and assets to core production activities)
- d. Increased flexibility (by shedding staff and gaining contract flexibility to enable production techniques to be re-aligned as and when required)

- e. Access to increased specialisation (specifically in technology and updated processes).

#### ***INDEPENDENT VARIABLES FOR OUTSOURCING COSTS***

The independent variables for outsourcing costs are defined as:

1. Increased monopoly provided to the service-provider afforded under the outsourcing contract
2. A high demand of relevant knowledge workers required
3. Use of multiple outsource providers by the client organisation
4. Difficulty in gaining cooperation by the outsource providers.

#### ***DEPENDENT VARIABLES FOR OUTSOURCING COSTS***

The dependent variables for outsourcing costs are defined as:

- a. Increased overall monitoring costs
- b. Decreased control (locked into contracts and loss of bargaining power)
- c. Decreased staff conditions (for the provider's FM staff in general)
- d. Decrease in quality and quality control (due to quality shading whereby cost decreases are achieved through quality reductions)
- e. Increase in hollowing out of the organisation (whereby the service company acquired some of the company's substance to varying degrees)
- f. Decrease in core competencies due to hollowing-out
- g. Decrease in flexibility (due to set-up costs and monopoly of supply).

#### ***INDEPENDENT VARIABLES FOR INSOURCE VALUE***

The independent variables for insource value are defined as:

1. The facility management function is considered strategic, or supports core business in a strategic sense
2. There is a centralised organisational structure
3. The firm size is large

4. Ownership is central to the organisation
5. Uncertainty exists in the operating environment
6. Assets are specific in nature.

#### ***DEPENDENT VARIABLES FOR INSOURCE VALUE***

The dependent variables for insource value are defined as:

- a. Reduction in costs (cost of transacting lower than in the marketplace due to less monitoring time required)
- b. Increased flexibility (due to ownership and internal organisation being easier to co-ordinate and manage)
- c. Little or no opportunism (where the company worked together as opposed to a conflict of external suppliers all vying for business)
- d. Increased overall control of the FM function and its outcomes.

#### ***INDEPENDENT VARIABLES FOR INSOURCE COSTS***

The independent variables for insource costs are defined as:

1. The level of complexity of the multidisciplinary FM service provided
2. The number of functions or categories grouped under the FM service.

#### ***DEPENDENT VARIABLES FOR INSOURCE COSTS***

The dependent variable for insource costs is defined as:

- a. Ever-increasing staff numbers (creating non-productive bureaucracy)

### **7.5 OUTSOURCE VALUE RESULTS**

By referencing and measuring the previously hypothesised dependent and independent variables for outsourced value (refer to Table 20), it can be seen that



outsourced value results (The dependent variables) are higher for those that are more outsourced than those that are not (refer to Flow Chart 27).

Being higher further illustrates that more perceived value is achieved whilst outsourcing for the “recipe” postulated for outsource value. Thus this recipe holds true more for outsourcing than for insourcing under these conditions. This may confirm when best to outsource. It should also be noted that more perceived value was achieved for those that outsourced, even though the independent variables, or value drivers, scored lower for those more outsourced, supporting the recipe’s relevance even further.

### ***COMPARISON TO THE DAVID JONES CASE STUDY***

This was also confirmed in the case study. David Jones received value from outsourcing in four<sup>72</sup> of the five major value driver areas during its outsourcing delivery method, which were either not realised, or realised to a much lesser extent during in-house methods.

Thus it could be suggested that the hypothesis for outsourced value has been further supported.

Also, we saw that in the case study the recipe for maximum outsource value did deliver savings, but when the recipe changed this value quickly diminished.

#### **7.5.1 OUTSOURCE VALUE – RATIO-ADJUSTED RESULTS**

Also, we can further predict just how much value would have been achieved based on the current alignment of the dependent variables with the independent variables for each strategy; if we theorised a “maximum” independent variable alignment (that is, a ratio adjusted score based on the presupposition that the organisation’s operating environment is fully aligned to its current FM procurement and delivery method).

Once again, those that outsourced more scored much higher outsourcing values (refer to Table 21 and Figure 13).

This is made possible in that not only were the average scores higher for those that outsourced more, but this was achieved with a higher ratio (1 to 10.15), indicating

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<sup>72</sup> To a lesser extent, in the area of competitive advantage, David Jones received less outsource value, and this was in fact one of the main reasons why David Jones brought the FM delivery back in-house, as competitive advantages for David Jones was linked to cost efficiencies. In comparison, this area of competitive advantage outsource value was also the lowest averaged value realization at 68.5% for the questionnaire results as well.

that this value was easily and more conclusively achieved than those with less outsourcing, as they also had a lower dependent/independent variable ratio.

So assuming that the organisations surveyed had 100% of the recipe, the resultant perceived value demonstrates the recipe's advantage for outsourcing over insourcing under these conditions.

Outsource Value			
<i>Independent Variable</i> <sup>46</sup>	75%+ Outsourced	75%+ Insourced	50% Out/Insourced
Bounded rationality	52.6%	34.8%	54.2%
FM Non-core	75.8%	75.6%	73%
Simple SLAs	50%	66.2%	58.8%
Decentralised	76.6%	78%	75.2%
Competitive Environment	49.2%	57%	65.8%
Globalised environment	42.6%	41.6%	40%
<b>Averaged Total</b>	<b>57.80%</b>	<b>58.87%</b>	<b>61.17%</b>
<i>Dependent Variable</i> <sup>45</sup>	75%+ Outsourced	75%+ Insourced	50% Out/Insourced
Transfer leverages	71.6%	58.8%	73.8%
Economies of scale	73.4%	65.8%	65.8%
Competitive advantages	68.4%	56.4%	57.6%
Flexibility	75%	83.8%	68.2%
Specialisation Advantages	77.6%	68.2%	74.2%
<b>Averaged Total</b>	<b>73.2%</b>	<b>66.6%</b>	<b>67.92%</b>

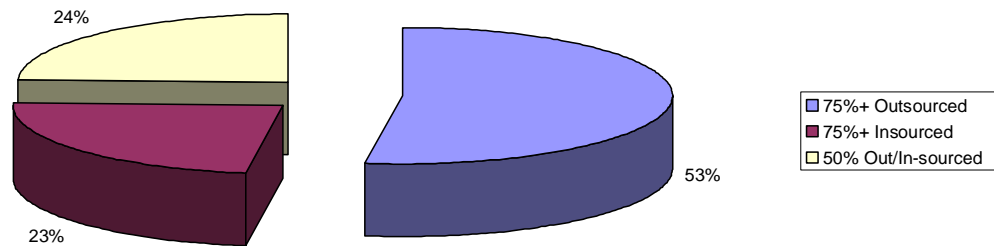
**Table 20 – Outsource “Value” Results**

**Independent/Dependent Ratio Maximum  
Possible Value and Cost – Outsource Value**

	75%+ Outsourced	75%+ Insourced	50% Out/Insourced
Ratio-adjusted Outsource Value	730.70% <sup>73</sup>	327.75%	342.00%
Ratio independent to dependent	1 to 10.15	1 to 4.55	1 to 4.75

**Table 21 – Achievable “Outsourced Value” – Independent to Dependent Applied  
Adjusted Ratios**

<sup>73</sup> Figures expressed as a percentage of a possible achievable score, with 100% being the maximum possible score without being ratio adjusted.



**Figure 13 – Overall outsourced value realisation comparison**

It should also be noted that the high theorised possible percentages (refer to Table 21) indicate that much more outsource value is attainable by all FM procurement strategies (especially those that outsource more) should they be closer aligned with the independent variables (refer to Table 21).

### ***COMPARISON TO THE DAVID JONES CASE STUDY***

This will be discussed further in subsequent chapters of this thesis, however, it was seen in the case study that the anticipated value that David Jones expected from outsourcing FM was short-lived (only two years in duration). As determined by the case-study findings, and when comparing against the independent variables listed in Table 21, David Jones was also not 100% aligned to achieve maximum value. In that David Jones eventually considered its FM also as a strategic cost-efficiency function “during” the outsource delivery strategy.

Considering this, this had changed the dynamics of this variable from its original definition of non-core, thus diminishing the return on value. This is comparable with the findings of the questionnaire results, in that FM was also considered strategic by an average of 75.8% (refer to Table 2) for those that outsourced 75% or more of their FM.

And as a result, in the area of flexibility value, firms became less flexible, due to hollowing-out and corporate knowledge staff retention issues.<sup>74</sup> This would explain the low flexibility average value score in Table 20.

Another area that would have contributed to lower outsource values would be in the area of SLA management. David Jones had simple SLAs, however, each individual contract, which was outside the commercial ownership of the outsource provider, had numerous SLAs. This led to performance measurement and ambiguity issues with the outsource provider when considering performance measurement at bonus time. This is consistent with the results of the questionnaire, in that on average only 50% of those that outsourced 75% or more had simple SLAs, thus a reduction in the potential value derived from outsourcing occurred.

So there also seems to be a situation in which organisations that outsource their FM may not be monitoring the recipe postulated in this thesis.

### **7.5.2 T-TEST –SIGNIFICANT OUTSOURCE “VALUE” VARIABLE DIFFERENCES**

Thus by using t-test analysis, it can be further identified which areas of outsourced value are significantly different when comparing each FM Procurement and delivery strategy.

In this way the more important parts of the recipe can be brought to light, that is, which value propositions that are more intense are seemingly produced from the recipe?

### ***COMPARING INSOURCED WITH OUTSOURCED METHODS***

When comparing Insourced<sup>75</sup> FM procurement methods with other, less insourced methods, we see a clear trend of increasing specialisation value, that is, the more outsourced, the more specialisation advantages were realised. A similar trend can be seen with economy of scale value as well (refer to Tables 22, 23 and Appendix 2 Table 41). This would indicate that, when comparing means, outsourcing does deliver significantly more specialisation and economies of scale advantages than insourced methods, as previously discussed.

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<sup>74</sup> Corporate knowledge retention would reduce flexibility by reducing the amount of desired staff reductions without necessarily increasing productivity

<sup>75</sup> It should be noted that even though the participants were insourced for this bracket whilst completing the questionnaire, the question was designed specifically to address the current outsource value still being realised by the participants from previous outsourced strategies. Those who had never previously outsourced were excluded from these results.

The two stand-out outsourcing advantages delivered over insourced methods were specialisation and economies of scale. This is directly linked to the extent of outsourcing. More of one delivers more of the other.

**Table 22 – Independent Samples Test for 100% Insourced – Outsource Value**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower      Upper	
Compared against 75% insourced										
Bounded rationality	Equal variances assumed	4.721	.032	-3.772	104	.000	-.809	.214	-1.234	-.384
	Equal variances not assumed			-3.258	34.55 3	.003	-.809	.248	-1.313	-.305
SLAs	Equal variances assumed	.266	.607	2.071	101	.041	.467	.225	.020	.914
	Equal variances not assumed			2.011	41.04 3	.051	.467	.232	-.002	.936
Economies of scale	Equal variances assumed	1.116	.299	-1.881	32	.069	-.875	.465	-1.823	.073
	Equal variances not assumed			-1.620	9.612	.137	-.875	.540	-2.085	.335
Flexibility	Equal variances assumed	.004	.947	2.945	105	.004	.450	.153	.147	.753
	Equal variances not assumed			2.793	38.95 0	.008	.450	.161	.124	.776
Specialisation	Equal variances assumed	8.678	.006	-2.152	32	.039	-.865	.402	-1.684	-.046
	Equal variances not assumed			-1.576	8.295	.152	-.865	.549	-2.124	.393

### Independent Samples Test for 100% Insourced Continued...

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Upper      Lower	
Compared against 50% insourced										
Bounded rationality	Equal variances assumed	11.78 3	.001	-4.509	95	.000	-1.168	.259	-1.683	-.654
	Equal variances not assumed			-3.401	18.88 6	.003	-1.168	.344	-1.888	-.449
SLAs	Equal variances assumed	5.071	.027	1.782	92	.078	.487	.273	-.056	1.030
	Equal variances not assumed			1.567	20.97 6	.132	.487	.311	-.160	1.134
Transfer leverages	Equal variances assumed	3.619	.070	-2.334	22	.029	-.938	.402	-1.771	-.104
	Equal variances not assumed			-1.928	9.175	.085	-.938	.486	-2.034	.159
Flexibility	Equal variances assumed	4.270	.041	4.641	96	.000	.885	.191	.506	1.263
	Equal variances not assumed			3.696	19.45 0	.001	.885	.239	.384	1.385
Specialisation	Equal variances assumed	11.21 3	.003	-2.228	23	.036	-.956	.429	-1.843	-.068
	Equal variances not assumed			-1.732	8.433	.120	-.956	.552	-2.217	.305
Compared against 75% outsourced										
Bounded rationality	Equal variances assumed	6.024	.016	-3.834	98	.000	-.913	.238	-1.385	-.440
	Equal variances not assumed			-3.118	23.931	.005	-.913	.293	-1.517	-.308
SLAs	Equal variances assumed	2.703	.103	4.119	95	.000	1.079	.262	.559	1.598
	Equal variances not assumed			3.540	25.189	.002	1.079	.305	.451	1.706
Flexibility	Equal variances assumed	1.975	.163	3.591	99	.001	.646	.180	.289	1.003
	Equal variances not assumed			2.922	23.901	.007	.646	.221	.190	1.103
Specialisation	Equal variances assumed	4.139	.052	-2.298	26	.030	-1.100	.479	-2.084	-.116
	Equal variances not assumed			-1.928	9.577	.084	-1.100	.571	-2.379	.179

### Independent Samples Test for 100% Insourced Continued...

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Upper      Lower	
Compared against 100% Outsourced										
Bounded rationality	Equal variances assumed	4.026	.048	-4.179	82	.000	-1.963	.470	-2.897	-1.028
	Equal variances not assumed			-2.252	3.076	.108	-1.963	.871	-4.697	.772
Strategic	Equal variances assumed	1.312	.255	-1.299	83	.197	-.710	.546	-1.797	.377
	Equal variances not assumed			-2.270	4.123	.084	-.710	.313	-1.568	.148
Economies of scale	Equal variances assumed	3.810	.080	-2.194	10	.053	-1.625	.741	-3.275	.025
	Equal variances not assumed			-2.917	9.558	.016	-1.625	.557	-2.874	-.376

**Outsourced FM Achieved Highest Theorised Value**

Those that outsourced achieved the highest score for transfer leverages, competitive advantages, and especially specialisation and economies of scale advantages.

**Confirms Case Study Findings**

This is similar to the results of the case study where it was shown that David Jones also experienced value in these areas whilst outsourced.

**Most Firms Under-realising Full Outsourcing Potential**

However, the results also indicated that most firms are not using this to their advantage and are under-realising the full potential of outsourcing value.

**Outsourced FM Twice as Likely to Achieve This Value**

The results also indicated that those that outsourced achieve these value propositions much easier than those that insource, by almost 50%, especially if bounded rationality existed.

**Simplify SLAs and Outsource Non-core Only**

Thus the results indicated that SLAs should be more simplified whilst outsourced, and firms should only outsource functions within FM not regarded as strategic.

**Flow Chart 27 – Outsource Value Dynamics**



## ***FIFTY PER CENT IN/OUTSOURCED METHODS REAP HIGHEST VALUE THROUGH TRANSFER LEVERAGES***

Transfer leverages, however, were only significantly different when compared to 50/50 methods. This insourced method reported significantly less transfer leverages, but there were no significant differences reported when compared against other methods. Transfer leverages were also realised more by those firms that 50/50 their FM delivery (refer to Table 23). One explanation for this could be that those that outsource only 50% of their FM delivery relied on transfer leverage benefits to make a switch viable. Only outsourcing half of a firm's FM would obviously reap only half of the specialisation and economies of scale benefits. However, the results also indicate that transfer leverages were certainly not halved, but in fact became the most significant value proposition. Transfer leverages became almost independent of the extent or amount of outsourcing, allowing firms to transfer easily.

## ***NO OPERATIONAL FLEXIBILITY BENEFITS FOR OUTSOURCED METHODS***

In addition, there were no comparable flexibility benefits from outsourced methods over insourced methods, as previously discussed. On the contrary, the reported significant differences indicated a trend in the flexibility value for insourced options, rather than outsourced methods. This may be due to the "operational" nature of the term "flexibility" within the context of the questionnaire which would not, therefore, be correctly determined in this type of analysis (that is, t-test analysis).

Flexibility, in the case of outsourced value, was previously defined as that high-level overall flexibility made available from outsourcing previously insourced methods, and in particular, with the freedom to perform timely staff number fluctuations. This type of value will be analysed differently to ensure meaningful results.

This suggests that organisations may not consider flexibility as a value proposition of outsourcing. However, the ability to transfer unwanted assets and to scale the FM delivery up or down as required should be considered a form of high-level flexibility. This will be discussed further in this chapter.

## ***BOUNDED RATIONALITY AND OUTSOURCING***

Interestingly, when compared with insourced options, those that outsourced more also reported significantly more bounded rationality (except for the 50/50 method – which reported more bounded rationality than those that were 75% outsourced, and in the

overall average score; refer to Table 20). This would seem to confirm the proposition that the more bounded rationality that existed within the firm, the greater value was attainable from outsourcing.

This part of the recipe suggests that a key ingredient is the inability of firms to self-deliver FM. The results suggest that true outsourcing is more likely to take place when firms are incapable of self-delivering FM, allowing the benefits of the External Labour Market to be more easily obtained.

## ***STRATEGY AND SLA RESULTS***

Two notable variations from the previous hypothesised results is that of the firms' strategic FM intent and SLAs. The t-test reported a significant difference occurred between those that insourced compared to those that outsourced, as previously discussed. Those that insourced regarded their FM as less strategic, or non-core, than those that outsourced (Price 2004).

It was previously hypothesised that those that outsourced would outsource, having regarded their FM as non-core, however, the opposite is the case in these findings. This will be discussed further in this chapter; however this may explain the low perceived value results achieved for the in-house method in this data set.

Another notable difference was that those that outsourced had significantly more complex SLAs than those that insourced, as previously discussed. It was previously postulated that those firms that had simple SLAs would reap greater value from outsourcing than firms that had complex SLAs. However, these comparisons indicate that those that outsource more have less simple SLAs than those that insourced. This could indicate that achieving simple SLAs whilst outsourcing is more complex than when insourced.

In other words, SLAs may actually need to be more complex when outsourced than when insourced. However, should the SLAs be simplified further, even more outsourced value may be obtained. This could be demonstrated by ratio-adjusting the scores, assuming the SLAs were simplified to ascertain the resultant value derived from this.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Compared against 50% insourced										
Transfer leverages	Equal variances assumed	4.972	.032	-2.040	38	.048	-.688	.337	-1.370	-.005
	Equal variances not assumed			-2.259	37.436	.030	-.688	.304	-1.304	-.071
Compared against 75% Outsourced										
SLAs	Equal variances assumed	.920	.343	1.798	44	.079	.612	.340	-.074	1.297
	Equal variances not assumed			1.752	36.316	.088	.612	.349	-.096	1.319
Compared against 100% outsourced										
Strategic	Equal variances assumed	.472	.498	-1.612	28	.118	-.769	.477	-1.747	.209
	Equal variances not assumed			-2.260	5.691	.067	-.769	.340	-1.613	.075
Economies of scale	Equal variances assumed	2.139	.155	-1.366	28	.183	-.750	.549	-1.874	.374
	Equal variances not assumed			-2.300	8.201	.050	-.750	.326	-1.499	-.001

**Table 23 – 75% Insource T-test Comparison – Outsource Value**

### **7.5.3 OUTSOURCE VALUE CAUSE AND EFFECT ASSOCIATIONS – CORRELATION ANALYSIS**

Further, by using multiple Spearman's rho correlation analysis, we can further determine the relationship between the variables, if any.

Given the hypothesis previously postulated, it is expected that there would be correlations between the independent and dependent variables for outsourced value.

Correlation analysis will add a different dimension to the analysis of the recipe, that is, confirm that the drivers of insource value or the insource recipe do not overlap with the outsource recipe. This will highlight the uniqueness of both and confirm their correct application under certain conditions.

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#### ***OUTSOURCED VALUE CORRELATIONS***

For those firms that insourced 100%<sup>76</sup>, only the independent variables of “FM non-core”, and “decentralised” operations had no correlations. This is to be expected, as these two independent variables also are indicative of Insourced value. As those firms that consider their FM as strategic, being centralised in operations, reap value from insourcing. Therefore it seems confirmed that they do not correlate with any hypothesised outsourced value dependent variable (refer to Flow Chart 28).

All other dependent and independent variables had significant two-tailed and/or one-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Appendix 2 Table 42).

From these multiple correlations (refer to Appendix 2 Table 42) we see that flexibility is the only correlation between the independent variables and the dependent variables. This is not surprising, as flexibility also rated significantly higher for those that insourced than for those that outsourced (refer to Table 23). This is because the attributed flexibility value is now assumed to be day-to-day operational flexibility rather than the high-level labour input flexibility attributed to outsourcing.

And, being 100% insourced, it is not expected that any other correlations between the independent and dependent variable would exist to any great extent in general.

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<sup>76</sup> It should be noted that even though the participants were insourcing for this bracket whilst completing the questionnaire, the question was designed specifically to address the current outsource value still being realised by the participants from previous outsourced strategies. Those that had never previously outsourced were excluded from these results.

Further, from these multiple correlations we have determined that causal links within all the variables (refer to Appendix 2 Table 42) exists (except for “FM non-core”, and “decentralised”, as previously discussed), confirming their association with outsource value dependencies.

For those firms that insourced 75% of their FM (and thus outsourced 25% of their FM), we see that only the independent variable of “simple SLAs” is not correlated to any dependent variable. This can be explained, given that any FM procurement strategy that has either a majority or similar quantity of insourced delivery would not cause the independent variable of “simple SLAs” to correlate to outsource value dependencies, given that the SLAs are also attributed to the insourced delivery portion.

Interestingly, we see this happening where those firms that outsourced 75% or more of their FM also reported the most complex SLAs compared to both 50/50 and 75% or more insourced methodologies (refer to Table 20). Yet for those firms that have insourcing included in their strategy, either the SLA is not correlating, or not correlating with the value dependencies.

Insourced SLAs may be simple, but are directed to the individual service-providers, and not the overall outsource management firm. All other dependent and independent variables had significant two-tailed and/or one-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Appendix 2 Table 43).

For those firms that outsource 50% of their FM, and thus insource 50% of their FM we see that, once again, the independent variable of “simple SLAs” is not correlated for reasons discussed previously. The only other independent variable not correlated is that of “non-core FM”.

This can be explained with the same reasoning given to this particular independent variable as for the 100% insource results.

All other dependent and independent variables had significant two-tailed and/or one-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Appendix 2 Table 44).

For those firms that outsourced 75% or more of their FM (and thus insourced 25%), we see that all dependent and independent variables had significant two-tailed and/or one-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Table 24).

Interestingly, the dependent variable “transfer leverages” was the only dependent to independent correlation, correlating with the independent variable “competitive environment”. This would suggest that for those that mainly outsource their FM, value is attained predominantly through transfer leverages in a competitive environment (refer to Table 24). Whereas in the case of those that outsource 50% of their FM,

most, but not all independent variables correlate with dependent variables, and with those firms that outsource only 25% of their FM, independent to dependent correlations are spread across all value areas. However this was to corresponding lesser value quantities than those that outsource 75% or more (refer to Appendix 2 Tables 43 and 44).

		Bounded Rationality	SLAs	Competitive	Globalised	Transfer Leverages	Economies of scale	Increase in Competencies
Strategic	Correlation coefficient	.398(*)			.381(*)			
	Sig. (1-tailed)	.041			.049			
	N	20			20			
De/Centralisation	Correlation coefficient		-.627(**)	.433(*)				
	Sig. (1-tailed)		.002	.028				
	Sig. (2-tailed)		.003	.056				
	N		20	20				
Competitive	Correlation coefficient		-.434(*)		.411(*)	-.464(*)		
	Sig. (1-tailed)		.028		.036	.020		
	Sig. (2-tailed)		.056		.072	.040		
	N		20		20	20		
Economies of scale	Correlation coefficient							.470(*)
	Sig. (1-tailed)							.018
	Sig. (2-tailed)							.037
	N							20
Flexibility	Correlation coefficient					.381(*)		
	Sig. (1-tailed)					.049		
	Sig. (2-tailed)					.097		
	N					20		
Specialisation	Correlation coefficient						.769(**)	.678(**)
	Sig. (1-tailed)						.000	.001
	Sig. (2-tailed)						.000	.001
	N						20	20

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 24 – 75% Outsourced Correlations for “Outsource Value”**

For those firms that outsourced 100% of their FM, we get inconsistent results whereby correlations exist for all areas except “bounded rationality, decentralised, competitive environment, and specialisation”. This can be explained in that the sample size of five respondents is not indicative enough to produce meaningful results. As such, these

results will be discounted unless combined within the 75% or more data sample analysis (refer to Appendix 2 Table 45).

This is indicating that the drivers for outsource value are present for firms that insourced or not if the recipe is present. And that there is a link between them, indicating their relevance to each other. The presences of correlations of this magnitude suggest that cause and effect may have been established for this data set.

**Outsourced Value  
Derived from Theorised  
Dependencies**

The majority of the theorised outsourced value propositions correlated with the theorised causes of outsourced value.

**Nullification of Value if  
Mixed FM Delivery  
Methods**

However, some of the outsource value propositions were “nullified” by insource value propositions when there existed a mix or part mix of both in-house and outsourced FM.

**The More Outsourced  
the Fewer Correlations**

In fact, the more outsourced, the fewer correlations with all other “dependencies”, but the stronger the correlation. The reverse was also true.

**Transfer Leverages in a  
Competitive  
Environment**

And, for those firms that predominantly outsource their FM, “transfer leverages” correlating with “competitive environment” was the main form of value derived.

**Flow Chart 28 – Outsource Value Correlation Results**

## 7.6 INSOURCED VALUE RESULTS

Again, by using the same formula as was used for the outsource value results, and referencing and measuring the previously hypothesised dependent and independent variables for in-house value (refer to Table 25), it can be seen that in-house value

results (the dependent variables) are higher for those that are more insourced than those that are not.

Being higher indicates that more value is achieved whilst insourced for the recipe postulated for in-house value. Thus, this recipe holds true for insourcing but not for outsourcing. This confirms when a firm should insource under these conditions.

## **COMPARISON TO THE DAVID JONES CASE STUDY**

This was also confirmed in the case study, in that David Jones received value from insourcing in all of the four major value areas during its transition from outsourced to in-house FM. Which were either not realised, or realised to a much lesser extent during outsourced methods. Thus it is concluded that the hypothesis for in-house value has been supported.

The David Jones case study supported the notion that the outsourcing recipe delivered perceived value when its operating structure fit the recipe. However as the operating structure changed to fit more of an insource recipe, this perceived value quickly diminished until the function was brought back in-house, from which perceived value was once again re-established. Obviously one of the main resultant costs during this operating environment shift was “overt management” of the outsource provider.

### **7.6.1 RATIO-ADJUSTED RESULTS FOR INSOURCED VALUE**

As we saw for outsource value, we can further predict just how much value would have been achieved based on the current alignment of the dependent variables with the independent variables for in-house value for each strategy. That is, if we theorised a “maximum” independent variable alignment.

Once again, those that insourced more scored higher in-house values (refer to Table 26 and Figure 14).

Also, the negative results<sup>77</sup> suggest that the firms surveyed are not fully realising the maximum theorised potential in-house value. This would allow further value to be obtained with closer dependent and independent variable alignment (refer to Table 36). This supports the previous observation that the firms of the sample that insourced are not looking for value in the areas postulated in this thesis.

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<sup>77</sup> These negative results are a result of firms’ current scores being compared against the theorised maximum score hypotheses, which are based on a 100% alignment to the independent variables.



In-House Value			
<i>Independent Variable</i>	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Large Organisation	91.4	81.2	92.6
Centralised	76.6	78	75.2
Strategic FM	75.8	75.6	73
Owned Assets	94.8	90.6	95
Specific Assets	60	64	60
Uncertain Environment	43.4	41.6	42.4
<b>Averaged Total</b>	<b>73.67</b>	<b>71.83</b>	<b>73.03</b>
<i>Dependent Variable</i>	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Less Monitoring Costs	40	59.6	42.4
More Flexibility	75	83.8	68.2
More Control	56.6	69.2	53
Less Opportunism	35.8	43	30.6
<b>Averaged Total</b>	<b>51.85</b>	<b>63.9</b>	<b>48.55</b>

**Table 25 – In-house Value Results**

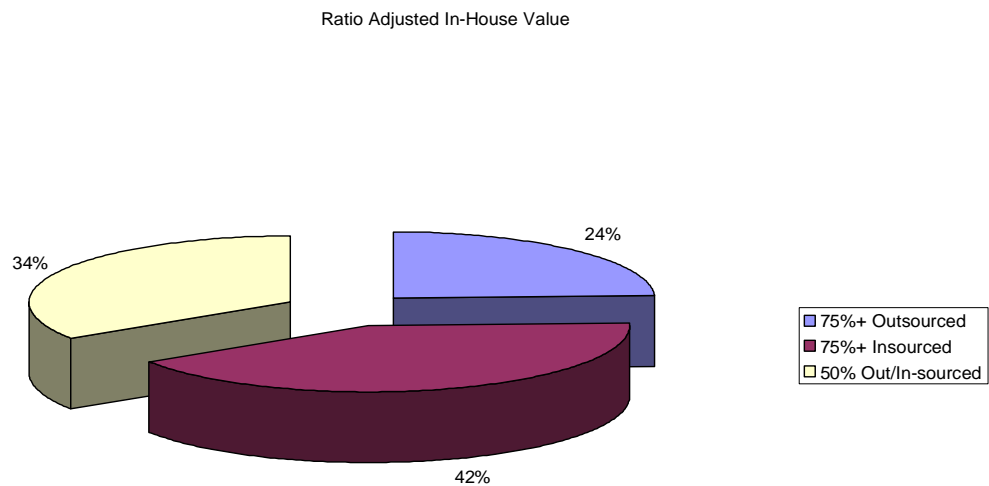
So, assuming that the organisations surveyed had 100% of the recipe, the resultant values demonstrate the recipe's advantage for insourcing over outsourcing for this data set.

**Independent/Dependent Ratio Maximum Possible Value and Cost – Insourced Value**

	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Ratio-adjusted In-house Value	-395.60% <sup>78</sup>	-322.93%	-353.43%
Ratio Independent to Dependent	1 to -0.54	1 to -0.50	1 to -0.572

**Table 26 – Achievable “Insourced Value” – Independent to Dependent Applied Adjusted Ratios**

<sup>78</sup> Figures expressed as a percentage of a possible achievable score, with 100% being the maximum possible score without being ratio-adjusted.



**Figure 14 – Overall Insourced Value Realisation Comparison**

### ***COMPARISON TO THE DAVID JONES CASE STUDY***

When considering the case study, we see that this under-value realisation for insourced FM is evident, whereas when David Jones was originally insourced, it was not fully aligned to the independent variables postulated for in-house value. That is, David Jones was decentralised, not centralised in operations, and FM cost efficiencies was not considered strategic at the time. This resulted in a decision to outsource the function – seeking further value from the FM operation. However, when the decision was made to return to insource FM, for reasons previously discussed, these independent variables were aligned, allowing for more value than previously realised (refer to Flow Chart 29).

This highlights the uniqueness of both recipes; if organisations change in their operation and management environments, care should be taken to ensure the correct level of out/insourcing is applied to the current recipe.

### **7.6.2 T-TEST – SIGNIFICANT INSOURCE “VALUE” VARIABLE DIFFERENCES**

Thus, by using t-test analysis, it can be further identified which areas of insourced value are significantly different when comparing each FM procurement and delivery strategy.

Also, this altering of out/insourcing levels has ramifications within the recipe as well. That is, different emphasis is placed on certain value propositions as the outsourcing levels go up or down for both the insource and outsource recipes. The t-test has confirmed this, indicating which resultant value areas are affected more from partial outsourcing etc.

#### ***COMPARING INSOURCED WITH OUTSOURCED METHODS***

When comparing insourced methods against other, less insourced methods (refer to Table 37), we see that significantly less management time is spent on managing FM assets<sup>79</sup> by those that insource than by those that outsource, with a trend evident (refer to Tables 27, & Appendix 2 Tables 48 & 49). There was also significantly less flexibility for those that outsourced than for those that insourced.

However, overall total perceived value derived from the insourced recipe is evident when compared against those that outsourced.

#### ***SIGNIFICANT CONTROL LOSS AND MORE OPPORTUNISM***

The most significant difference was in the area of control. Those that outsourced 75% of their FM experienced 35.65% less control than those that insourced 100% of their FM (refer to Appendix 2 Table 49). They were also 14.46% significantly more affected by opportunism than those that had 100% insourced.

These two main value areas should be considered the cornerstone benefit of insourcing.

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<sup>79</sup> It was previously theorised that monitoring costs are associated with transaction costs when firms outsource their FM.

**Insource Value Propositions Greater for Those Insourced**

Those that in-source achieved highest value for monitoring costs, flexibility, control and reduced opportunism, confirming the theorised value propositions.

**Insource Value Results Confirm Case-study Findings**

This also confirms the case study, as David Jones also achieved the theorised value from these areas.

**Greater Control for Those Insourced**

The majority of value was derived from greater control by over 35% than with outsourced FM delivery. Once again, this was evident in the case study as well.

**Insource Value Potential Under-realised**

The results also indicated that firms are not fully realising the potential insource value in these areas. This was also evident in the David Jones case study.

**Flow Chart 29 – Insource Value Realisation Dynamics**

**Table 27 – Independent Samples Test 100% Insourced – Insourced Value**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of	the Difference
Compared against 75% Insourced									Lower	Upper
Size of organisation	Equal variances assumed	.849	.359	-2.140	104	.035	-.486	.227	-.935	-.036
	Equal variances not assumed			-2.229	45.561	.031	-.486	.218	-.924	-.047
Management time	Equal variances assumed	1.760	.188	-2.776	103	.007	-.690	.249	-1.184	-.197
	Equal variances not assumed			-2.552	37.542	.015	-.690	.270	-1.238	-.143
Compared against 50% Insourced										
Size of organisation	Equal variances assumed	9.367	.003	-2.588	94	.011	-.688	.266	-1.215	-.160
	Equal variances not assumed			-3.572	33.935	.001	-.688	.192	-1.079	-.296
Flexibility	Equal variances not assumed	4.270	.041	-3.673	23.366	.001	-1.034	.282	-1.616	-.452
	Equal variances assumed			4.641	96	.000	.885	.191	.506	1.263
	Equal variances not assumed			3.696	19.450	.001	.885	.239	.384	1.385
	Compared against 75% Outsourced									
Size of organisation	Equal variances assumed	7.568	.007	-2.590	97	.011	-.641	.248	-1.133	-.150
	Equal variances not assumed			-3.277	39.105	.002	-.641	.196	-1.037	-.246
Management time	Equal variances assumed	.130	.719	-4.279	97	.000	-1.152	.269	-1.686	-.618
	Equal variances not assumed			-4.013	27.283	.000	-1.152	.287	-1.741	-.563
Flexibility	Equal variances assumed	1.975	.163	3.591	99	.001	.646	.180	.289	1.003
	Equal variances not assumed			2.922	23.901	.007	.646	.221	.190	1.103

### Independent Samples Test 100% Insourced Continued ...

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Control	Equal variances assumed	12.225	.001	-3.469	99	.001	-.819	.236	-1.287	-.350
	Equal variances not assumed			-2.610	22.651	.016	-.819	.314	-1.468	-.169
Opportunism	Equal variances assumed	.353	.554	-1.652	98	.102	-.475	.288	-1.046	.096
	Equal variances not assumed			-1.742	31.360	.091	-.475	.273	-1.031	.081
Compared against 100% Outsourced										
Strategic	Equal variances assumed	1.312	.255	-1.299	83	.197	-.710	.546	-1.797	.377
	Equal variances not assumed			-2.270	4.123	.084	-.710	.313	-1.568	.148
Asset ownership	Equal variances assumed	3.837	.054	-.976	82	.332	-.475	.487	-1.443	.493
	Equal variances not assumed			-4.391	79.000	.000	-.475	.108	-.690	-.260
Management time	Equal variances assumed	1.374	.245	-2.154	81	.034	-1.152	.535	-2.216	-.088
	Equal variances not assumed			-2.710	3.524	.061	-1.152	.425	-2.398	.094

### COMPARISON TO THE DAVID JONES CASE STUDY

Certainly, the David Jones case study supports these findings, in all areas. David Jones insourced its FM to reduce the amount of management time spent on managing the outsource provider, to avoid the perceived opportunistic claims of the outsource provider to gain control over its FM process, and to increase its flexibility. This is as reflected in its new FM organisation chart.

This has been no more clearly displayed than in the case study. These two main insource value drivers differentiated the outsourced/insourced delivery in the minds of management and became the impetus to return back in-house.

### **7.6.3 INSOURCE VALUE CAUSE AND EFFECT ASSOCIATIONS – CORRELATION ANALYSIS**

Again, by using multiple Spearman's rho correlation analysis, we can further determine the relationship between the insourced variables, if any.

For those firms that insourced 100% of their FM, we see that all dependent and independent variables had significant two-tailed and/or one-tailed correlations to the 0.05 and/or 0.01 significance levels, except for the independent variables “centralised” and “owned assets” (refer to Table 28 and Flow Chart 30)

This is not surprising, as these two variables deliver value by offering control to a firm (as previously determined). In the absence of any outsourced influence (which would not be the case for those that outsource 25% of their FM), we would not expect to see the dependent variable of “control” correlating as the respondents have no alternate reference with which to compare when ranking the control variable.

This is confirmed by those that insourced only 75% of their FM, as there is a correlation linking these two variables as expected.

These correlations also suggest that the outsource recipe does not work for the insource recipe. Thus highlighting the unique attributes of the value drivers for insource options.

#### ***STRATEGIC FM IS A “LINKING” CORRELATION***

One notable correlation that is consistent with most of the FM delivery methods for in-house value was the independent variable “strategic”. It correlated with “opportunism, control, flexibility, and uncertainty (refer to Table 28 and Appendix 2 Tables 50 to 52). This would confirm that this dynamic is an important factor in the delivery of value for those that insourced part or all of their FM.

For those firms that insourced 75% of their FM (and thus outsourced 25%), we see that all dependent and independent variables had significant two-tailed and/or one-tailed correlations to the 0.05 and/or 0.01 significance levels except for the independent variable “uncertain environment” (refer to Appendix 2 Table 50).

This is interesting, as it is the only FM procurement method (apart from 100% outsourced which will be discussed) that has no correlation for “uncertainty”. This is not easily explained. All other correlating FM procurement methods align as expected with “uncertainty”.

This finding once again reinforces the idea that firms should not outsource FM functions that are regarded as strategic to the firm in these conditions.

		Size of Organisatio n	Strategic	Uncertainty	Flexibility	Control
Assets unique specific	Correlation coefficient			.214(*)	.266(**)	
	Sig. (1-tailed)			.029	.008	
	Sig. (2-tailed)				.017	
	N			79	80	
Management time	Correlation coefficient	-.242(*)				
	Sig. (1-tailed)	.016				
	Sig. (2-tailed)	.032				
	N	78				
Control	Correlation coefficient				-.334(**)	
	Sig. (1-tailed)				.001	
	Sig. (2-tailed)				.002	
	N				81	
Opportunism	Correlation coefficient		-.235(*)			.240(*)
	Sig. (1-tailed)		.018			.016
	Sig. (2-tailed)		.036			.032
	N		80			80

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 28 – 100% Insourced Correlations for “Insource Value”**

**“NULLIFICATION EFFECTS” CAUSING VALUE FROM “UNCERTAINTY”  
THROUGH PARTIAL OUTSOURCED METHODS**

It is, however, observed that those firms that insource less and outsource more are the only firms for which we see correlations with “uncertainty”, an independent variable, with the dependent, value variables. And when considering the correlation with “uncertainty” for those that insource 100% of their FM, we see that the correlation is not an independent to dependent variable, indicating a weaker link with value (refer to Table 28).

Therefore it could be argued that the value proposition for uncertainty is realised when firms insource 50% or less of their FM. In these cases, it could be argued that operating in an uncertain environment creates the propensity for an outsource provider (especially for those firms that outsource 50% or more) to act unreasonably for reasons as outlined previously. This, however, is then nullified by the insourced resources, creating value through retention of flexibility, control, and the reduction of opportunism.

So in essence, uncertainty in a firm’s operating environment may be of no unique advantage for in-house teams unless there is a percentage of outsourcing as well.



When this is the case, the in-house teams may prevent opportunism which may arise from the outsource percentage, thus possibly adding value to the combined overall FM delivery method.

For those firms that insourced 50% of their FM (and thus outsourced 50%), we see that all dependent and independent variables had significant two-tailed correlations to the 0.05 and/or 0.01 significance levels, except for the independent variables “centralised”, “owned assets”, and the dependent variable “opportunism” (refer to Appendix 2 Table 51).

### ***NULLIFICATION EFFECTS EXPLAINED***

As was the case for those firms that insourced 100% of their FM, we would not expect to see the independent variables “centralised”, and “owned assets” correlating for those firms that outsource 50% of their FM and insource 50% of their FM. This is because these two variables deliver value to insourced FM predominantly through the delivery of control and a reduction in potential opportunism to an organisation. Where there are equal amounts of FM delivery methods in the one firm, we would see that these value proposition would be nullified by the value propositions that outsourcing offers. That is, one set of value propositions seems to lessen the other.

For example, it was previously postulated that outsourcing in a decentralised organisation gives the client organisation control through the outsource provider. As in this case of 50% outsourced and 50% insourced, both centralisation and decentralisation value propositions would come into effect. Therefore, we would not expect to see correlations in this instance given that centralisation or decentralisation could deliver the dependent variable value in this set.

The same principle can be applied to ownership of assets, where the specialisation benefits of the outsource provider may offset the benefits of insourced collaboration of owned assets.

This seems to be supported in the correlation results, given that the dependent variable of “opportunism” was also not correlating in this set. This may indicate, and seem to suggest, that equal amounts of insourcing and outsourcing in one firm may have the effect of reducing the value propositions of both FM delivery methods.

Opportunism was said to be reduced where firms insource due to asset ownership and centralisation. We would expect therefore that opportunism would correlate to some degree in this set. However, as was the case for centralisation and ownership, opportunism as a value proposition is therefore also nullified. This nullification of the value propositions can also be confirmed when considering that

for those firms that outsourced 50% and therefore insourced 50% ranked the lowest value average score for insourced value (refer to Table 25).

For those firms that insourced 25% of their FM (and thus outsourced 75%), we see that all dependent and independent variables had significant two-tailed correlations to the 0.05 and/or 0.01 significance levels. The most significant correlations being with the independent variable uncertainty, which correlated with the dependent variables “control” and “flexibility” (refer to Appendix 2 Table 52).

So firms that have equal amounts of outsourcing and insourcing may expect less perceived value overall, however, the same principle can be applied to perceived overall costs as well.

Firms that have elements of both FM delivery methods recipes in their operating environment may therefore expect this dynamic to be present. This, however, may be compensated for by a more stable FM delivery method over time.

### ***PARTIAL INSOURCING DELIVERS LESS INSOURCE VALUE THROUGH “ALL” VALUE AREAS***

This, and the absence of any non-correlating variables (as was the case for the other FM delivery methods) suggests and confirms that those firms that insource less than they outsource realise the more of the insourced value propositions than those that insource more for this data set. However, the actual value delivered is not as great as for those that insourced more (refer to Table 25).

Also, as a lot of the in-house value propositions are in fact avoidance values, such as prevention of opportunism, control retention, etc., it stands to reason that the more outsourcing that is present alongside insourcing, the greater value will be activated from this part of the recipe for insourcing. However, this may not be desirable overall, as it would be better to simply not have a need for these in the first place. Thus if possible, 50% options should be avoided if the operating environment allows it.

For those firms that outsourced 100% of their FM, we get inconsistent results whereby correlations only exist between the dependent variables “management time” and “opportunism” (refer to Appendix2 Table 53). This can be explained in that the sample size of five respondents is not indicative enough to produce meaningful results. As such, these results will be discounted unless combined within the 75% or more data sample analysis (refer to Appendix 2 Tables 54 & 55).

**Insource Value Derived  
from Theorised  
Dependencies**

The majority of the theorised insourced value propositions correlated with the theorised causes of insourced value.

**Nullification of Value if  
mixed FM Delivery  
Methods**

However some of the insource value propositions were “nullified” by outsource value propositions when there existed a mix or part mix of both in-house and outsourced FM.

**Uncertainty Reduced  
with Partial Insourcing  
FM Delivery**

Firms that use partial outsourced and in-sourced FM delivery methods gain more value from the “uncertainty” variable than those fully insourced through a reduction in opportunism

Firms considering their FM as strategic scored high value, whilst insourced in the areas of control, flexibility, uncertainty, and reduced opportunism.

**Strategic FM Delivering  
In-house Value**

In fact, the more insourced, the fewer correlations with all other “dependencies”, but the stronger the correlation. The reverse was also true.

**The More In-sourced the  
Fewer Correlations**

**Flow Chart 30 – Insource Value Correlation Results**

## 7.7 OUTSOURCED COSTS RESULTS

Again, by using the same formula as was used for value, and referencing and measuring the previously hypothesised dependent and independent variables for *outsourced costs* (refer to Table 29), it can be seen that outsourced cost results (the dependent variables) are higher for those that are more outsourced than those that are not.

Thus the cost recipe for outsourcing also is supported from the data set. Understanding this, firms should try their best to minimise these costs by avoiding the recipe, or changing their procurement method. This may not always be possible.

### COMPARISON TO THE DAVID JONES CASE STUDY

This was also confirmed in the case study, in that David Jones was seen to have been affected by all seven outsourcing costs postulated during the time it outsourced its FM, which were either not realised, or realised to a much lesser extent during insourced methods. Thus further supporting the hypothesis for outsourced costs.

As was seen in the case study, David Jones was monopolised, which seemed unavoidable, however, the attempt to remedy this situation by seeking alternate providers (for cleaning) caused a doubling-up of management time, thus creating more costs.

Outsource Cost			
<i>Independent Variable</i>	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Monopoly	60	61.2	57.6
Not co-operative	20	26.8	21.2
Shortage of skilled workers	59.2	61.2	55.2
Multiple providers	56.6	13	49.4
<i>Averaged Total</i>	<b>48.95</b>	<b>40.55</b>	<b>45.85</b>
<i>Dependent Variable</i>	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Loss of control	43.4	30.8	47
Decreased flexibility	25	16.2	31.8
Reduced staff conditions	49.2	40.4	40
Reduced core competence	55	57.6	54.2
Hollowing-out	53.4	53	49.4
Increased monitoring	60	40.4	57.6
Decreased quality	36.6	26.4	41.2
<i>Averaged Total</i>	<b>46.09</b>	<b>37.83</b>	<b>45.89</b>

**Table 29 – Outsourced Cost Results**

### 7.7.1 RATIO-ADJUSTED SCORES FOR OUTSOURCED COSTS

As we saw previously, we can further predict just how much cost would have been realised based on the current alignment of the dependent variables with the independent variables for outsource costs for each strategy, if we theorised a “maximum” independent variable alignment.<sup>80</sup>

Once again, those that outsourced more scored higher outsource costs than those that outsourced less, with a trend evident (refer to Table 30 and Figure 15). By using ratios this way, it is clear that the independent variables cause much higher amounts of costs, the more firms are outsourcing, thus supporting the hypothesis.

So assuming firms have 100% of the recipe for outsourced costs (created as a result of outsourcing when there is no outsource value recipe present) then it has been demonstrated that the firms will suffer more from these costs than those firms that are not outsourced. Thus outsourcing both creates and exacerbates these costs, presumably when there is a shift in the firm’s operating environment away from the recipe for outsourced value for this data set.

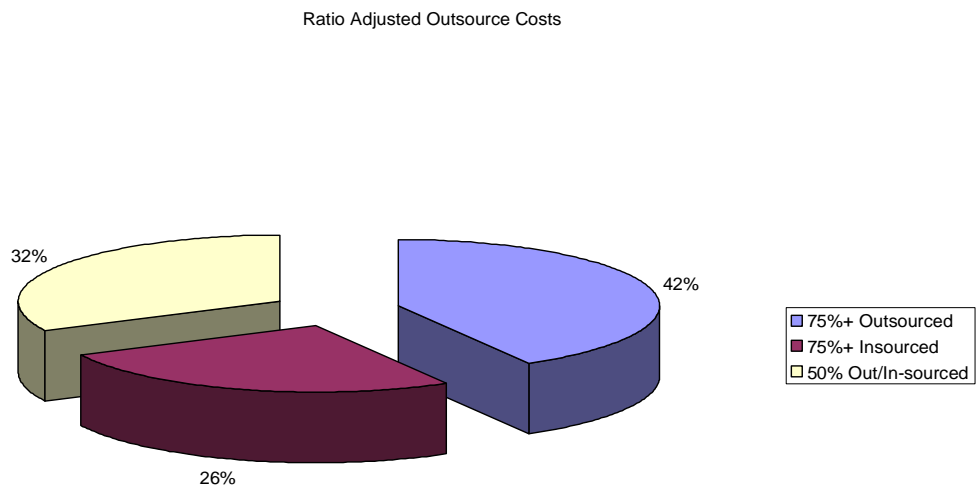
**Independent/Dependent Ratio Maximum Possible Value and Cost – Outsourced Costs**

	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Ratio-adjusted outsourced costs	221.94% <sup>81</sup>	139.60%	171.43%
Ratio independent to dependent	1 to 6.91	1 to 4.34	1 to 5.33

**Table 30 – Probable “Outsourced Costs” – Independent to Dependent Applied Adjusted Ratios**

<sup>80</sup> “Alignment” in this context refers to alignment to the cost drivers, which in actual fact are misalignment to the value drivers in the firm’s operating environment

<sup>81</sup> Figures expressed as a percentage of a possible achievable score, with 100% being the maximum possible score without being ratio-adjusted.



**Figure 15 – Overall Outsourced Cost Realisation Comparison**

### 7.7.2 SIGNIFICANT OUTSOURCE COST DIFFERENCES – T-TEST

Again by using t-test analysis, it can be further identified which areas of outsourced costs are significantly different when comparing each FM procurement and delivery strategy for this data set.

In this way, costs can be further highlighted to investigate which parts of the cost recipe are affected by varying outsourcing levels.

### ***CONTROL LOSS THROUGH OUTSOURCING***

When comparing insourced methods against other, less outsourced methods (refer to Table 31), we see that there were significantly more costs associated with the previous outsource provider<sup>82</sup> in the form of significantly less control for those that outsourced than those that insourced. There was even more control loss for those that outsourced only 50% of their FM.

This also supports the findings of the correlation analysis results for this procurement delivery method (outsourcing), as previously outlined.

<sup>82</sup> Outsource costs for “co-operation” and “shortage of skilled workers” was defined in the questionnaire for those currently in-sourced 100 % as “previous” outsourced costs, thus allowing for the quantification of outsourced costs for those that are currently 100% insourced.

Without a doubt control loss is the biggest issue for outsourcing. However, the whole purpose of outsourcing is to hand over control to the provider (Browne & Wheeler 2006). But these results suggest that control loss can be more than the extent outsourced. Therefore, outsourcing may create control loss independent from the extent outsourced, thus becoming a perceived cost to the organization for this data set.

### ***FLEXIBILITY LOSS THROUGH OUTSOURCING***

The same trend is evident for flexibility reduction (refer to Table 31). In fact, when considering all the various FM delivery methods (refer to Tables 31, & Appendix 2 Tables 56 to 58), all postulated outsourced costs reported significant results in favour of the hypothesis, except for “reduced core competence”. This cost scored higher for those that insourced 75% of their FM than any other FM delivery method.

Accordingly, this suggests that under certain conditions, namely a shift in the firm’s operating environment suiting more of an insourced model, outsourcing can be perceived as costly.

### ***TIME LAG IN REALISING THE “REDUCED CORE COMPETENCE” COST***

Given this “shift”, reduced core competence not immediately showing as a relative outsource cost can be explained in that “reduced core competence” is attributed to a “shortage of skilled workers” for an organisation as a result of outsourcing. Not surprisingly “shortage of skilled workers” scored highest for those that were 75% or more insourced as well. Thus we would therefore expect to see “reduced core competence” progressively realised for some time after the outsourcing decision has been made, and subsequently insourced as well.<sup>83</sup>

We would also expect to see this “reduced core competence” cost more apparent with those currently insourced that also previously outsourced. This would be due to the time lag involved in the complete realisation of this type of outsourcing cost. Thus we would not expect to see a significant difference using t-test analysis, as it would be a cumulative spread across all forms of FM delivery methods of this data set (refer to Flow Chart 31).

Could this cost lag be wrongfully identified as being a product of the new in-house delivery and thus perpetuating cycles back to outsourcing, which was in fact the cause of the cost in the first place? This will be discussed later in this chapter; however

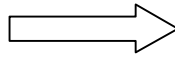
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<sup>83</sup> “Hollowing-out” of an organisation is also realised within a firm after an outsourcing decision has been made, and only after some time has passed.

these results suggest that FM can, under certain conditions, detract from a firm's core competence through secondary influences as previously outlined.

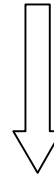
**Outsource Costs Derived  
from Theorised  
Dependencies**

The theorised outsourced cost variables scored highest for those outsourced, confirming the hypothesis and the case-study findings.



**Control Loss Main Cost  
of Outsourcing**

The main cost of outsourcing was in a significant loss of control for the firm, however, all other postulated causes scored high as well.



The variable "reduced core competence", however, proved to become evident only after firms partially moved back in-house when lack of skilled staff became an issue.

**"Reduced Core  
Competence" Is a  
Delayed Cost**

**Flow Chart 31 – Outsourced Costs Realisation Dynamics**



**Table 31 – 100% Insourced T-test Comparison – Outsource Costs**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 75% insourced									Lower	Upper
Outsource nos	Equal variances assumed	248.84 9	.000	-15.355	105	.000	-2.692	.175	-3.040	-2.345
	Equal variances not assumed			-8.611	25.000	.000	-2.692	.313	-3.336	-2.048
Flexibility	Equal variances assumed	.004	.947	2.945	105	.004	.450	.153	.147	.753
	Equal variances not assumed			2.793	38.950	.008	.450	.161	.124	.776
Management time	Equal variances assumed	1.760	.188	-2.776	103	.007	-.690	.249	-1.184	-.197
	Equal variances not assumed			-2.552	37.542	.015	-.690	.270	-1.238	-.143
Compared against 50% insourced										
Outsource nos	Equal variances assumed	296.08 4	.000	-13.643	96	.000	-2.471	.181	-2.830	-2.111
	Equal variances not assumed			-6.126	16.000	.000	-2.471	.403	-3.325	-1.616
Control	Equal variances assumed	4.361	.039	-3.718	96	.000	-.871	.234	-1.337	-.406
	Equal variances not assumed			-3.053	19.821	.006	-.871	.285	-1.467	-.276
Flexibility	Equal variances assumed	4.270	.041	4.641	96	.000	.885	.191	.506	1.263
	Equal variances not assumed			3.696	19.450	.001	.885	.239	.384	1.385
Management time	Equal variances assumed	.008	.928	-3.679	94	.000	-1.034	.281	-1.592	-.476
	Equal variances not assumed			-3.673	23.366	.001	-1.034	.282	-1.616	-.452
Quality	Equal variances assumed	2.560	.113	3.985	96	.000	.812	.204	.407	1.216
	Equal variances not assumed			3.487	20.701	.002	.812	.233	.327	1.297

### Independent Samples Test 100% Insourced Continued ...

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
<b>Compared against 75% Outsourced</b>									Lower	Upper
Outsource nos	Equal variances assumed	.	.	-13.366	99	.000	-3.000	.224	-3.445	-2.555
	Equal variances not assumed			-6.538	19.000	.000	-3.000	.459	-3.960	-2.040
Control	Equal variances assumed	12.225	.001	-3.469	99	.001	-.819	.236	-1.287	-.350
	Equal variances not assumed			-2.610	22.651	.016	-.819	.314	-1.468	-.169
Flexibility	Equal variances assumed	1.975	.163	3.591	99	.001	.646	.180	.289	1.003
	Equal variances not assumed			2.922	23.901	.007	.646	.221	.190	1.103
Staffing conditions	Equal variances assumed	.000	.995	2.175	99	.032	.575	.264	.050	1.099
	Equal variances not assumed			2.113	28.162	.044	.575	.272	.018	1.132
Management time	Equal variances assumed	.130	.719	-4.279	97	.000	-1.152	.269	-1.686	-.618
	Equal variances not assumed			-4.013	27.283	.000	-1.152	.287	-1.741	-.563
Quality	Equal variances assumed	.019	.891	3.223	99	.002	.603	.187	.232	.974
	Equal variances not assumed			3.028	27.154	.005	.603	.199	.195	1.012
<b>Compared against 100% outsourced</b>										
Co-operative?	Equal variances assumed	4.202	.071	-2.174	9	.058	-1.321	.608	-2.696	.054
	Equal variances not assumed			-2.663	8.751	.027	-1.321	.496	-2.449	-.194
Skilled staff	Equal variances assumed	2.126	.175	1.723	10	.116	.875	.508	-.256	2.006
	Equal variances not assumed			2.017	9.116	.074	.875	.434	-.105	1.855
Management time	Equal variances assumed	1.374	.245	-2.154	81	.034	-1.152	.535	-2.216	-.088
	Equal variances not assumed			-2.710	3.524	.061	-1.152	.425	-2.398	.094

### **7.7.3 OUTSOURCED COSTS CAUSE-AND-EFFECT ASSOCIATIONS – CORRELATION ANALYSIS**

Again, by using multiple Spearman's rho correlation analysis, we can further determine the relationship between the variables, if any.

For those firms that insourced 100% of their FM, we see that all dependent and independent variables had significant two-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Table 32) except for the independent variable "multiple providers", and the dependent variable "monitoring time" (refer to Flow Chart 32).

As the current insourced method is 100% insourced, as opposed to, say, 75% insourced, we would not expect the variable "multiple providers" to be correlating, as there simply are no other providers, as the function is fully insourced (refer to Table 32). The same explanation is given for "monitoring time", as this cost associated with outsourcing has been theorised previously as the amount of time management spends on monitoring those who manage the FM function. In this case, it is via an in-house management team, which obviously is given little management supervision when compared to those that outsource the function, but more importantly, is not a resultant cost for those that insource 100% (refer to Table 32).

However, the independent variable "not co-operative" is correlating, and therefore is present when the dependent variables of "reduced working conditions", "reduced core competencies", and "hollowing-out" occur!

This once again suggests that a cost lag effect of outsourcing to firms may exist which bring the function back in-house.

### **COMPARISON TO THE DAVID JONES CASE STUDY**

This suggests that those that insource 100% but previously outsourced currently<sup>84</sup> experience the effects of these outsourced costs. This could also be seen in the case-study example, where, just prior to insourcing the function, the outsource provider was becoming more and more uncooperative, resulting in these costs.

Certainly, for those firms that insourced 75% or more of their FM scored highest (except for hollowing-out, which was only 0.4 less) for these variables from the questionnaire than any other FM delivery methods (refer to Table 29).

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<sup>84</sup> Outsourced costs for reduced working conditions", "reduced core competencies", and "hollowing-out" were defined in the questionnaire for those currently insourced 100 % as "previous" outsourced costs, thus allowing for the quantification of outsourced costs for those who are currently 100% insourced.

A further study on David Jones's current in-house team should be able to highlight this cost lag (considered outside the scope of this thesis).

For those firms that insourced 75% of their FM, and thus outsourced 25%, we see that all dependent and independent variables had significant one-and/or two-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Appendix 2 Table 59), except for the independent variable "multiple providers", and the dependent variable "hollowing-out".

Once again we would not expect to see many, if any correlations with "multiple providers" for the same reasons listed for the previous FM delivery method, as the 25% outsourced portion would not easily cause a dependent cost.

### ***TIME LAG IN REALISING "HOLLOWING" OUT COSTS***

However, "hollowing-out" not correlating is not easily explained. Hollowing-out was attributed to a shortage of skilled workers and/or a subsequent loss of existing insourced staff knowledge.

It could be argued in this case that "hollowing-out" was not directly associated (although hollowing-out did exist based on the scores in Table 29), due to the 25% outsourcing of the function. In this case the respondents ranked their outsourced cost based on their current level of outsourcing (as opposed to those firms that are 100% insourced, which ranked this cost based on their previous outsourcing experience), and as such, this percentage was simply just insufficient to correlate.

This seems to be confirmed in that we see the score for "hollowing-out" is less than those that outsource 75% or more, but more than those that outsource 50% (refer to Table 29).

Once again it is difficult to identify that a firm has been hollowed out until some time after outsourcing has been replaced with insourcing.

For those firms that outsourced 50% of their FM, we see that all dependent and independent variables had significant one-and/or two-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Appendix 2 Table 60), except for the independent variables "monopoly", and "shortage of skilled workers", and the dependent variables "control", "flexibility", "reduced core competencies", and "monitoring".

		Monopoly	Co-operative?	Control	Decrease in Competencies	Hollowed out	Quality
Skilled Staff	Correlation coefficient	.735(*)					
	Sig. (1-tailed)	.019					
	Sig. (2-tailed)	.038					
	N	8					
Control	Correlation coefficient						-.432(**)
	Sig. (1-tailed)						.000
	Sig. (2-tailed)						.000
	N						81
Flexibility	Correlation coefficient			-.334(**)			.381(**)
	Sig. (1-tailed)			.001			.000
	Sig. (2-tailed)			.002			.000
	N			81			81
Staffing conditions	Correlation coefficient		.845(**)		-.744(*)	-.770(*)	
	Sig. (1-tailed)		.008		.017	.013	
	Sig. (2-tailed)		.017		.034	.025	
	N		7		8	8	
Decrease in competencies	Correlation coefficient		-.848(**)			.917(**)	
	Sig. (1-tailed)		.008			.001	
	Sig. (2-tailed)		.016			.001	
	N		7			8	
Hollowed out	Correlation Coefficient		-.942(**)		.917(**)		
	Sig. (1-tailed)		.001		.001		
	Sig. (2-tailed)		.001		.001		
	N		7		8		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 32 – 100% Insourced Correlations for “Outsourced Costs”**

### **“NULLIFICATION EFFECTS” ON MONOPOLY AND SHORTAGE OF SKILLED WORKERS**

As was the case for in-house value, we would not expect to see the independent variables of “monopoly” and “shortage of skilled workers” correlating, given that this form of FM delivery has an equal amount of insourcing and outsourcing. These independent variables therefore would be *nullified* by the presence of the in-house cost “increased staff numbers”. In this case it could be argued that the increased staffing

numbers attributed to the insourced cost idiosyncrasy would compensate for the shortage of skilled workers attributed to the outsourcing cost idiosyncrasy. This would then also nullify any potential monopoly, as more skilled staff are employed to override or compensate for any potential monopolistic threat of an outsource provider.

Thus, just as the case was with outsourcing value, outsourced costs are drastically reduced with equal amounts of insourcing present. However, the same can be said for the value propositions. In cases like this the temptation would be to grow in-house teams to both reduce costs but increase value further. But this would only exacerbate the situation if the in-house value recipe was not present.

### ***FURTHER OUTSOURCED COST NULLIFICATIONS***

Thus we would not expect to see the resultant dependent variable costs of control and flexibility loss. This would also nullify any associated competency loss. Increased monitoring would also not be an issue.

Interestingly, the correlations that *are* present point towards non-co-operation with the outsource provider linked with a reduced staffing condition, which in turn is linked with quality loss.

This environment would certainly be conducive to the potential to compensate by employing more in-house staff.

So, when there is a perception of quality loss stemming from the outsource provider's staff, the natural tendency for partial outsourcing methods would be to employ more in-house staff to compensate. This may add double cost for an organisation.

For those firms that outsourced 75% of their FM, we see that all dependent and independent variables had significant one-and/or two-tailed correlations to the 0.05 and/or 0.01 significance levels (refer to Appendix 2 Table 61), except for the dependent variable "Reduced working conditions".

This also is not easily explained. Reduced working conditions are said to occur predominantly as a result of the outsource provider's staff being "stressed" for a variety of reasons. This is also said to be applicable to existing transferred staff. As a result, their working conditions are diminished. This is reflected in the scores in Table 29 wherein those that outsourced more reported more unfavourable staff working conditions.

## ***COMPARISON TO THE DAVID JONES CASE STUDY***

When considering the case study, we see some support of this outsourced cost wherein the outsource provider's staff were severely stressed, causing multiple staff replacements for both new staff and transferred staff, as indicated by actual accounts of the stressed staff themselves. However, it seems that the effects on an organisation from this cost are more potent for firms that outsource less.

Due to David Jones retaining some centralised FM in-house, comparison of staff conditions were easily made. With partial outsourcing, staff conditions become clearer, thus leading to the conclusion that the outsourcer's staff eventually may be at a disadvantage compared to the in-house staff.

## ***NULLIFICATION EFFECTS***

However this nullification can only be explained by the outsourcer's value propositions (that is, specialisation, economies of scale etc.) nullifying the effects of poor working conditions for their staff when there are larger volumes.

Also, with partial outsourcing there is less scale than complete outsourcing, so it is doubtful that the outsourcer's investment will be as high, thus less focus on staff conditions. These staff then may be somewhat forgotten and not have access to the outsourcer's specialisation and economies of scale.

For those firms that outsourced 100% of their FM, we obtain consistent results for all variables except "monopoly". As the sample size of five respondents is not indicative enough to produce meaningful results, these results will be discounted unless combined within the 75% or more data sample analysis (refer to Appendix 2 Tables 62 to 64).

**Costs Derived from  
Theorised Dependencies**

The majority of the theorised costs propositions correlated with the theorised causes.

**Nullification of Costs if  
Mixed FM Delivery  
Methods**

However some of the cost propositions were “nullified” when there existed a mix or part-mix of both in-house and outsourced FM.

**Confirms Case-study  
Findings for Unco-  
operative**

This confirms the case-study findings wherein non-co-operation became an issue, ultimately resulting in early termination of contract.

For those insourced who were previously outsourced, there were correlations that suggested non-co-operation by providers was the main cause of cost increases.

**Unco-operative  
Relationships Causing  
Costs**

Also, the costs associated with non-co-operation appear to become prevalent mainly when firms return back in-house.

**Hollowing-out, Reduced  
Working Conditions &  
Core Competencies**

**Flow Chart 32 – Outsourced Cost Correlation Results**



## 7.8 INSOURCED COST RESULTS

Again, by using the same formula as was used for outsource cost, and referencing and measuring the previously hypothesised dependent and independent variables for *insourced costs* (refer to Table 33), we see that Insourced cost results (the dependent variables) are higher for those that insourced 50% of their FM than those that insource or outsource 75% or more of their FM. And those that outsourced 75% or more had by far the least staff increases by average overall (refer to Table 33).

Accordingly, this suggests that insourcing may propagate staff increases at a much higher rate (eight times higher) than outsourcing for this data set.

Insourced Cost			
<i>Independent Variable</i>	75%+ Outsourced	75%+ Insourced	50% Out/Insourced
Multidisciplinary	89.2	86.6	87
No. of FM categories	55.5	62.1	55.7
<b><i>Averaged Total</i></b>	<b>72.3</b>	<b>74.3</b>	<b>71.3</b>
<i>Dependent Variable</i>	75%+ Outsourced	75%+ Insourced	50% Out/Insourced
Increased staff nos	-11 <sup>85</sup>	-0.78	0.56
<b><i>Averaged Total</i></b>	<b>-11</b>	<b>-0.78</b>	<b>0.56</b>

**Table 33 – Insourced Cost Results**

### 7.8.1 RATIO-ADJUSTED SCORE FOR INSOURCED COSTS

However, as we saw previously, we can further predict just how much cost would have been realised based on the current alignment of the dependent variables with the independent variables for perceived insourced costs for each strategy, if we theorised a “maximum” independent variable alignment.

<sup>85</sup> The negative scores in this table indicate that staff reductions took place, as opposed to staff increases.

Now we see those that insourced more scored higher insource costs, than those that insourced less, with a trend evident (refer to Table 34, Figure 16, and Flow Chart 33).

By using ratios this way, it is clear that the independent variables cause much higher amounts of costs the more firms are insourced, thus further supporting the hypothesis, especially when considering the case study.

### **COMPARISON TO THE DAVID JONES CASE STUDY**

One of David Jones' drivers to outsource the FM function was to remove a layer of in-house staff built up over time (They achieved this by reducing the number of labour inputs to achieve the same or better FM outcome at the time).

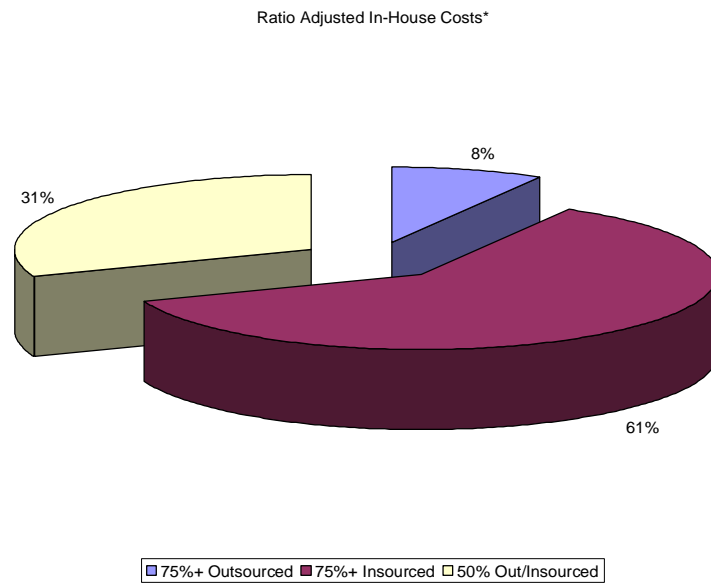
This is especially so the more FM is considered as multidisciplinary and having multiple functions (such as IT, vehicle management, etc). Understanding this, firms should carefully examine the complexity of their FM function before deciding to insource.

Independent/Dependent Ratio Maximum Possible Value and Cost Insourced Costs

	<b>75%+ Outsourced</b>	<b>75%+ Insourced</b>	<b>50% Out/Insourced</b>
Ratio-adjusted In-house Costs	0.08 <sup>86</sup>	0.60	0.30
Ratio Independent to Dependent	1 to 0.005	1 to 0.033	1 to 0.020

**Table 34 – Probable “Insourced Costs” – Independent to Dependent Applied Adjusted Ratios**

<sup>86</sup> In-house costs in this table represent the rate of increase in staff numbers expressed as a percentage. Figures are expressed as a percentage of a possible 100% achievable score, not 100% costs out of sample.



**Figure 16 – Overall Ratio-adjusted Insourced Cost Realisation Comparison**

### 7.8.2 SIGNIFICANT INSOURCED COST DIFFERENCES – T-TEST

Thus by using t-test analysis, it can be further identified which areas of insourced costs are significantly different when comparing each FM procurement and delivery strategy.

When comparing those firms that are 100% insourced with less insourced firms, we see significantly more staff increases for those that are 100% insourced than those that are 75% outsourced. (Refer to Tables 35 and Appendix 2 Table 65).

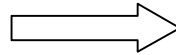
Not only did in-house teams rank highest for staff increases, but there was a significant difference when compared to outsourcing. This represents the major cost issue for insourcing for this data set.

**In-sourced Costs  
Derived from Theorised  
Dependencies**

Insourced costs scored highest against the theorised cost dependencies, confirming the hypothesis.

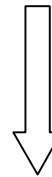
**Case-study Findings  
Supported**

This also confirms the case-study findings, wherein staff numbers for the in-house team were an issue.



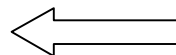
**Multidisciplinary  
Causing Staff Increases**

And, the more multidisciplinary the FM function, the higher the rate of in-house staff increases.



**Partial Outsourcing  
Reduces In-house Staff  
Increases**

Also, the more insourced, the higher rate of staff increases, suggesting that the presence of partial outsourcing compensates for the necessity for in-house staff increases.



**Flow Chart 33 – Insourced Cost Realisation Dynamics**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 75% insourced									Lower	Upper
Staff nos diff.	Equal variances assumed	11.750	.001	1.837	95	.069	12.64592	6.88553	-1.02359	26.31542
	Equal variances not assumed			.956	18.328	.352	12.64592	13.23286	-15.11965	40.41149

**Table 35 – 100% Insourced T-test Comparison – Insourced Costs**

### **7.8.3 INSOURCE COSTS CAUSE AND EFFECT ASSOCIATIONS – CORRELATION ANALYSIS**

Again, by using multiple Spearman's rho correlation analysis, we can further determine the relationship between the variables, if any.

For those firms that insourced 100% of their FM, we see that all dependent and independent variables had significant two-tailed correlations to the 0.05 and/or 0.01 significance levels (refer Table 36). We do not, however, see correlations for any other form of FM delivery.

Not surprisingly, staff increases for outsourced methods are not seen to be an issue. Thus it is possibly a unique cost to insourcing and one which would eventually need correcting if left to operate in operating environments that are not conducive to insourcing.

#### ***“STAFF INCREASES” ARE THE MAJOR INSOURCED COST***

This would suggest that the dependent variable costs are mainly realised when firms are 100% insourced. This is not surprising, as the resultant cost of “increased staff numbers” would be diluted with other FM delivery forms through the outsourcer's resources, especially given the outsourcers require “more for less” from their own resources.

The presence of some outsourcing can reduce this cost, however in itself cannot be regarded as the ultimate answer. As partial outsourcing dilutes value, there would still be the temptation to compensate by re-building the in-house team.

#### ***“MULTIDISCIPLINARY FM” AFFECTS STAFF NUMBERS***

Also, we see an independent to dependent correlation, suggesting that the more categories that are considered part of the FM delivery, the more staff numbers increase and vice versa<sup>87</sup> (refer to Appendix 2 Table 66).

This confirms that FM is particularly susceptible to this cost, as FM by nature is a multidisciplinary function. Special attention should be given to this dynamic when considering FM delivery methods.

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<sup>87</sup> Increased staff numbers are a reflection of a “rate” of increase as opposed to a fixed number of staff, to ensure a measure of consistent comparison across all FM delivery methods

			Multidisciplinary	Staff Nos diff.
Spearman's rho	Categories	Correlation Coefficient	.226(*)	.225(*)
		Sig. (1-tailed)	.021	.024
		Sig. (2-tailed)	.042	.048
		N	81	78

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 36 – 100% Insourced Correlations Comparison – Insourced Costs**

## 7.9 THE IMPLICATION OF TIME ON FACILITY MANAGEMENT VALUE AND COSTS

Having suggested that the hypothesis for value and cost previously presented is supported, and in particular their cause-and-effect associations, we can now analyse and discuss the time implications for these costs and value variables.

It was hypothesised that regardless of the strategy adopted, without alteration, the realised positive value versus cost ratio will degrade over time until cost exceeds value, until another procurement strategy is adopted. And indeed, the furtherance of strategy adoption will continue this cycle (refer to Figure 1).

So if we now know what value and costs are associated with insourcing and outsourcing, and we can also determine their causes, can we assume that time plays no part in the equation? Or does time impact on the drivers of value and costs?

### REGRESSION ANALYSIS

By using a one way ANOVA Contrast analysis technique, namely sixth degree polynomial regression analysis, we can then see whether a trend is prevalent from the results.

By graphing these results we can then determine the associated time trends, if any.<sup>88</sup>

<sup>88</sup> It is not intended to use polynomial regression analysis to obtain exact quantifications of cost and value amounts. It has been chosen to analyse for trends in minimum and maximum values for cost and value over the time series as presented in the data. This allows each firm to produce a “snapshot” of its value and cost. When combined with all firms’ data, it allows for trend analysis.

### 7.9.1 COST AND VALUE RESULTS OVER TIME FOR INSOURCED FM DELIVERY METHODS

For those firms that *insource 100%* of their FM delivery we see that the realised insource “value” is way below the anticipated or possible levels as theorised in the literature review and quantified in the questionnaire. This is reflected as a negative “value” figure when graphed alongside insource “costs”, however, this does not mean no value has been realised. It simply means that compared with costs and expressed as a percentage, it is below the zero line on the graph (refer to Appendix 2 Figure 29).

When graphing these firms over a fifty-year period, we observe a slight trend towards value being at its lowest and cost being at its highest points simultaneously at or about the five-year mark and the twenty-year mark.

Immediately we see that the firms that insource are not fully aligned to achieve maximum value and in fact may be more aligned to get more value through outsourcing. This problem will be discussed later in this chapter, however, when graphing the corresponding independent variables (or drivers), we obtain a similar trend, denoting that a link exists between the independent and dependent variables.

#### **FIVE-YEAR TREND ESTABLISHED**

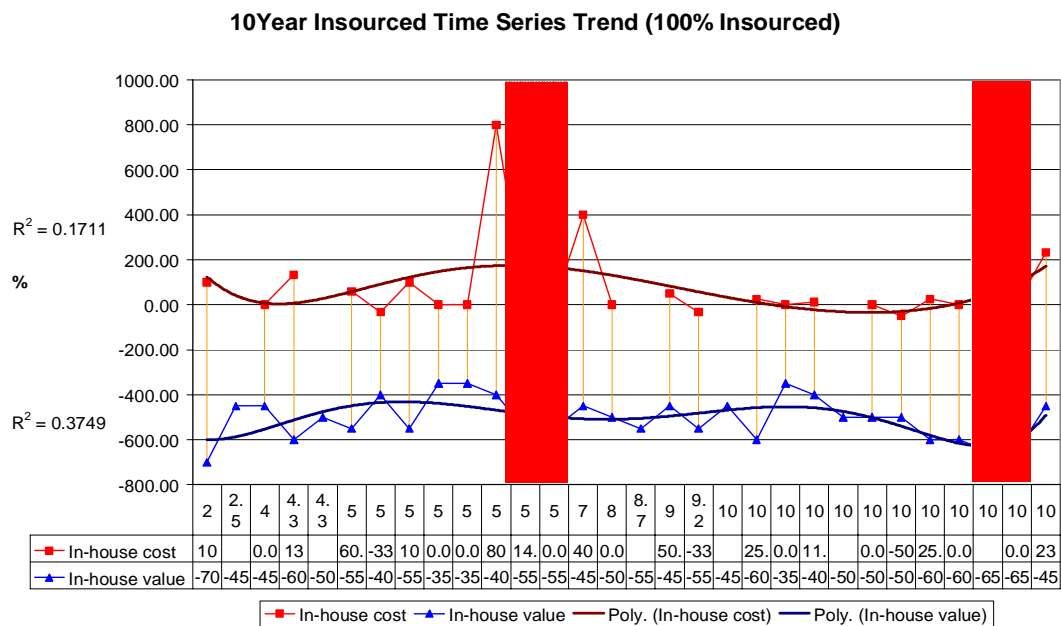
However, when graphing the same data over a ten-year period<sup>89</sup>, we see a definite five- and ten-year trend, wherein value and cost combined are at their worst. That is, value is lowest and costs are highest simultaneously. Interestingly, it is also at the five- and ten-year mark (the beginning of the series for these years) when value and cost are also at their combined best. This would seem to indicate that at or around the beginning of the five-year period firms, in general, reach the combined maximum value and minimum cost, and then, as per the hypothesis, value decreases and cost increases for this data set (refer to Figure 17).

The value and cost that are currently being realised seem to reach their worst around the five-year mark. As there is a link to the independent variables (refer to Figure 18, and Appendix 2 Figure 30), it would seem that these cycles actually represent a shift in the operating environment of the firm that has an obvious effect on the value and costs effects of the current procurement method. This seems to be an average of five years for this data set.

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<sup>89</sup> The presence of some outliers in the data series is noted, however, removing them proved immaterial to the results. Thus they have been preserved as they become relevant when the results are ratio-adjusted.

However, when graphing *all* FM delivery methods together, we do not see this trend in either the dependent or independent variables. That is, there is no simultaneous cost and value worst case for insourced methods. This supports the hypothesis for those firms that insource as opposed to those firms that do not (Appendix 2 Figures 31 to 34).



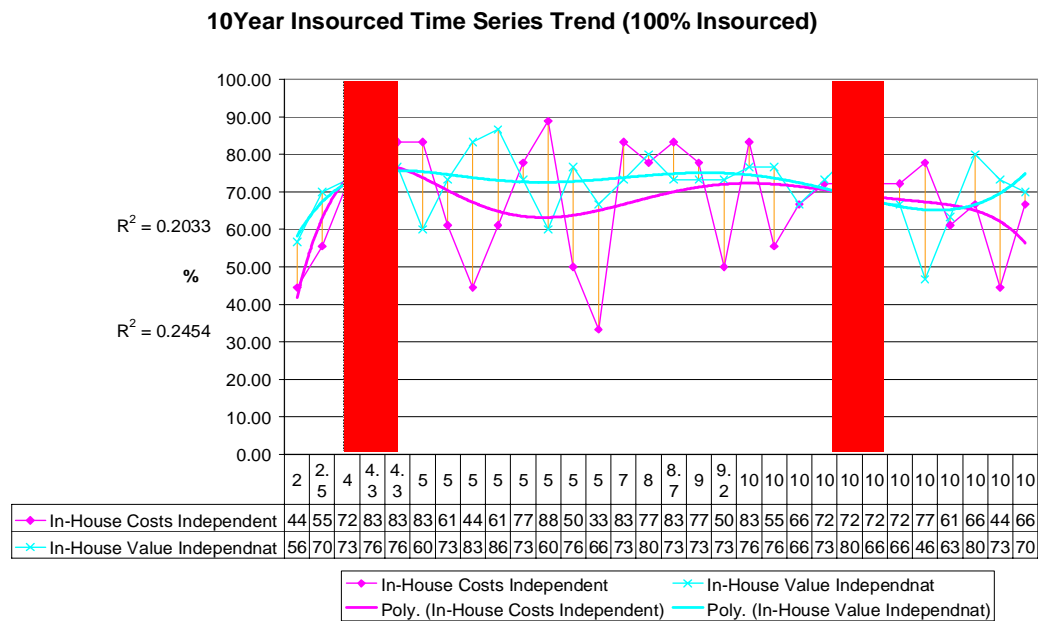
**Figure 17 – Ten-year Insourced Time Trend – 100% Insourced**

where for:

Costs,  $y = 4E-05x^6 - 0.0046x^5 + 0.2056x^4 - 4.5022x^3 + 47.133x^2 - 196.06x + 277.5$ ,  $R^2 = 0.1711$

Value,  $y = 0.0001x^6 - 0.0122x^5 + 0.3958x^4 - 5.8478x^3 + 37.261x^2 - 64.181x - 566.96$ ,  $R^2 = 0.3749$ .





**Figure 18 – Ten-year Insourced Time Trend – 100% Insourced – Independent Variable**

where for:

Costs,  $y = -1E-05x^6 + 0.0013x^5 - 0.0525x^4 + 1.0423x^3 - 10.307x^2 + 45.429x + 5.7375$ ,  $R^2 = 0.2033$

Value,  $y = -2E-06x^6 + 0.0003x^5 - 0.0143x^4 + 0.3214x^3 - 3.5265x^2 + 17.548x + 43.965$ ,  $R^2 = 0.2454$ .

### ***“NULLIFICATION” CAUSING FLATTER TREND CURVES***

When graphing those firms that only insource 75% of their FM, we see a similar, but flatter trend for both the dependent and independent variables (refer to Appendix 2 Figures 35 and 36). This is to be expected, as the 25% outsourced portion would “nullify” costs and value to some degree, as previously explained. However, once again costs have exceeded value overall.

Once again, when graphing *all* FM delivery methods for insourced cost and value together, we observe no trend at all, suggesting that these insourced value and cost time trends may be specific to those that insource. This further supports the hypothesis.

Further, for those firms that insource 50% of their FM, we see that when considering insource value and cost variables over a ten-year period (refer to Figures 19 and 20), insourced costs are lower overall than other insourced forms, however, so is the value.

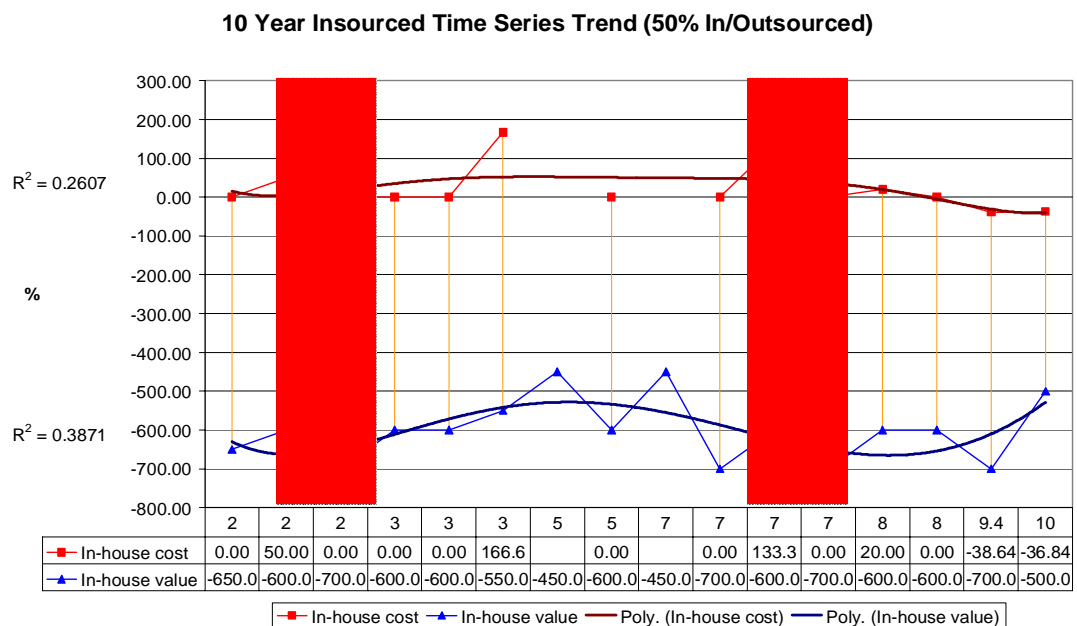
## ***“NULLIFICATION” CAUSES FLATTER TREND LINES AND SHORTER INITIAL CYCLE TIMES***

This supports the previous suggestion that the presence of equal amounts of outsourcing “nullifies” costs, but also value, to some degree.

In addition, we see that value and cost are simultaneously at their worst at a two- and seven-year interval. This would also suggest that this “nullification” effect speeds up the hypothesised degradation of value and costs; however, there still seems to be a five-year interval.

These trends suggest that they are unique to either insourcing or outsourcing and not to both combined. This supports the notion that these trend lines are not random, but, in fact, may be indicating that value and costs associated with each FM delivery method do fluctuate over time at a fairly constant five-year interval for this data set!

As the drivers of value and cost also fluctuate over time in a similar fashion, then it can also be suggested that changes in the recipe may be what causes these fluctuations.

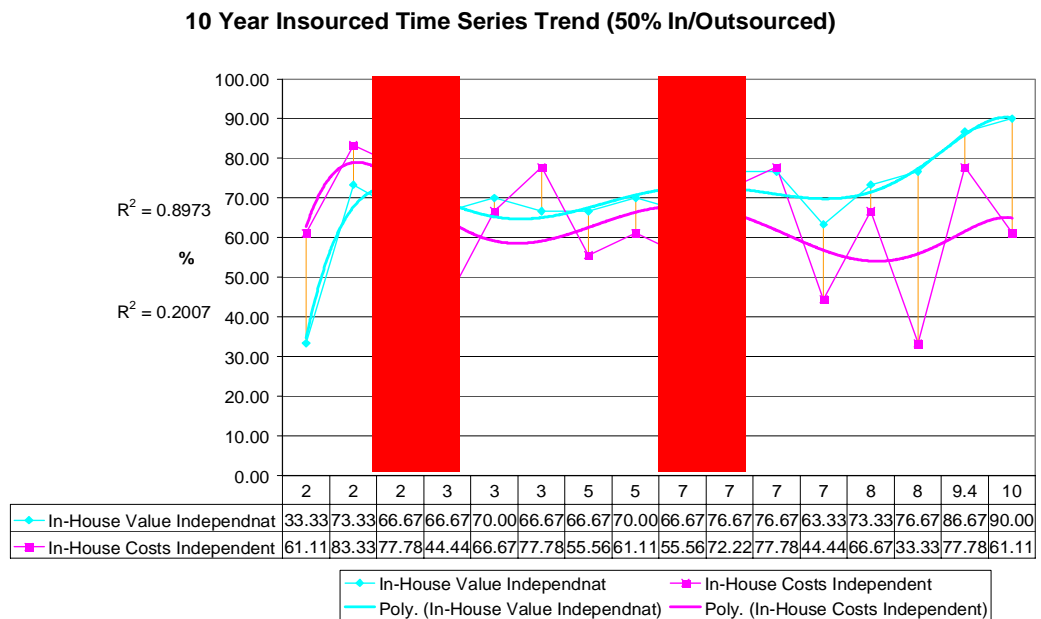


**Figure 19 – Ten-year Insourced Time Trend – 50% In/Outsourced**

where for:

Costs,  $y = 0.0013x^6 - 0.0658x^5 + 1.3156x^4 - 12.882x^3 + 62.504x^2 - 126.63x + 91.15$ ,  $R^2 = 0.2607$

Value,  $y = -2E-05x^6 - 0.0062x^5 + 0.4033x^4 - 8.0196x^3 + 62.674x^2 - 170.77x - 514.23$ ,  $R^2 = 0.3871$ .



**Figure 20 – Ten-year Insourced Time Trend – 50% In/Outsourced – Independent Variable**

Costs,  $y = -0.0009x^6 + 0.0466x^5 - 0.9826x^4 + 9.9998x^3 - 50.057x^2 + 109.68x - 5.9241$ ,  $R^2 = 0.2007$

Value,  $y = -0.0008x^6 + 0.045x^5 - 0.9625x^4 + 10.146x^3 - 54.562x^2 + 138.67x - 58.574$ ,  $R^2 = 0.8973$ .

Similar observations are noted for those firms which only insource 25% of their FM over a ten-year period, with the only difference to these observed trends being the period in which value and costs are simultaneously at their best. In this case it is around the nine-year mark (refer to Appendix 2 Figure 37). Once again, this can be attributed to the “nullification” effects, as previously defined (refer to Flow Chart 34).

And it seems that regardless of the misalignment of the recipe causing cycles, 50/50 methods may cause these cycles to happen a lot sooner. This would support the previous findings that if there is misalignment to the recipe and firms choose a 50/50 option, the temptation to increase staff numbers may cause rising costs for the current method.

We do not see these trends for insource cost and value for those firms that outsource 100% of their FM, however, the sample size is considered too small to return meaningful data.

**100% Insourced Value  
& Costs Worst Every  
Five Years**

For those firms 100% insourced, cost and value are simultaneously at their worst about every five years, when graphed over a ten-year period.

**100% Insourced Value  
& Costs Reach Peak  
Every Five Years**

Also, it is at the beginning of this five-year period when cost and value are also at their best.

**“Nullification Effects”  
Flatten Trend Curves**

There was a similar but flatter trend for those that insource 75% but outsource 25%, indicating that “nullification” does impact on cost and value trends.

There was no trend when combining ALL data (i.e., from outsourced and insourced methods), supporting the hypothesis.

**Five-year Insource  
Trend Not Prevalent for  
Outsourced Methods**

Firms with 50% in/outsourced are impacted upon by nullification most, causing cost and value to be at their worst at the second year, and again at the seventh year.

However for firms that only in-source 25%, “nullification” also seems to flatten best case in-source value to every nine years rather than five years.

**“Nullification Effects”  
Speed up Degradation**

**“Nullification Effects”  
Slow Overall Value  
Realisation**

**Flow Chart 34 – The Dynamics of Time on Insourced FM Value and Cost**

## ***TIME – INSOURCED FINDINGS***

### ***“SWITCHING” OVER LONG PERIODS OF TIME NOT THE PREFERRED OPTION***

Therefore, when analysing insourced value and cost levels over a fifty-year period, we see a five- and twenty-year time period in which value and cost combined are at their worst. This was suggesting that over a longer time period, firms may have the capacity to “right” these effects without switching FM procurement methods. However, a definite five- and ten-year cycle existed until at least post the twenty-year mark.

This is probably a reflection of the firms’ operating environment establishing over time, rather than the FM delivery method altering.

This being the case there could be a suggestion that insourced methods for delivering FM in Australia may need correcting through outsourcing. That is, the organisations surveyed produced much less than optimal insourcing value, indicating that their operating environment may have shifted to be more in line with outsourcing FM models.

### ***NULLIFICATION FLATTENS VALUE AND COST LEVELS BUT ACCELERATES INITIAL DEGRADATION***

Also, we see that those that insourced 75% of their FM experienced flatter curves, suggesting that some costs and value are nullified by the presence of 25% outsourcing. This is evident with firms that insourced 50% of their FM, which also “sped up” the initial degradation of value and cost by about three years, with a two- and seven-year cycle.

Finally, those firms that insourced only 25% of their FM experienced a five and ten-year cycle, but only achieved “best-case” value and cost ratio at nine years, as opposed to five years for those that insourced 100%.

Even through partial insourcing, there was no absolute correction, thus further supporting that a shift to a fully outsourced method may be required to correct the insourced costs.

## **7.9.2 COST AND VALUE RESULTS OVER TIME FOR OUTSOURCED FM DELIVERY METHODS**

Using the same polynomial regression analysis technique, we can trend for outsourced costs and value as well.

The same findings were realised for outsourced methods, however, with more prominent curves indicating value and cost fluctuations at a higher level.

#### ***FIVE-YEAR TREND SUGGESTED***

For those firms that outsource 75% or more of their FM, we see that there is a trend, similar to those for insourced cost and value. Once again we see that the perceived cost and value of outsourcing are simultaneously at their worst at about the five- and then the ten-year period (refer to Figures 21)

This trend was evident when graphing over a ten-year period for both dependent and independent variables (refer to Figure 22) In fact, we see that costs actually exceed value at the ten-year mark. Just as was the case for insourced methods, we see that the drivers of outsourced cost and value are linked with the resultant value and cost levels. This supports the hypothesis, and supports the notion that shifts in a firm's operating environment are taking place at about every five years, which affect the cost and value levels for the current procurement strategy for this data set.

#### ***"NULLIFICATION" CAUSES FLATTER TREND CURVES AND SHORTER INITIAL CYCLE TIMES***

Similar trends were noted for those that outsourced only 25%, however, cost and value reach their worst only after about one to two years, instead of the five-year mark.

Once again, this can be explained in that the presence of unequal amounts of insourcing would also have a nullifying effect, similar to that experienced in the trends for insourcing, as previously defined. This was evident for a ten-year graph analysis for both the dependent and independent variables.

10 Year Outsource Time Trend (75% or More Outsourced)

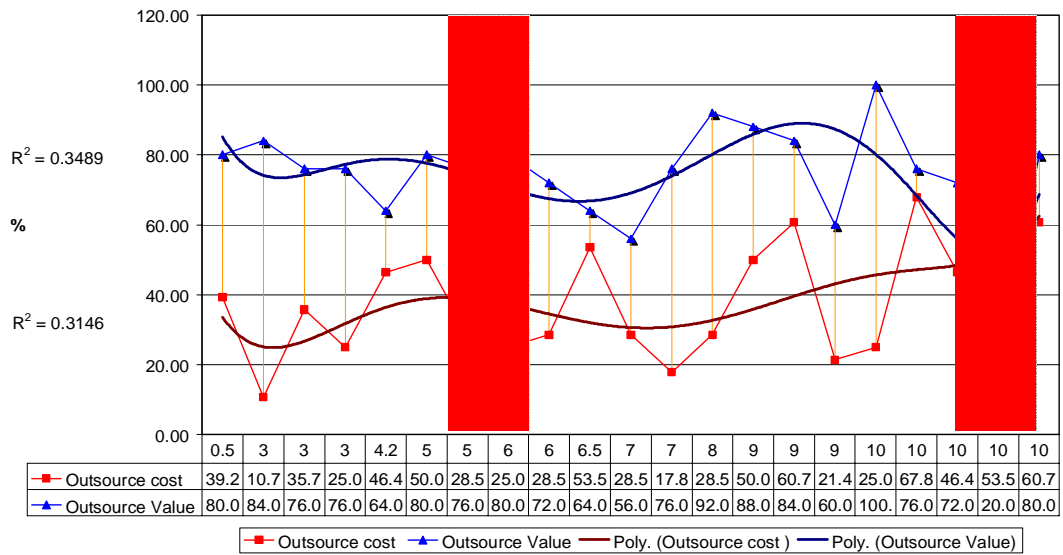


Figure 21 – Ten-year Outsourced Time Trend – 75% or More Outsourced

where for:

Costs,  $y = 0.0001x^6 - 0.0088x^5 + 0.2307x^4 - 2.8829x^3 + 17.311x^2 - 43.413x + 62.355$ ,  $R^2 = 0.3146$

Value,  $y = 0.0003x^6 - 0.016x^5 + 0.3797x^4 - 4.2412x^3 + 22.898x^2 - 55.204x + 121.32$ ,  $R^2 = 0.3489$ .

10 Year Outsource Time Trend (75% or More Outsourced)

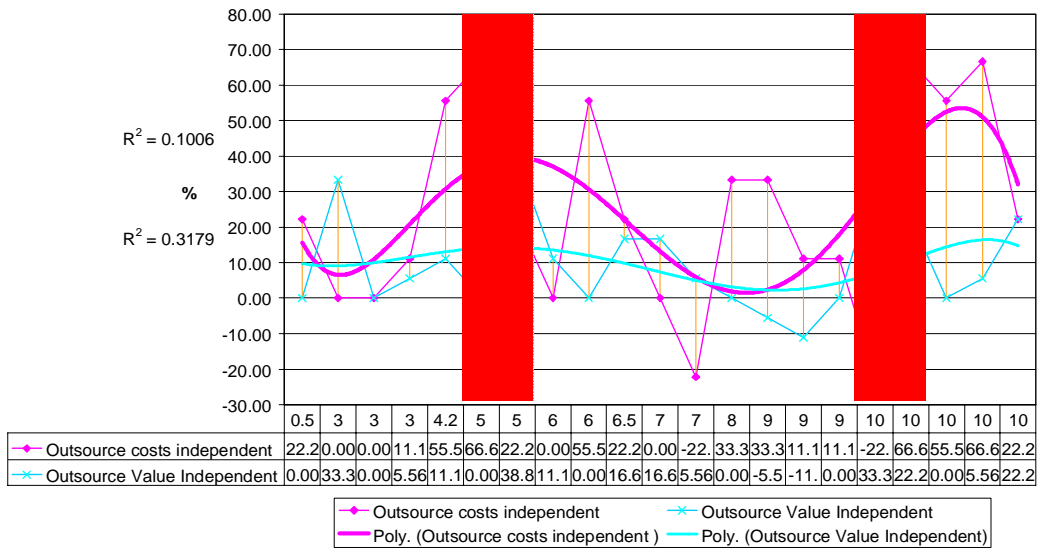


Figure 22 – Ten-year Outsourced Time Trend – 75% or More Outsourced – Independent Variable

where for:

Costs,  $y = 3E-05x^6 - 0.0043x^5 + 0.1692x^4 - 2.76x^3 + 19.453x^2 - 50.55x + 49.364$ ,  $R^2 = 0.3179$

Value,  $y = -1E-05x^6 + 0.0003x^5 + 0.0052x^4 - 0.2124x^3 + 1.8831x^2 - 4.8695x + 12.9$ ,  $R^2 = 0.1006$ .

Once again, when graphing for *all* FM delivery methods over a ten-and fifty-year period, we do not observe this trend for outsourced cost and value, indicating that it is relevant to those that outsource, thus supporting the hypothesis (refer to Appendix 2 Figures 38 and 40).

The absence of similar trends for the combined data set once again supports the notion that, under certain conditions either outsourcing or insourcing and their associated costs and values degrade over time. Why these also “right” themselves could be explained if the drivers also right themselves over time. That is, the firm became aligned to the current FM delivery method and not the other way around. This seems to be the case for this data set (refer to Appendix 2 Figures 39 and 41).

### ***OUTSOURCED COST AND VALUE TRENDS STILL PREVALENT AFTER SWITCHING BACK TO INSOURCED METHODS***

However, when graphing those firms that insource 100%, we do obtain a flatter but similar trend for outsourced cost and value.

This can be explained in that the questionnaire was designed to capture outsource value and costs for those firms that are outsourcing or have *previously* outsourced. This would indicate, therefore, that some effects of outsourced cost and value may still prevalent after the decision has been made to insource again.

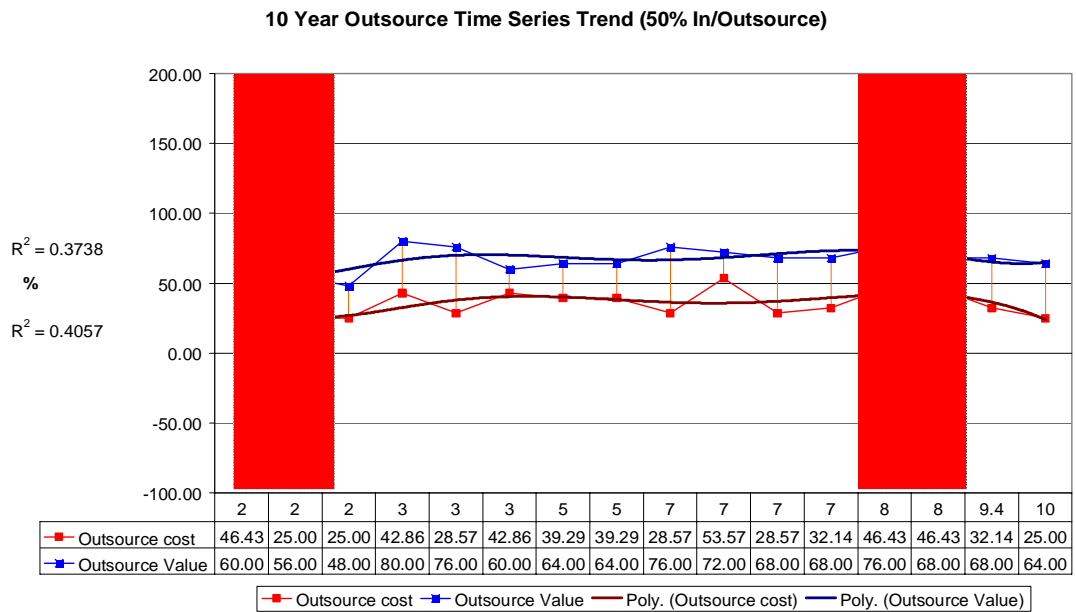
We note that the effects are more prevalent for the first five years, and again at the ten-year mark. This flattens out for a fifty-year graph analysis as expected (refer to Figures 23 and Appendix 2 Figure 42).





Value,  $y = -1E-05x^6 + 0.0011x^5 - 0.0426x^4 + 0.8103x^3 - 7.1879x^2 + 22.661x + 29.587$ ,  $R^2 = 0.3374$ .

For those that only outsource 25% of their FM, there was a two- and ten-year cycle, attributed to the effects of nullification also.

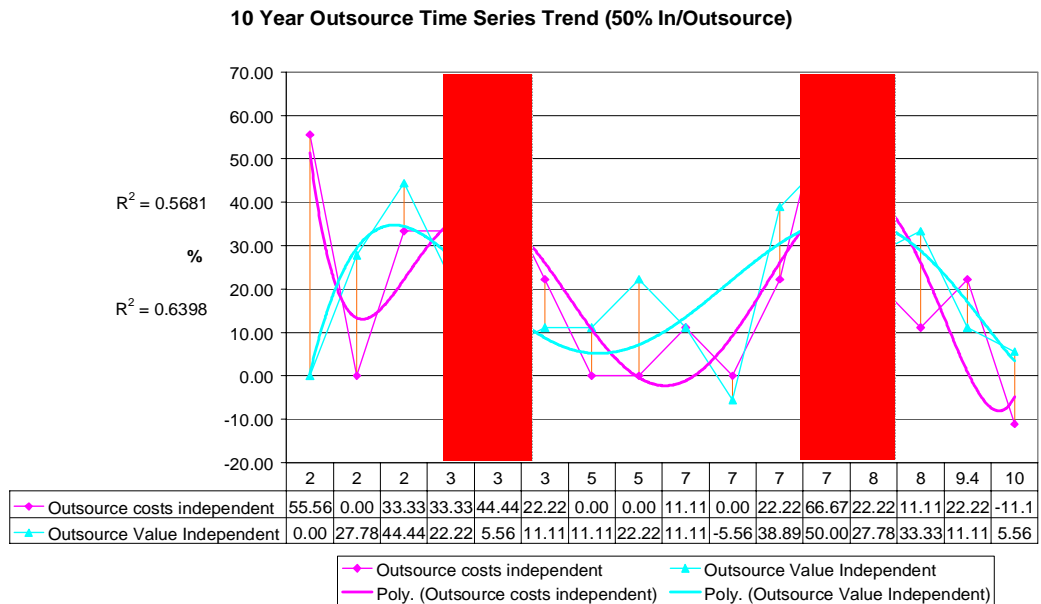


**Figure 24 – Ten-year Outsourced Time Trend – 50% In/Outsourced**

where for:

Costs,  $y = 0.0003x^6 - 0.0205x^5 + 0.4914x^4 - 5.6684x^3 + 32.414x^2 - 82.557x + 100.86$ ,  $R^2 = 0.4057$

Value,  $y = 0.0006x^6 - 0.0297x^5 + 0.6025x^4 - 5.8739x^3 + 27.872x^2 - 55.486x + 92.25$ ,  $R^2 = 0.3738$ .



**Figure 25 – Ten-year Outsourced Time Trend – 50% In/Outsourced – Independent Variable**

where for:

Costs,  $y = 0.0027x^6 - 0.1423x^5 + 2.8464x^4 - 27.247x^3 + 127.75x^2 - 269.03x + 217.2$ ,  $R^2 = 0.6398$

Value,  $y = 4E-05x^6 + 0.0027x^5 - 0.1907x^4 + 3.7154x^3 - 29.722x^2 + 94.771x - 67.933$ ,  $R^2 = 0.5681$ .

## ***TIME – OUTSOURCE FINDINGS***

So, as for insourcing, similar trends were found for outsource value and costs. However, for outsourcing there was less of a need for overall correction, as was seen for insourcing. It seems that only partial adjustment to the current outsourcing levels is required to prevent cost exceeding value overall in this data set.

### **7.9.3 RATIO-ADJUSTED COST AND VALUE RESULTS OVER TIME**

Having now suggested time trends for all FM delivery methods, once again, we can adjust the actual perceived value and cost levels to reflect scores which would have been achievable if closer alignment to the independent variables existed as per the hypothesis, by using the existing ratios.

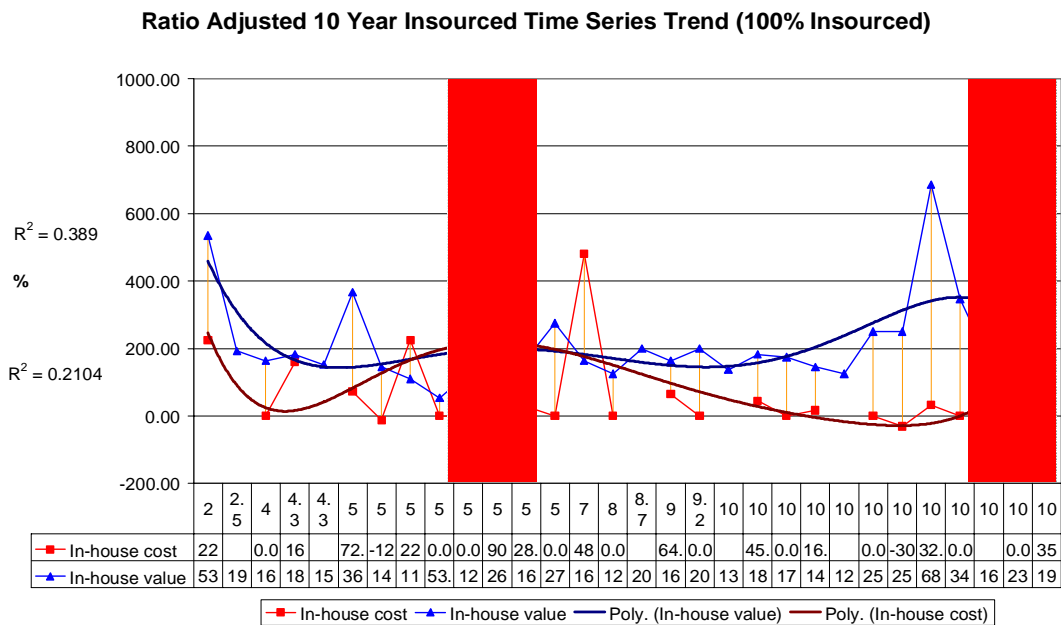
This will allow the testing of the hypothesis in its ideal form, ensuring that these time trends remain consistent for this data set.

We see that for those firms that insource 100%, there is now a more prominent cost and value degradation that cause costs to exceed value, further supporting the previous trends noted.

Once again, we get a five- and twenty-year cycle for a fifty-year graph, and a five- and ten-year cycle for a ten-year graph (refer to Figures 26 and Appendix 2 Figure 43).

It is also noted that value levels are now corrected, indicating the possible realised value that insourcing produces, should alignment to the independent variables be made.

For those firms that insourced 75% of their FM, we still see a correction in value levels and a five- and ten-year cycle, however, we do not see costs exceeding value for a ten-year graph (refer to Appendix 2 Figure 44).



**Figure 26 – Ten-year Insourced Time Trend – 100% Insourced**

where for:

Costs,  $y = 0.0001x^6 - 0.0118x^5 + 0.4706x^4 - 9.2522x^3 + 89.546x^2 - 366.32x + 531.91$ ,  $R^2 = 0.2104$

Value,  $y = -8E-06x^6 - 0.0012x^5 + 0.119x^4 - 3.6358x^3 + 47.72x^2 - 269.42x + 683.45$ ,  $R^2 = 0.389$ .

### ***“NULLIFICATION” EFFECTS***

This, once again, can be attributed to the presence of 25% outsourcing that would “flatten” the curves as previously explained, however, it is also noted that these curves are not as flat prior to value and costs levels being ratio-adjusted.

However, the fact that cycles still exist after alignment to the theorised cost and value drivers only corrects the value and cost levels as they could have been if aligned to the chosen FM delivery method. Cycles still exist because at some stage, a shift in outsourcing levels either up or down would have been necessary to achieve full alignment to the firm's changing operating environment.

For those firms that insourced 50% of their FM, we see the same two- and seven-year cycle for a ten-year graph, however, with corrected value levels and slightly less flat curves than when the value and cost levels were not adjusted (refer to Appendix 2 Figure 45)

It should also be noted that costs do not exceed value. This is also attributed to the 50% outsourced component, as previously discussed (refer to Flow Chart 35).

However, nullification effects may still hold true for partial outsourcing methods, and in fact support the notion that misalignment to either recipe can only be rectified by

changing to the correct recipe or changing the procurement method to suit the current operating environment. As partial methods have both recipes, there are flatter curves.

### ***AN ORGANISATION'S ATTEMPT TO ACHIEVE FM VALUE CONTRIBUTES TO A FIVE AND TEN YEAR CYCLE***

For those firms that are 75% outsourced, we see that insourced value and costs are at their worst at the three-year and nine-year period for a ten-year graph (refer to Appendix 2 Figure 46).

This is now suggesting that when adjusting the cost and values to reflect possible scores based on current ratios for this FM delivery method, the effects of the outsourcing proportion (in this case 75%) brought forward the hypothesised value and cost degradation by about one or two years. This would suggest that in practice, firms “sense” this early degradation and concentrate their efforts on the 75% outsource value portion to compensate. Hence in the previous non-altered value and cost amounts we see a five- and ten-year cycle, which seems to be unavoidable.

Thus this also supports the previous findings that when firms mix methods, this may in fact speed up initial degradation for this data set.

**75% + Outsourced  
Value & Costs Worst  
Every Five Years**

For those firms 75% or more outsourced, cost and value are simultaneously at their worst about every five years when graphed over a ten- and fifteen-year period

**Current 100% Insourced  
Value & Costs Affected  
Previously**

Even firms previously outsourced reported similar value and cost trends, indicating that some outsourced costs emerge over time, even after a switch to insourced methods.

**“Nullification Effects”  
Flatten Trend Curves**

There was a similar but flatter trend for those that outsource 75% but insource 25%, indicating that “nullification” does impact on cost and value trends.

However, there was no trend when combining *all* data (i.e., from outsourced and insourced methods), supporting the hypothesis.

**Five-year Outsourced  
Trend Not Prevalent for  
Combined Insourced  
Methods**

**“Nullification Effects”  
Speed up Degradation**

Firms with 50% in/outsourced are impacted upon by nullification most, causing cost and value to be at their worst at the second year, and again at the seventh year.

**“Nullification Effects”  
Slow Overall Value  
Realisation**

However, for firms that only outsource 25%, “nullification” also seems to flatten best-case outsource value overall, similar to the cost and value findings for insourcing.

**Flow Chart 35 – Ratio-Adjusted Value and Cost Dynamics over Time**

Again, as the firms that outsourced 100% of their FM are limited in sample size, when combined with the 75% or more FM delivery method, they returned similar results for insourced value and costs over time (refer to Appendix 2 Figure 47).

## TIME – RATIO-ADJUSTED INSOURCE FINDINGS

We see that when adjusting value and costs levels based on current ratios with dependent and independent variables, there was a definite trend of costs actually exceeding value. However, this did not occur for those that insourced 75% only, attributed to nullification.

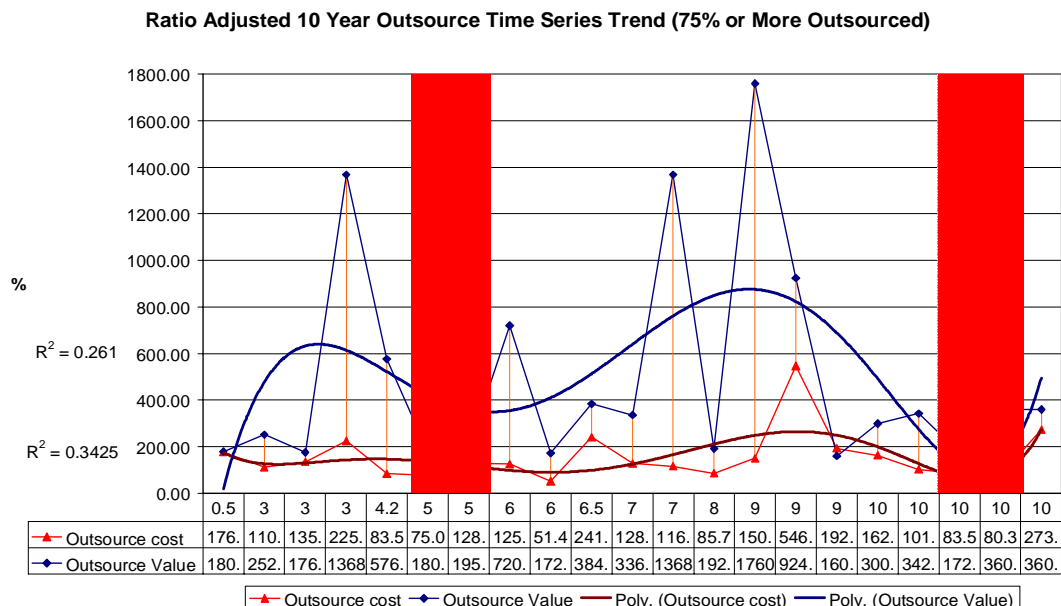
Additionally, for those firms that only insourced 25% of their FM we saw a three- and nine-year cycle, for the same nullification reason.

This confirms the need to correct the current insource trend results. When assuming a 100% fit to the current insource recipe, the value was corrected. This suggests that the firm's current operating environment is not fully aligned with the insource model, which may be more aligned with an outsourced model.

## REGRESSION ANALYSIS

As previously seen, using the same polynomial regression analysis technique with the ratio adjusted data, we can trend for outsource costs and value as well.

For those firms that outsource 75% or more of their FM, we see similar trends to the non-ratio-adjusted value and cost graphs for a ten-year graph (refer to Figure 27). That is, there are definite five- to ten-year cycles.



**Figure 27 – Ten-year Outsourced Time Trend – 75% or More Outsourced**

where for:

Costs,  $y = 0.0016x^6 - 0.0963x^5 + 2.1934x^4 - 23.42x^3 + 120.4x^2 - 277.06x + 354.39$ ,  $R^2 = 0.3425$

Value,  $y = 0.0004x^6 + 0.0157x^5 - 1.6094x^4 + 36.507x^3 - 331.54x^2 + 1220.3x - 903.96$ ,  $R^2 = 0.261$ .

## ***RATIO-ADJUSTED OUTSOURCE VALUE AND COST STILL PREVALENT FOR THOSE FIRMS NOW INSOURCED***

Similar observations are noted for those firms that insource 100% of their FM, for outsource cost and value levels over a ten-year graph.

This is not surprising, as the questionnaire was designed to capture outsource value and cost levels that are currently experienced, regardless of whether FM is still outsourced or not.

This seems to be confirmed, in that when graphed over a fifty-year period, the cycle is extended to many years, indicating a correction by the firm (refer to Appendix 2 Figures 48 and 49).

These trends are also consistent for those firms that only outsource 25% of their FM (refer to Appendix 2 Figure 50), indicating that those outsource value and cost variables are still relevant. We do see, however, a shorter initial cycle of the curves again, due to the 75% presence of the insourcing portion possibly nullifying some of the value, as previously discussed.

For those firms that outsource 50% of their FM, we see that even after adjusting the value and cost levels to reflect the possible scores achievable, based on the current ratio of independent to dependent variable, we get a two- and eight-year cycle for a ten-year graph. This seems to confirm that the nullification of the presence of insourcing in this case speeds up the degradation, although with still an approximate five- to six-year interval (refer to Figure 28).

Once again there is confirmation that perceived outsourced costs and value can extend beyond its contracted term, especially for value which eventually flattens over time. This will be discussed in more detail.

## ***COMPARISON TO THE DAVID JONES CASE STUDY***

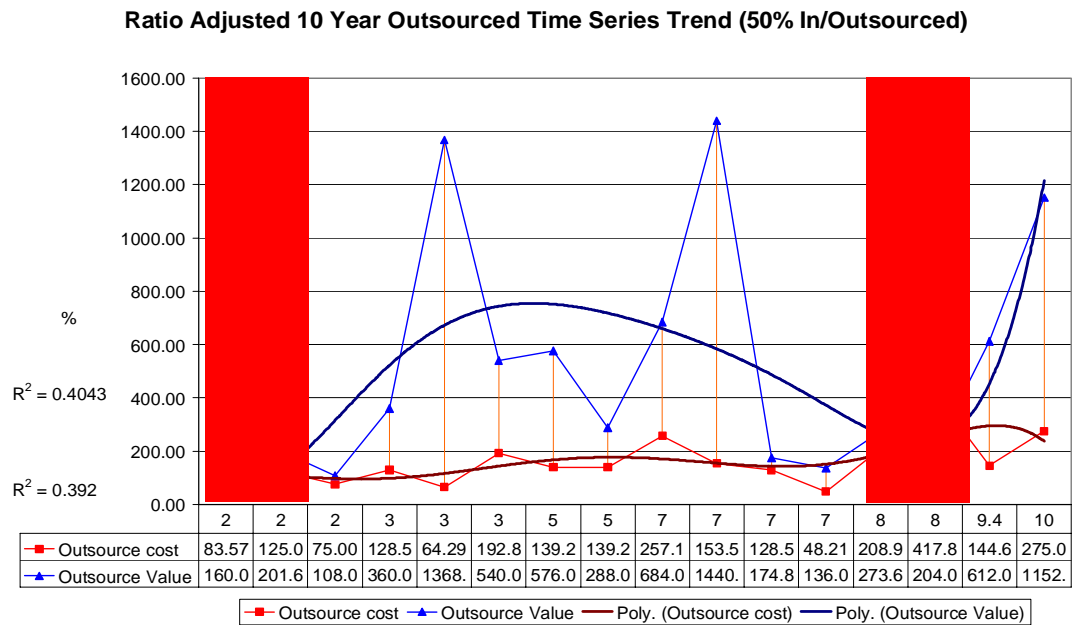
Certainly when considering the case study, there was a definite two-year time period in which value and costs were at their worst experienced by David Jones. This would also reinforce the proposition that David Jones did not, in fact, 100% outsource its FM, as there was simply limited transfer of process and control afforded to the outsource provider.

The model David Jones adopted by default was more reflective of a 50% outsource function, thus the early degradation of costs and value as indicated in these trends.



This has consequences for all firms<sup>90</sup>, in that expected value and cost over time may be shortened, creating the need for firms to alter, thus costing more overall.

So firms adopting a 50/50 method can expect an initial shorter lifecycle of cost and value with lower value and cost levels, but still with a five-year cycle.



**Figure 28 – Ten-year Outsourced Time Trend – 50% Out/Insourced**

where for:

Costs,  $y = -0.0044x^6 + 0.2084x^5 - 3.74x^4 + 31.491x^3 - 126.02x^2 + 224.29x - 36.537$ ,  $R^2 = 0.392$

Value,  $y = 0.0118x^6 - 0.5801x^5 + 11.334x^4 - 110.55x^3 + 532.43x^2 - 998.91x + 718.89$ ,  $R^2 = 0.4043$ .

### **TIME – RATIO-ADJUSTED OUTSOURCE FINDINGS**

Similar trends were noted for outsource cost and value as it was for insourced cost and value, with the only notable exception being a flat two- and eight-year cycle for those firms that only outsource 50%. For firms that were currently 100% insourced, we saw that after about ten years, cost and value levels for outsourcing were “corrected”, albeit flatter.

There was some change to value by assuming 100% alignment to the outsourced recipe, however, not to the same extent as the insource model, suggesting a better alignment.

<sup>90</sup> The questionnaire took this issue into account and was designed in such a way as to allow respondents to rank their FM delivery method based on a definite definition of what outsourcing is, thus limiting incorrect answers for value and costs.

## 7.10 CONCLUSION

It is therefore concluded that perceived value and cost levels do not remain constant over time, and in fact both value and cost levels are simultaneously at their worst every five years for both firms that outsource and for firms that insource.

Also, where both forms are used by the same firm, there is a flattening of value and cost level cycles with an initial shorter degradation time period.

A definite link emerged with the drivers of cost and value, and the postulated associated resultant costs and values for this data set.

## 7.11 OUTSOURCE VALUE CONCLUSIONS

Thus, should a firm be aligned for outsource value (that is, the recipe), either now or in its future, it is suggested that the value propositions hold true.

### ***FIRMS SHOULD OUTSOURCE MORE TO ACHIEVE SPECIALISATION AND ECONOMY OF SCALE BENEFITS***

It was established that when considering outsource value propositions, those firms that outsourced more also reaped a higher rate of perceived outsource value on average. Those that outsourced 75% or more of their FM were on average 55% more likely to gain value from outsourcing than other less outsourced firms (page 239).

Thus when planning ahead, the more outsourced a firm, the higher the rate of outsourced value that can be predicted. The main areas of difference of outsource value realisation when compared against those firms that had outsourced less were found to stem from the outsourcer's specialist services, and their economies of scale advantages. This indicates that firms that are targeting these attributes for any potential outsource provider should realise that they are only achieved through scale, that is, 75% or more outsourced.

Therefore, this value would be realised when a firm's operating environment is more aligned with outsourcing than partial outsourcing or insourcing, when considering the various cost and value drivers.

### ***FIRMS SHOULD OUTSOURCE TO A “LESSER EXTENT” IF MAXIMUM TRANSFER LEVERAGES ARE REQUIRED***

However, for firms that outsource only 50% of their FM, the main areas of outsource value came from the ability of firms to transfer unwanted processes and assets over to the outsource provider. Firms, therefore, that are seeking to gain transfer advantages should consider a 50% outsourced methodology (page 246).

This is now suggesting that should a firm's operating environment be only partially aligned to outsource value, then there exists an opportunity to transfer unwanted assets across.

### ***FIRMS SHOULD ONLY OUTSOURCE IF THEY ARE LIMITED IN SELF DELIVERING FACILITY MANAGEMENT***

Firms that outsourced and gained value were also found to have considerable bounded rationality in self-delivering FM. A self-assessment of FM competence within a firm thus becomes crucial. Should firms have the required skills to deliver insourced FM, outsourcing value will not be easily obtained (page 246).

Simply put, there is no need to outsource if the firm can perform the functions itself. If it is capable and outsources, then this could have a negative impact on the overall FM delivery. Under these circumstances, one would expect strained relationships and possibly limited “real” transfer of ownership and control to an outsource provider.

### ***ACHIEVED OUTSOURCE VALUE CAN CONTINUE AFTER THE FUNCTION IS RETURNED BACK IN-HOUSE***

Firms that are currently insourcing 100% benefited from previous outsource methods, indicating that the effects of outsource value continue after a firm has shifted away from outsourcing. This denotes a time lag trend. However, this current outsource value was not associated with the firm being decentralised or its FM being considered non-core. These exceptions also applied to those firms that were 75% and 50% insourced, in that outsource value was realised, however, it had nothing to do with the firm having simple SLAs or, in the case of 50%, its FM being considered non-core. These variables should therefore be ignored when predicting for outsource value with partial insourced methods (page 247, 249).

Simply put, the drivers of outsource value may change in a firm's operating environment; however, the value already gained survives a change back to insourcing for some period of time. This retained value is not influenced by the firm's operating environment thereafter. Thus outsourcing as a tool for correcting previous large in-house teams may be a viable option.

### ***THE PREDOMINANT OUTSOURCE VALUE WAS ACHIEVED IN COMPETITIVE ENVIRONMENTS***

On the whole, outsource value was predominantly achieved by firms that are 75% or more outsourced through transfer leverages (page 250) whilst in a competitive environment. In these circumstances, specialisation and economies of scale advantages are realised, as previously mentioned.

This suggests that firms that outsource should ensure that there is a transfer of unwanted assets at the time of outsourcing, and should assess the level of competition within the firm's core business operating environment prior to deciding to outsource.

Thus, in industries or organisations that are shielded from market force competition, the value obtained from outsourcing may either be released to a lesser extent, or simply not required.

### **7.12 INSOURCE VALUE FINDINGS**

Once again, it was found that the more insourced a firm was, the more perceived insource value was achieved. In fact, those that insource 75% or more of their FM were 18.4% more likely to achieve insourced value than those with less than 50% insourced methods, and 8.6% more likely to achieve insourced value than those that insource only 50% of their FM (page 254). Thus, when planning ahead, the more insourced a firm, the higher the rate of insourced value that can be predicted.

The presence of outsourcing with insourcing therefore lessens the overall insource value almost proportionally.

### ***FIRMS SHOULD INSOURCE MORE TO SAVE MANAGEMENT TIME AND INCREASE CONTROL AND OPERATIONAL FLEXIBILITY***

The main areas of value were achieved in significantly less management time required to manage the FM delivery, with significantly more flexibility for those that insourced

more. However, the most significant value was achieved in the area of increased control.

Those firms that insourced more had an average of 36% more control over their FM delivery than those that insourced less, and were 15% less affected by opportunism also (page 256).

Thus, firms that decide to insource their FM should plan to direct these particular values, treating them as a newly acquired resource, to ensure they are maximised. Accordingly, when control is important to an organisation, insourcing delivers this.

### ***INSOURCE VALUE IS CENTRED AROUND FM BEING STRATEGIC***

Those firms that are 100% insourced are unaffected by centralisation and whether or not the assets are owned, however, FM being considered as strategic for the firm was a main contributor to insource value (page 260) affecting opportunism, control, flexibility, and, to a lesser extent, uncertainty. Understanding this, firms that consider their FM as strategic should consider insourcing to achieve value, not only when control is important, but also when FM is considered strategic to a firm. When this is the case, it seems that more focus is given to the function, and the result is increased value stemming from the identified value propositions listed.

### ***PARTIAL INSOURCING REMOVES SOME VALUE PROPOSITIONS BUT INCREASES OTHERS***

However, those that only insourced 75% of their FM were unaffected by uncertainty, due to the nullification effect. This nullification affected those that insourced 50% of their FM the most, as such opportunism<sup>32</sup> is also nullified (page 261).

As such, firms may be able to discount uncertainty and opportunism for these two forms of insourcing when planning future strategies.

Those that then only insource 25% of their FM experience much lesser values but across all the value propositions. This is particularly so for uncertainty.

Therefore, firms that adopt this form of insourcing should plan for the possibility of less value realisation, and expect this value, aggregated across all value propositions.

Firms therefore need to carefully choose the extent of outsourcing they adopt to ensure a correct level for this operating environment. This way, FM becomes more of a business enabler, with correct focus on the extent and level of FM investment.

### **7.13 OUTSOURCED COSTS FINDINGS**

Once again, those firms that outsourced more experienced more perceived outsourced costs. In fact, those firms that outsourced 75% or more of their FM experienced 30% more costs on average (page 265).

Thus, when planning ahead, the more outsourced a firm, the higher the rate of outsourced costs that may be produced.

These costs were either not present or present to a much lesser extent for in-house FM delivery or partial outsourcing methods in the data set. Thus it is suggested that there are unique costs associated with outsourcing.

#### ***OUTSOURCING CAUSES CONTROL AND HIGH-LEVEL FLEXIBILITY LOSS***

Control and flexibility loss were the most significant costs, especially for those firms that outsource 50% of their FM (page 267).

Basically the firm becomes locked in, regardless of contract provisions. The external marketplace is invited into the firm. This may have an influence, both positively and negatively.

#### ***OUTSOURCED COSTS STILL PREVALENT AFTER SHIFTING BACK IN-HOUSE***

However, reduced core competency was only a significant cost for those firms that outsourced only 25% of their FM, due to the time differential in realising this cost<sup>7678</sup> (page 268).

However, this time lag did not affect firms that were currently 100% insourced for the costs of multiple providers and monitoring time. But this time lag did, however, affect those that were currently 100% insourced, for non-co-operation, reduced working conditions, reduced core competencies, and hollowing-out.

Thus, it can be suggested that even after switching back to insourced methods, the effects of outsourced costs may still be present.

This influence has ramifications well past the point at which the external labour market has left the firm. In essence, the firm may never be the same again, thus emphasising the importance of decision-making for outsourcing or not.

### ***PARTIAL OUTSOURCING REMOVES SOME COSTS***

Hollowing-out was not present for those that insourced 75% of their FM, as the quantity of outsourcing was too low and is based on the current procurement method. Thus firms can discount this cost for this methodology.

Nullification effects removed monopoly, shortage of skilled workers, control, flexibility, and monitoring from being an outsource cost for those that were 50% outsourced. These should therefore be excluded when predicting future strategies for this methodology (page 275).

However, those that were 75% outsourced, only reduced working conditions were nullified. It seems that firms that outsource less are affected most by reduced working conditions. This should be planned for.

Accordingly, less outsourcing represents less risk with less impact on the firm, however, with less opportunity for value creation.

### **7.14 INSOURCED COSTS FINDINGS**

Once again, those firms that insource more realise more insource costs. In fact, those firms that insource 75% of their FM were 62.12% more likely to realise insourced costs than less insourced methods (page 278).

Thus, when planning ahead, the more insourced a firm, the higher the rate of insourced costs that may be produced.

Thus it can be suggested that insourcing may deliver a unique cost to a firm not found with outsourcing models.

### ***HIGH RATE OF STAFF INCREASES THE MAIN INSOURCED COST***

This cost occurred with a significant rate of staff increase for those that insourced 100%, in comparison to those that insourced less (page 282). Thus, we can predict a “rate” based on the level of insourcing. However as this was not the case with those that predominantly outsourced, we should not plan for this cost for firms that outsource 75% of their FM.

Also, the more FM categories that existed as part of the FM delivery, then the higher the rate of staff increases that took place. Firms can expect staff increases if their FM is multidisciplinary.

Basically, in-house FM delivery that is becoming or has become overly complex demands a high level of resourcing when performed in-house.

## **7.15 THE IMPACT OF TIME FINDINGS**

It was also hypothesised that this degradation in perceived cost and value would cause firms to “change” to alternate forms of FM delivery, either through the internal labour market (insourcing) or the external labour market (outsourcing).

However, it seems that the impetus to change delivery methods due to perceived value and cost fluctuations was happening predominantly after many years.

### ***THE FIVE YEAR CYCLE***

It was found that value and cost levels do indeed deteriorate at an approximate five-year interval (page 284). If misalignment to the theorised independent variables existed, these cycles would indeed cause cost to exceed value. However, it was found that, especially for firms that have insourced, this phenomenon was only causing firms to “switch” at an average of a twenty-year period, if at all. Also this “switch” was only an approximate 30% shift from previous FM methodologies, not a 100% wholesale change (page 230).

This suggests that the “cyclical” nature of the cost and value curves deters firms from switching on the whole as they eventually “right” themselves. That is, the value and cost ratios improve over time, thus forming a cycle.

This would influence firms to remain in their current delivery method. The alarm bells would simply not be ringing loudly enough.

### ***UNDER-REALISED VALUE***

In addition, considering that both major forms of FM delivery under-realised the theorised maximum value that each form could deliver (page 239, 254), these results also therefore suggest that firms simply are not looking at the independent variables postulated in this thesis for value measurement, or even for cost measurement. This would then prevent firms from realising that these cycles even exist.

As firms figure out that these cycles exist within their FM delivery method, then switching may be aligned more to the five-year cycle until these cycles are removed – if at all possible. This should have the effect of maximising the FM delivery method.



## ***THE “NULLIFICATION” EFFECT SHORTENS LIFE CYCLES***

Further, any shift from a previous FM methodology that was partial would not reap the full benefits, as outlined in the previous results (page 286). Thus, should firms be both unaware of cycles, and unaware of the “nullification” effect<sup>91</sup>, as previously discussed, via partial or mixed FM methods, there would be limited evidence of cycles, and thus limited wholesale change after a five-year period.

Indeed, partial outsourcing may in fact be the firm’s attempt at correcting the imbalances of the previous FM delivery method. It is expected that shifting outsourcing levels after an assessment of a firm’s operating environment will become the course of action for firms that understand these dynamics are at play.

## ***WHY “SWITCHING” IS NOT FULLY EVIDENT***

However, it should also be remembered that both “formal recognition” of outsourcing of FM, and FM itself being recognised as a discipline coincided in Australia in the late 1980s. This being the case, we would not expect to see evidence of cycles, or more importantly, firms’ realisation of these cycles for some time whilst both the market and facility management practitioners developed.

This would seem to explain the findings from the questionnaire, in that the current average period of FM delivery method without change is only ten years, as opposed to the previous period of twenty years (page 230). We would therefore expect to see a trend forming and this time period reduce to about five years in the future as firms become educated to both value and cost cycles and their measurement variables (Burdon 2004).

In more matured markets there does seem to be evidence in the economy at large of this five- to seven-year cycle taking place. In November 2004, a Gallup survey of 150 British businesses found that more than 30% believed their outsourcing strategies have delivered fewer benefits than expected. The survey, commissioned by Proudfoot Consulting, questioned 925 senior executives in nine countries and six sectors. Fifteen per cent of the companies said outsourcing had failed and they had brought functions back in-house. However, about five years earlier, according to market review surveys undertaken between 1999 and 2003, the climate for outsourced services was generally favourable within the UK economy (Luciani 2005a, 2006; Luciani & McCormick 2006) .

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<sup>91</sup> For example, partial outsourcing methods require more staff to deliver them.

This seems to confirm that in the industry in general, both value and cost may reach their simultaneous maximum and minimums within this five-year time frame as previously discussed. It also suggests that in a matured market, firms overall should be able to predict a five-year cycle for the value and cost variables presented in this thesis (subject to the limitations previously discussed).

Understanding this, and especially for Australia or other nations whose FM is yet to reach full maturity, firms should plan to address the cycles regardless of whether there is evidence in their history of shifting from insource to outsource, as value and costs may not be easily and directly associated with these decisions.

However, once identified, firms that then address the corresponding value and cost drivers and that then alter or vary their outsourcing levels to ensure maximum value, should be able to eventually do away with cycling (especially full-blown switching), as long as they monitor changes in their operating environment.

## **CHAPTER EIGHT**

### **CONCLUSION AND FUTURE RESEARCH**

#### **8.1 INTRODUCTION**

In this chapter conclusions will be drawn from the thesis with discussion surrounding those findings that have now contributed to the existing understanding of FM delivery and procurement methods, and that have now also added to the body of knowledge of FM delivery and procurement methods. It is considered important to further deliberate on these findings to allow direct application by industry.

It is intended that by the end of this chapter, sufficient information will have been presented to allow furthering of this research by both academics and professionals.

#### **8.2 HYPOTHESIS OVERVIEW**

The hypothesis was based on the presupposition that perceived FM delivery value and cost deteriorate over time. These perceived value and costs were associated with the two main forms of FM procurement and delivery, being insourced or outsourced methods, and represented a wide and varied basket of advantages and disadvantages (page 4).

The founding of the hypothesis and its findings now suggest that some scientific rigour can and should be placed around a firm's decision to outsource or insource its FM delivery. This was found to be relevant for both the initial decision and future decisions, should organisations seek maximum value and minimum costs from FM procurement and delivery. This was because favourable outcomes were found to be temporary in nature under certain conditions.

Although there has been an identification of both insourcing and outsourcing value and costs throughout literature previously (as discussed in the preceding literature review in chapter 4) it has never before been demonstrated that cause and effect may exist from a unique set of drivers for each FM delivery method.

#### **8.3 FM AND OUTSOURCING ESTABLISHMENT**

FM being progressively recognised as a discipline coincided with its being recognised as an industry through its association with outsourcing. However the cyclical nature of FM procurement and delivery left the FM discipline in an unstable environment. To

achieve credibility as a function, especially during strategic applications, more rigour was needed surrounding the decisions to insource or outsource, without total reliance on outsourcing alone (page 22).

One major issue surrounding this decision-making process was the difficulty in identifying the separation point between insourcing and outsourcing. A key finding in identifying this separation was the extent of transfer of ownership and control that had taken place from inside an organisation to outside the organisation (page 29).

By applying the previously established fundamental principles of outsourcing to FM delivery, it was found that sub-contracting and similar forms of procuring FM services are excluded from being labelled outsourcing in itself (page 33). This was also the case for partnering and alliances. That is, if associated with the unique value and costs identified through the research, this clarification in itself contributes to a more sustainable FM delivery and procurement method through its correct delivery application (page 34).

#### **8.4 UNIQUE FM DELIVERY VALUE AND COST DRIVERS**

Delivering FM services internally, however, was found to have unique advantages over external means, mainly through an employee/employer relationship being able to provide greater control and flexibility to the function. However, it was found that these advantages may be diminished under certain circumstances, to which outsourcing delivered its favourable set of unique advantages (pages 252, 278).

Outsourcing seemed to prevail as the most utilised method of delivering FM services in Australia, bringing correction to high-cost internal FM delivery methods. However, a historical trend of cycling was evident whereby a return to insourcing seemed likely to some degree. This was attributed to the identification of a unique set of value and cost drivers that seem to exist for both insourcing and outsourcing (page 229) under certain conditions.

These drivers have not previously been grouped together in such a way, and their association with a firm's decision to outsource or insource has not previously been researched. Understanding that the postulated value and cost results do indeed influence a firm's decision to insource or outsource, or switch, provides focus on the identification of value and cost "drivers" for FM procurement and delivery methods, which was not previously available to firms (page 69).

## **8.5 FM DELIVERY VALUE AND COST DRIVERS LINKED WITH ORGANISATIONAL OPERATING ENVIRONMENTS**

These drivers were found to be linked with a firm's operating environment, and as such, may play a key role in the determination on whether to insource or to outsource.

Closer examination of these key drivers via a case study and survey suggested that organisational environments may even change at an approximate five-year rate. This then requires FM procurement and delivery responses, namely an alteration of outsourcing levels, to ensure optimum value and cost levels are maintained (page 283, 287).

The suggestion of a five-year trend in the degradation of FM delivery value linked with similar trends of changes in organisational operating environments has not previously been identified. Understanding that these cycles may exist now allows for future planning. This planning would almost certainly reduce both the over-realisation of cost and under-realisation of value from the two main forms of FM procurement and delivery methods, should further research confirm these findings.

## **8.6 THE ALTERATION OF OUTSOURCING LEVELS**

However, it was also highlighted that this link of organisational operating environments with perceived FM value and costs over a five-year period is either not recognised by organisations, or it was difficult to alter the prevailing FM delivery method in a timely manner (page 307).

This inability to alter the prevailing FM delivery method, or, more appropriately, to alter outsourcing levels in a timely manner suggested an affect on an organisation's core business to some degree (page 309). This is now suggesting that a much broader ramification may exist, should an inappropriate level of FM outsourcing exist in a firm's operating environment. This has never before been identified with FM delivery and a five-year cycle. It has now become obvious that FM outsourcing is required to achieve a maximised FM value; however, the extent of outsourcing may have to be altered in line with the firm's operating environment to avoid organisational-wide ramifications.

It was also suggested that firms adopted partial outsourcing in an attempt to avoid this ramification. The decision to partially outsource FM delivery and procurement methods was found to be inadequate in addressing this situation over the cycle, due to nullification effects on value (page 262). It is now suggested that a dynamic alteration of outsourcing levels that follow changes in organisational operating environments may be a means of achieving maximised value and minimised costs from FM delivery.

## 8.7 INDUSTRY APPLICATION AND FUTURE RESEARCH

It is assumed that organisational operating environments change, and that this change is unavoidable (James 2007). Further research is required to ascertain the feasibility of avoiding organisational change (considered outside the scope of this thesis). Given this, then the benefits to industry from the establishment of an understanding surrounding a five-year cycle of FM delivery value degradation and its link with outsourcing levels would be found in its predictive elements.

However, should the organisational change dynamics outlined in this thesis be able to be altered through human intervention, then the resultant perceived value and costs associated with this environment would not be considered universally applicable. Further research would have to be undertaken to confirm this on industries other than the retail sector, and possibly through the use of secondary research data such as macro economic trend analysis.

Studies in organisational psychology may also be referenced to ascertain how the organisational change dynamics identified in this thesis are subject to human intervention, and under what circumstances.

Thus assuming that a firm's operating environment will dictate the optimum outsourcing level for FM procurement, should the identified changes in these operating environments be found to be avoidable, then the optimum FM procurement method can thus remain static once established. As such no prediction would be required as each industry may have a different set of outcomes. Thus it is important to ascertain whether these "shifts" in operating environments are necessary to achieve a Firm's strategic objectives when considering specific organisational contexts.

However, assuming these shifts are unavoidable, building upon this fundamental understanding that firms may be able to predict that cycles in value and cost levels fluctuate at regular intervals, it may now be possible to forecast, which would allow firms to locate their current FM delivery method and associated value and cost indicators on this cycle. In doing so, firms would be educated to the possibilities and ramifications of their decisions with regard to current and future FM procurement and delivery methods.

By establishing the extent of outsourcing for a firm's current FM delivery method<sup>92</sup>, it would be possible for firms to compare current value and cost levels<sup>93</sup> with the pre-determined levels, as indicated in this thesis.

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<sup>92</sup> The extent of outsourcing can be measured by adopting the previous definition of outsourcing and applying the principles within it to a firm's current FM delivery method.

<sup>93</sup> This is a generalisation depicting values as say, high, medium, low, rather than exact quantification.

Further, it may also then be possible to predict further out in time what these value and cost levels may be, given their current situation and current alignment to the independent variables listed in this thesis.

This would allow firms to both benchmark value and cost against the theorised maximums and to plan future FM delivery methods to ensure these values are favourable. This would involve changing the level of outsourcing/insourcing.

### **8.7.1 THE ADVANTAGES OF A PREDICTION MODEL APPROACH**

Following this logic and using a prediction model approach (subject to the limitations outlined) (refer to Appendix 3 for a general guide) holds enormous value for firms.

#### ***A. QUANTIFYING THE EXENT OF OUTSOURCING***

Firstly, by simply quantifying the extent of “true” outsourcing, firms will be able to make informed decisions around changes in their operating environment. This is given that certain “drivers” of value and costs are affected by the extent of outsourcing and vice versa. This will allow firms to make informed decisions with some certainty around the consequences to their current FM delivery method.

#### ***B. UNDERSTANDING THE IMPACT OF TIME***

Secondly, by understanding the impact of time, namely a five-year cycle, firms can “arrange” their circumstances to minimise costs and maximise value as much as possible in advance, in preparation for change. An example of this would be the contract term negotiated for FM contracts.

#### ***C. QUANTIFYING VALUE AND COST DRIVERS***

Thirdly, by understanding that maximum value and minimum costs are achieved through a close alignment to the extent of outsourcing and the value and costs drivers listed, firms now have the tools to audit their existing FM delivery method to ensure it is maximised as much as possible, by using the findings of this thesis as a benchmark. In doing so, firms may be able to prolong maximum value and minimise costs without the need to change FM delivery methods. That is, through various performance management techniques, as their existing alignment to the value and cost drivers may be partially, or fully aligned already, however, the existing FM procurement method

may not be fully implemented. An example would be to provide further training for in-house staff if currently insourcing.

#### ***D. CHOOSING THE MOST APPROPRIATE FM DELIVERY METHODS***

However, the main benefit of a prediction model approach is obtained when an audit reveals little or no alignment to the value drivers for a firm's current FM delivery method. In this case firms now have the ability to make informed decisions on the most appropriate FM delivery method, and are also able to plan for the most appropriate model years in advance (subject to a constant operating environment). Even if this operating environment changes, firms can now build scenarios on the most likely shift and plan for the most appropriate FM delivery method(s) in advance.

#### **7.7.2 PREDICTION MODEL LIMITATIONS**

Obviously there are limitations to following a model such as this.

#### ***MACRO-CATEGORISATION***

Firstly, grouping FM delivery methods into three bands (75%+, 50%, 25%-) is a fairly large basket holding the entirety of all the functions that constitute facility management for the firm. It may not be possible to group all the categories together as some FM categories may be "stand alone" and are unable to follow a generic grouping. For example, a firm that outsources 25% or less may be unable to outsource more, as the 75% insourced portion may be highly strategic to the firm. When using a prediction model approach, the firm is limited in options immediately, in that it can never shift into another band, unless the value and cost drivers also change. The remaining 25% therefore remains unaltered.

In order to capture the remaining 25%, and apply it to a prediction model, each individual FM category would have to also be applied to the model. In this case, further research would have to be undertaken to ascertain whether scale impacts upon both the cycles of value and cost, and the associated variables as a single category within FM may produce different results.

However, as the basis for calculating optimum outsourcing levels for FM procurement has now been suggested, the same principles should also be able to be applied to individual FM functions. This presents a whole new way in which functions within FM can be viewed. Measuring FM functions not only on the basis of performance



output, but also by their level of effectiveness under different FM Procurement methods (insourced or outsourced) would essentially establish underlying ground rules for their procurement.

Should further research indeed indicate that the value and cost output of certain individual FM functions remains constant during changes in organisational operating environments, then the same research should also indicate under which procurement method delivers the most static value proposition. This would effectively isolate those FM functions, establishing them under the most appropriate FM procurement method ongoing. This in itself is a significant contribution to FM resource procurement efficiency.

### ***LIMITED FINANCIAL QUANTIFICATION***

Secondly, financial measurement of the costs and value variables listed in the model may be hard to quantify, as some do not immediately impact financially. This poses a problem for firms, in that decisions around change largely require an investment of time and finances. Without financial quantifications of the benefits, firms may be discouraged from making the necessary changes when faced with making change decisions. Thus further research is required to quantify in financial terms the value and costs variables listed in this thesis.

However this simply may not be possible or feasible for every variable. In these instances, presently there would only be the findings of this thesis available for firms to benchmark against. As such the use of secondary research may be used and developed to quantify the financial costs and benefits of the variables listed. This may involve a range of different disciplines outside that of Facility Management.

In doing so, it may well be established that the findings of this thesis can also be applied to other industries and disciplines outside of Facility Management. Should this be found to be the case, the knowledge surrounding the dynamics of services procurement would have been greatly contributed to.

### ***DIFFICULTY IN BENCHMARKING***

A final point to note is the qualification and quantification of the value and cost drivers. Firms adopting a prediction model approach are required to assess their current value and cost driver amounts. As these drivers involve the firms' operating environment, firms will need a point of reference or benchmark to gain relativity in order to adequately quantify and qualify these drivers. Further research is required into these

value and cost drivers to develop benchmarks for like industries. In this way, firms can benchmark and compare their value and cost driver amounts against like for like industries with similar operating environments. However, firms should still be able to develop these benchmarks to some extent over time by comparing similar firms with similar operating environments. An example of this can be found in the David Jones case study, wherein internal benchmarking and external statistics were used.

Measuring the drivers identified in this thesis will once again require a multidisciplinary approach as the drivers are diverse. In-fact, it could now be argued that each and every driver of FM value and cost identified warrants further research to establish quantifiable measures for them. However as suggested previously, in establishing these measures other functions outside of the FM discipline may be able to adopt them, allowing for the application of the findings of this thesis to a much broader industry and discipline group.

## **7.8 BROADER BENEFITS AND RAMIFICATIONS**

Assuming that the challenges of macro categorisation have been accounted for and that financial quantification of value and cost variables and drivers are established, then the impacts on the general economy would be significant. Especially should the findings be found applicable to multiple disciplines and industries other than just FM.

Firstly, there would be a marked reduction in the amount of change required by organisations to achieve maximum value for services procurement as micro adjustments would achieve maximum efficiency for the services procured rather than complete changes in services procurement methodologies in most cases. This would result in the avoidance of costs associated with these changes, such as management time, consultant costs, set up costs, etc.

Secondly, as service companies, or outsource providers, would be procured for longer periods of time, if not indefinitely (even though there would be adjustments in scope), then it could be reasonably expected that initially the cost of procuring these services would reduce. This would be due to the ability of service companies to make investment decisions for long term contracts rather than shorter term arrangements.

Under these two newly created environments, it could be expected that alliance type contracting, as opposed to client/server arrangements, would become the dominate form of delivering services. As previously mentioned in this thesis, partnering and alliances are on the increase (Kaplan & Hurd 2002), thus this could indicate that organisations are in-fact adopting similar principles as presented in this thesis already.

Thirdly, just as we would expect cost decreases for external services due to longer term arrangements and reduced duplication, the internal organisational resource structure could be arranged in advance to reflect optimum resources according to the predicted method of delivering the services. This would result in a reduction of resource wastage and duplication also.

Understanding this, it could be expected that organisational wide strategic planning would now incorporate these predictions with more certainty, and by management levels within the organisation's operations not previously involved. Certainly for FM, this would increase its contribution to the organisation.

Fourthly, having established best practice services procurement, the reduction in opportunistic behaviour would be dramatic. This would be because most of the guess work would have been eliminated from resource procurement and delivery methodology. Contract scope and duration would have a method of measurement directly linked with the client organisation's operating environment. It is this operating environment which would dictate the extent of services required in both scope and duration.

Likewise, service organisations would also have their performance measured in conjunction with these changes in the client organisation's operating environment, thus avoiding performance degradation which in fact was outside of their control. The same principles would be applied to internal team performance also.

Lastly, to effectively capture these anticipated benefits, it is likely that a process of ongoing measurement would need to be developed. That is, measuring organisational operating environments and their changes with prescribed effects on resource procurement and delivery. This may take the form of a set of measurement standards for firms to work by such as the Australian Standards (AS), International Organisation for Standardisation (ISO), and other industry adopted measurement and process systems.

The use of technology in this situation would seem the most logical way of measuring a dynamic environment such as a firm's operating environment once these standards have been adopted. Once initial parameters were set, live monitoring could be performed which would alert on key changes in the operating environment and predict the most appropriate resource methodology through alteration of insourced or outsourced resources.

**APPENDIX 1  
DAVID JONES CASE STUDY**

**Table 37 – David Jones FM Costs August 200 to July 2004**

**August 2000 to July 2001**

<b>Account No.</b>	<b>Actual</b>	<b>Budget</b>	<b>Variance</b>	<b>Total GLA*</b>
<b>45401 – Light and Power</b>	8,490,199	8,580,233	90,034	
<b>45402 – Gas and Oil</b>	303,537	401,441	97,904	
<b>45403 – Light Globes Replacement</b>	703,449	743,559	40,110	
<b>45450 – Cleaning Materials</b>	715,232	738,883	23,651	
<b>45451 – Contract Cleaning</b>	8,048,588	8,036,071	(12,517)	
<b>45453 – Waste Removal</b>	1,065,305	1,120,203	54,898	
<b>45460 – Sundry Occupancy Costs</b>	73,122	93,430	20,308	
<b>45501 – Repair &amp; Maint: Buildings</b>	678,111	753,353	75,242	
<b>45502 – Repair &amp; Maint: Lifts</b>	62,071	75,713	13,642	
<b>45503 – Repair &amp; Maint: Escalators</b>	37,757	112,533	74,776	
<b>45508 – Repair &amp; Maint: Plt, Fixt &amp; Fittings</b>	669,304	824,380	155,076	
<b>45510 – Repair &amp; Maint: Electrical</b>	335,845	329,360	(6,485)	
<b>45511 – Repair &amp; Maint: Air- conditioning</b>	145,635	184,041	38,406	
<b>45512 – Repair &amp; Maint: Refrigeration</b>	114,755	104,160	(10,595)	
<b>45551 – Cntct Maint: Buildings</b>	278,437	257,910	(20,527)	
<b>45552 – Cntct Maint: Lifts</b>	999,933	973,513	(26,420)	
<b>45553 – Cntct Maint: Escalators</b>	1,062,103	1,010,116	(51,987)	
<b>45560 – Cntct Maint: Electrical</b>	1,344,560	1,363,439	18,879	
<b>45561 – Cntct Maint: Air- conditioning</b>	1,530,913	1,601,548	70,635	
<b>45562 – Cntct Maint: Refrigeration</b>	151,311	179,120	27,809	
<b>TOTAL</b>	<b>26,810,166</b>	<b>27,483,006</b>	<b>672,840</b>	<b>563,250</b>

\*GLA – Gross Lettable Area of Stores in m<sup>2</sup>

**August 2001 to July 2002 (Table 37 cont.)**

<b>Account No.</b>	<b>Actual</b>	<b>Budget</b>	<b>Variance</b>	<b>Total GLA</b>
<b>45401 – Light and Power</b>	11,539,781	11,558,177	18,396	
<b>45402 – Gas and Oil</b>	300,256	362,400	62,144	
<b>45403 – Light Globes Replacement</b>	652,823	814,570	161,747	
<b>45450 – Cleaning Materials</b>	601,340	770,020	168,680	
<b>45451 – Contract Cleaning</b>	8,347,395	8,611,038	263,644	
<b>45453 – Waste Removal</b>	1,113,451	1,177,300	63,849	
<b>45460 – Sundry Occupancy Costs</b>	95,678	102,684	7,006	
<b>45501 – Repair &amp; Maint: Buildings</b>	755,422	1,037,607	282,185	
<b>45502 – Repair &amp; Maint: Lifts</b>	33,418	79,510	46,092	
<b>45503 – Repair &amp; Maint: Escalators</b>	61,534	56,500	(5,034)	
<b>45508 – Repair &amp; Maint: Plt, Fixt &amp; Fittings</b>	668,152	738,452	70,300	
<b>45510 – Repair &amp; Maint: Electrical</b>	277,260	340,400	63,140	
<b>45511 – Repair &amp; Maint: Air- conditioning</b>	114,966	178,536	63,570	
<b>45512 – Repair &amp; Maint: Refrigeration</b>	109,011	131,820	22,809	
<b>45551 – Cntct Maint: Buildings</b>	207,675	315,280	107,605	
<b>45552 – Cntct Maint: Lifts</b>	1,096,380	1,113,130	16,750	
<b>45553 – Cntct Maint: Escalators</b>	1,012,037	1,076,485	64,448	
<b>45560 – Cntct Maint: Electrical</b>	1,404,679	1,411,810	7,131	
<b>45561 – Cntct Maint: Air- conditioning</b>	1,587,322	1,821,300	233,977	
<b>45562 – Cntct Maint: Refrigeration</b>	220,755	221,500	745	
<b>TOTAL</b>	<b>30,199,334</b>	<b>31,918,519</b>	<b>1,719,186</b>	<b>581,796</b>

\*GLA – Gross Lettable Area of Stores in m<sup>2</sup>

**August 2002 to July 2003 (Table 37 cont)**

<b>Account No.</b>	<b>Actual</b>	<b>Budget</b>	<b>Variance</b>	<b>Total GLA</b>
<b>45401 – Light and Power</b>	11,741,133	11,647,884	(93,249)	
<b>45402 – Gas and Oil</b>	207,661	352,524	144,863	
<b>45403 – Light Globes Replacement</b>	696,404	770,657	74,253	
<b>45450 – Cleaning Materials</b>	294,139	335,466	41,328	
<b>45451 – Contract Cleaning</b>	8,569,377	8,356,002	(213,375)	
<b>45453 – Waste Removal</b>	1,118,130	1,090,697	(27,433)	
<b>45460 – Sundry Occupancy Costs</b>	157,044	97,890	(59,153)	
<b>45501 – Repair &amp; Maint: Buildings</b>	1,275,456	1,246,036	(29,420)	
<b>45502 – Repair &amp; Maint: Lifts</b>	52,114	51,347	(766)	
<b>45503 – Repair &amp; Maint: Escalators</b>	40,573	85,336	44,763	
<b>45508 – Repair &amp; Maint: Plt, Fixt &amp; Fittings</b>	863,012	633,487	(229,525)	
<b>45510 – Repair &amp; Maint: Electrical</b>	333,811	318,647	(15,164)	
<b>45511 – Repair &amp; Maint: Air- conditioning</b>	225,408	144,610	(80,799)	
<b>45512 – Repair &amp; Maint: Refrigeration</b>	141,617	104,738	(36,880)	
<b>45551 – Cntct Maint: Buildings</b>	197,202	274,708	77,505	
<b>45552 – Cntct Maint: Lifts</b>	1,138,632	1,135,102	(3,530)	
<b>45553 – Cntct Maint: Escalators</b>	1,225,084	1,115,794	(109,290)	
<b>45560 – Cntct Maint: Electrical</b>	1,429,010	1,154,124	(274,886)	
<b>45561 – Cntct Maint: Air- conditioning</b>	1,623,345	1,590,108	(33,237)	
<b>45562 – Cntct Maint: Refrigeration</b>	200,968	232,810	31,842	
<b>TOTAL</b>	<b>31,530,119</b>	<b>30,737,965</b>	<b>(792,155)</b>	<b>592,644</b>

\*GLA – Gross Lettable Area of Stores in m<sup>2</sup>

**August 2003 to July 2004 (Table 37 cont)**

<b>Account No.</b>	<b>Actual</b>	<b>Budget</b>	<b>Variance</b>	<b>Total GLA*</b>
<b>45401 – Light and Power</b>	10,658,021	12,056,210	1,398,189	
<b>45402 – Gas and Oil</b>	242,889	306,418	63,529	
<b>45403 – Light Globes Replacement</b>	700,956	701,010	54	
<b>45450 – Cleaning Materials</b>	271,768	322,371	50,603	
<b>45451 – Contract Cleaning</b>	8,263,891	8,088,778	(175,113)	
<b>45453 – Waste Removal</b>	1,110,947	845,468	(265,479)	
<b>45460 – Sundry Occupancy Costs</b>	151,703	143,193	(8,510)	
<b>45501 – Repair &amp; Maint: Buildings</b>	2,461,070	963,134	(1,497,936)	
<b>45502 – Repair &amp; Maint: Lifts</b>	51,958	52,335	377	
<b>45503 – Repair &amp; Maint: Escalators</b>	41,557	82,792	41,235	
<b>45508 – Repair &amp; Maint: Plt, Fixt &amp; Fittings</b>	736,929	554,819	(182,110)	
<b>45510 – Repair &amp; Maint: Electrical</b>	339,826	263,508	(76,318)	
<b>45511 – Repair &amp; Maint: Air- conditioning</b>	172,891	142,391	(30,500)	
<b>45512 – Repair &amp; Maint: Refrigeration</b>	169,377	101,752	(67,626)	
<b>45551 – Cntct Maint: Buildings</b>	387,291	258,640	(128,651)	
<b>45552 – Cntct Maint: Lifts</b>	1,153,828	1,168,267	14,439	
<b>45553 – Cntct Maint: Escalators</b>	1,249,567	1,218,774	(30,794)	
<b>45560 – Cntct Maint: Electrical</b>	1,308,969	1,153,899	(155,070)	
<b>45561 – Cntct Maint: Air- conditioning</b>	1,789,977	1,620,685	(169,291)	
<b>45562 – Cntct Maint: Refrigeration</b>	48,261	171,252	122,991	
<b>TOTAL</b>	<b>31,311,675</b>	<b>30,215,694</b>	<b>(1,095,980)</b>	<b>592,489</b>

\* GLA – Gross Lettable Area of Stores in m<sup>2</sup>

## David Jones Outsourced FM Service Level Agreements and Key Performance Indicators

Description of Service	Agreed set of Service Level Standards (SLS) for each individual premises	KPIs	Time to resolve KPI non-compliance/ issues (suggested timeframes)
<b>Planning</b>	Business Continuity Plan	Detailed Business Continuity Plan for the continued provision of all services required (as specified) Completed within six weeks from start of transition in phase of contract 13th December 2001.	<b>2 Days</b>
	Comply with the Transition Plan	Each item and task in the Transition Plan has been performed and all criteria have been met on each of the relevant dates specified in the Transition Plan for that item/task/criteria	<b>7 Days</b>
	Develop 'Building Services Plan' for each Retail Property	Plan complete and issued 6 weeks after the go live date 15 March 2002 and by 1st August	<b>2 Days</b>
	Develop and implement a program to educate and train Outsource Provider as to the operation of our proposal and DJL agreement	By 14th February 2002	<b>7 Days</b>
	Develop Corporate Business Plan	Plan completed and issued one week prior to 1st February 2002, and by 1st August for each following Contract Year	<b>2 Days</b>
	Develop Procedure Manual	No later than 1 week prior to the 1st February 2002, deliver draft Procedure manual to DJL for review, comment and approval by Alliance	<b>2 Days</b>
	Provide a draft Disengagement Plan to DJL approval	Within six months from the commencement date (1st February 2002) 1st August 2002.	<b>7 Days</b>
	Provide initiatives that will result in enhanced services and value	Include in monthly performance report	<b>2 Days</b>
<b>Monthly Reporting</b>	All State Facilities Managers reports submitted within 7 days of the last day of the previous month and no later than 10 days of	Reports submitted within 7 days after the last day of each calendar month	<b>1 Day</b>
	<b>Outsource Provider performance reports</b>	<b>Reports submitted within 7 days after the last day of each calendar month</b>	<b>1 Day</b>



Description of Service	Agreed set of Service Level Standards (SLS) for each individual premises	KPIs	Time to resolve KPI non compliance/ issues (suggested timeframes)
<b>Monthly</b>	Report on Staff movement	Reports submitted within 7 days after the last day of each calendar month	<b>2 Days</b>
	Condition of all Retail Properties	Reports submitted within 7 days after the last day of each calendar month	<b>2 Days</b>
	Monthly Report to include; Activity, Building Maintenance, Mechanical Maintenance, General Repairs, Cleaning, Health, Internal Communications, Luminaries (including usage), Electrical and Decorative Plants and Shrubs	Reports submitted within 7 days after the last day of each calendar month	<b>2 Days</b>
	Compliance with Regulatory Maintenance	Reports submitted within 7 days after the last day of each calendar month	<b>1 Day</b>
	Financial Spend	Reports submitted within 7 days after the last day of each calendar month	<b>2 Days</b>
	Contract Administration Report	Reports submitted within 7 days after the last day of each calendar month	<b>2 Days</b>
<b>Quarterly Reporting</b>	Quarterly Contract review presentation to Alliance	Report/Presentation conducted during the term of the contract	<b>7 Days</b>
<b>Customer Satisfaction Surveys</b>	Develop of improvement plans for DJ4: satisfaction surveys	Improvement plan containing timetable of resolution of issues (Agreed by Alliance) completed within 7 days of receipt of Customer Satisfaction Survey	<b>2 Days</b>
	Respond to Improvement plan from Customer Satisfaction Survey	100% completion of issues outlined within improvement Plan in accordance with agreed timetable	<b>5 Days</b>
<b>General</b>	No action of Outsource Provider will cause DJL to be in breach of any statutory requirement	All statutory requirements met at all times	<b>1 Day</b>
<b>Contract Administration</b>	<b>Subcontractor Agreements are under current agreement</b>	<b>More than 90% of services (Third Party providers) to be under current agreements at the end of each quarter and no individual service undocumented for more than one agreement month</b>	<b>1 Month</b>

Description of Service	Agreed set of Service Level Standards (SLS) for each individual premises	KPIs	Time to resolve KPI non compliance/ issues (suggested timeframes)
	Any contract changes are notified to Alliance	All agreement changes are reflected in the monthly Contract Administration Report	<b>1 Week</b>
	Services are acquired per DJL policies and procedures including expenditure limits	All services are procured in accordance with agreement and any DJL policies	<b>1 Month</b>
	Annual review of agreements un undertaken within one month prior to the anniversary of agreement commencement dates	90% of contracts reviewed within the month prior anniversary and no contract reviewed later than one month after anniversary of the commencement date of any agreement.	<b>1 Month</b>
<b>Accounts Payable</b>	Process invoices within 5 days of receipt	More than 95% of invoices processed within 5 days of receipt and 100% processed within 14 days except where otherwise agreed with DJL	<b>Nil</b>
<b>Work Order Requests</b>	Respond to routine WOR within 1 hour during operating hours	>90% of responses within 2 hours measured monthly by Property Service Centre (PSC)	<b>1 Day</b>
	Respond to routine WOR within 2 hours outside operating hours	>95% of responses within 2 hours measured monthly by Property Service Centre (PSC)	<b>1 Day</b>
	Respond to urgent WOR (Safety and Property) within 1 hour during operating hours	>95% of responses within 1 hour and 100% within 2 hours measured monthly by Property Service Centre (PSC)	<b>1 Day</b>
	<b>Site Disruptions; advise DJL as a minimum requirement 1 day in advance of issue that may cause significant disruption to Operations.</b>	<b>Written advice received by DJL and relevant Store within 1 Day</b>	<b>1 Hour</b>

Description of Service	Agreed set of Service Level Standards (SLS) for each individual premises	KPIs	Time to resolve KPI non compliance/ issues (suggested timeframes)
<b>Safety Risk Management</b>	Implement procedures contained within DJL Safety risk Management manual in line with nominated priorities and action items	All items identified in DJL Risk Management Improvement Plan rectified within recommended period unless agreed with DJL otherwise	<b>3 Months</b>
	Arrange emergency procedures Training for all Wardens and conduct annual evacuation exercise	more than 95% of all properties have had 2 Warden training sessions within the past 12 months and all properties completed within past 14 months	<b>2 Months</b>
		More than 95% of properties have had evacuation drill conducted within the past 12 months and all properties within past 14 months	<b>1 Month</b>
	Manual Evacuation Situation	All Emergencies managed in accordance with Emergency Evacuation and Response Manuals	<b>1 Week</b>
<b>Environmental Risk Management</b>	Implement any procedures contained Within DJL Environmental Management manual in line with nominated priorities and action items	All items identified in DJL Environmental Management Improvement Plan rectified within recommended period unless agreed with DJL otherwise	<b>1 Month</b>
<b>Budget</b>	Provide input to the annual operating expenditure and capital budgets	All required information completed satisfactorily and submitted by nominated dates	<b>1 Week</b>
	Maintain operating expenditure within budget	More than 95% of expenditure on or below budget for each store on a quarterly basis	<b>3 Months</b>
		<b>Remaining 5% to be managed to satisfaction of DJL Alliance</b>	

<b>Description of Service</b>	<b>Agreed set of Service Level Standards (SLS) for each individual premises</b>	<b>KPIs</b>	<b>Time to resolve KPI non compliance/ issues (suggested timeframes)</b>
<b>Document Administration</b>	Maintain the following reference documents on each store: Building Operation Manual Services/Contractors Maintenance Files Drawing Plan register OHS Documents Environmental Documents Asset Register Emergency Evacuation and Response Manuals Quality Manual/System Essential Services Certification	Measured and inspected by Outsource Provider National DJL Facilities Manager	<b>1 Month</b>
<b>Building Structural</b>	Ensure appearance, condition and function of building fabric is maintained or enhanced	No decrease in asset/system performance or standard	<b>2 Days</b>
		No upward trend in reporting WOR issues as measured by PSC	<b>7 Days</b>
<b>Mechanical Services</b>	Ensure performance, condition and function of building fabric is maintained or enhanced		<b>2 Days</b>
		No upward trend in reporting WOR issues as measured by PSC	<b>7 Days</b>
	Ensure all statutory and legal requirements are met	No breaches	<b>2 days</b>
<b>Electrical Services</b>	Ensure performance, condition and function of building fabric is maintained or enhanced	No decrease in asset/system performance or standard	<b>2 Days</b>
		No upward trend in reporting WOR Issues as measured by PSC	<b>7 Days</b>
	Ensure all statutory and legal requirements are met	No breaches	<b>7 Days</b>
<b>Hydraulic Services</b>	Ensure performance, condition and function of building fabric is maintained or enhanced	No decrease in asset/system performance or standard	<b>2 Days</b>
		No upward trend In reporting WOR issues as measured by PSC	
	<b>Ensure all statutory and legal requirements are met</b>	<b>No breaches</b>	<b>1 Day</b>

Description of Service	Agreed set of Service Level Standards (SLS) for each individual premises	KPIs	Time to resolve KPI non compliance/ issues (suggested timeframes)
<b>Fire Services</b>	Ensure performance, condition and function of building fabric is maintained or enhanced	No decrease in asset/system performance or standard	<b>1 Day</b>
		No upward trend in reporting WOR Issues as measured by PSC	<b>2 Days</b>
	Ensure all statutory and legal requirements are met	No breaches	<b>2 Days</b>
<b>Access Communication Services</b>	Ensure performance, condition and function of building fabric is maintained or enhanced	No decrease in asset/system performance or standard	<b>2 Days</b>
	Ensure integrity of card and key databases	Quarterly audit of card and key records	<b>1 Day</b>
<b>Enemy Management</b>	Monitor, analyse, manage and report on enemy usage	More than 90% of Property energy reports submitted within 14days after quarter end and no later than 21 days	<b>2 Days</b>
	Minimise consumption without negative operational impact on each site	More than 95% of Properties have no annual increase in energy consumption/demand and 5% have a decrease	<b>2 Days</b>
<b>Cleaning Services</b>	Ensure satisfactory cleaning standard	No upward trend in reporting WOR issues as measured by PSC	<b>7 Days</b>
<b>Landscape</b>	Ensure appearance and condition of landscape areas is maintained or enhanced	No decrease in asset/system performance or standard	
<b>Essential Services</b>	Ensure properties have been certified annually per statutory requirements	More than 90% of properties annual certification completed on or before the required date within past 12 months and all properties completed within 14 months (Verify with building owners)	<b>2 Days</b>
	<b>Ensure properties have been certified annually per statutory requirements during fit-outs, Make good and Development Stages</b>	<b>For all Properties, provide signoff on DJL pre-acceptance of works.</b>	<b>5 Days</b>

## **APPENDIX 2**

### **Questionnaire Survey**

Date:

Dear Sir/Madam,

My name is Paul Luciani and I am a student in the Doctor of Facility Management degree at the University of Technology, Sydney, under the supervision of Dr John Twyford. I am required to produce a thesis, researching an area of my choice in the Facility Management discipline. My research topic is:

Facility Management Procurement

I am writing to request your participation in my research by completing a short questionnaire accompanying this letter. Participation in this questionnaire is completely voluntary and your participation and your professional insight and opinion will be of significant value and much appreciated.

Participants of this survey will be members of the Facilities Management Association (of which I am a member), and other related professional bodies. Your details were randomly selected from the members' directory. If you feel you are not the most suitable person in your organisation to complete this questionnaire, it would be greatly appreciated if you could forward the contents of this envelope to a person who is a full-time employee of the organisation, and who is responsible for managing those who manage the facility management delivery for your organisation.

The university requires all dissertation students to complete and submit an ethics submission before any testing can take place. The Faculty Ethics Committee critically examines this submission to ensure that all testing is carried out with the highest level of professionalism and ethical consideration to guarantee the security of all participants. In the interest of confidentiality the survey will be completely anonymous. On return of the questionnaire, at no time will your personal details be divulged to either the research team or the readers of the thesis.

Due to extremely limited time frames, prompt completion of this survey would be very much appreciated. A stamped return addressed envelope is included for the safe return of your valued information. Your return of the questionnaire will be considered as consent to participate in the survey.

All records of data and research collected throughout the study will be stored in a secure location at the University of Technology, Sydney for a period of five years following the completion of the research. The original and hard copy of the questionnaire will be the only documentation of the survey. Electronic copies will not be produced.

Any queries about this research may be directed to John Twyford, Faculty of Design, Architecture and Building, The University of Technology, Sydney, (02) 9514 8994.

If you would like a copy of my results or entire thesis, please contact Dr John Twyford on the number above or at [john.twyford@uts.edu.au](mailto:john.twyford@uts.edu.au).

Thanking you in advance,

Yours sincerely,

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Paul Luciani  
(Research Student)

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Dr John Twyford  
(Research Supervisor)

## QUESTIONNAIRE

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**Researcher:**

Paul Luciani

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**Questionnaire Instructions:**

1. Please answer each question.
  2. To answer a question, please place a tick in the box of your choice, or write the answer in the space provided (as indicated).
  3. For questions that allow additional comments, please write your response.
- 

**Definitions:**

The following definitions have been supplied to you to help with your understanding of the survey questions.

<b>Assets:</b>	The physical or intellectual resources that an organisation owns or has under its direct control
<b>Bounded Rationality:</b>	Where the human mind is limited in comprehension and communication, yet the complex tasks of FM are not
<b>Core Business:</b>	The primary business purpose for which the organisation exists (excludes support services)
<b>Decentralised:</b>	Where the organisation is controlled, run and operated from many regional centres, as opposed to being completely run from a central head office location.
<b>Hollowing-out:</b>	Where an organisation loses substance from within the company, forfeiting some ability to maintain core business objectives over the long term
<b>Multidiscipline:</b>	Where there is a necessity for multiple tasks from different skill sets to satisfy the requirement of Facility Management services
<b>Opportunism:</b>	Where outside firms take advantage of their position to gain unfair advantage over a client organisation
<b>Outsourcing:</b>	The procurement of goods and services from an external provider where there is a transfer of ownership and control of processes and or assets, for a specified period of time, under the terms and provision of a contract
<b>Strategic:</b>	Any function considered by an organisation to directly contribute to, and be intrinsically integrated with the core business, to which omission would reduce competitive advantages
<b>Specialisation:</b>	Concentrated unique abilities within a function for the direct application on a specific use
<b>Transfer Leverages:</b>	Initial and immediate advantages gained through the process of transferring from in-house to outsourced FM
<b>Uncertainty:</b>	The amount of probability that unfavourable conditions will affect assets

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**Before you start:**

- There are no right or wrong answers, so answer openly and honestly
- Anonymity is guaranteed
- Certain questions contain a section that allows you to inject your personal opinions and add comments to your answers. This is not compulsory but would be appreciated.

## FACILITY MANAGEMENT QUESTIONNAIRE

### Question 1 Employment Function

Are you employed by an organisation that provides Facility Management (FM) Services to clients? That is, do you work for an outsource service-provider?

Place a tick (✓) in one box only

☐ Yes

Or

☐ No

---

### Question 1a

Are you responsible for the FM function for your organisation (either by direct management or by managing others who manage the FM for the organisation)?

Place a tick (✓) in one box only

☐ Yes

Or

☐ No

If you answered no, then please specify your role: \_\_\_\_\_

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### Question 1b

Of the following functions, please tick all of those that are considered part of the FM function for the organisation.

Place a tick (✓) in each relevant box

- ☐ Plant and Equipment Management
  - ☐ Building Maintenance and Management
  - ☐ Grounds Management
  - ☐ Utilities Management
  - ☐ Architectural and Engineering Design
  - ☐ Space (Churn) Management
  - ☐ Administration Management
  - ☐ Construction and Project Management
  - ☐ Corporate Real-estate Management
  - ☐ I.T Management
  - ☐ Other (please specify) \_\_\_\_\_
-



## Question 2

### Current Procurement Methodology

Of these Facility Management functions, as a whole, to what extent are they outsourced? (This does **NOT** include the actual doing of the FM work, for example, a sub-contractor or individual service-providers, but external management responsibility of the day-to-day FM operations for the organisation where the control is the responsibility of a Facility Management outsourcing firm.

Place a tick (✓) in one box only

- ☐ 0% – Not outsourced
  - ☐ 25% – Some outsourced
  - ☐ 50% – Half outsourced
  - ☐ 75% – Most outsourced
  - ☐ 100% – All outsourced
- 

#### Question 2a

For how long has this been the case?

Please complete

Years \_\_\_\_\_

and/or

Months \_\_\_\_\_

---

#### Question 2b

How many FM outsourcing companies manage the FM for the organisation currently?

Place a tick (✓) in one box only

- ☐ 0
  - ☐ 1
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5+
- 

#### Question 2c

Regardless of being outsourced or not, please indicate the number of management staff involved in the delivery of FM for the organisation during this time.

Please complete:

Numbers of Facility Management Staff at start of period \_\_\_\_\_

Numbers of Facility Management Staff currently \_\_\_\_\_

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### Question 3 Previous Procurement Methodology

Prior to this period, was there any difference in the way that the Facility Management function was managed?

Place a tick (✓) in one box only

- ☐ 0% – Not outsourced
  - ☐ 25% – Some outsourced
  - ☐ 50% – Half outsourced
  - ☐ 75% – Most outsourced
  - ☐ 100% – All outsourced
  - ☐ No change – always been this way
- 

#### Question 3a

For how long was this the case?

Please complete, or if no change tick (✓) the box below

Years\_\_\_\_\_

and/or

Months\_\_\_\_\_

OR

- ☐ No Change
- 

### Question 4 Outsourcing

How co-operative was or is the relationship with the outsource provider(s)?

Place a tick (✓) in one box only

- ☐ Not co-operative at all
- ☐ Co-operative sometimes
- ☐ Co-operative half of the time
- ☐ Co-operative most of the time
- ☐ Always co-operative
- ☐ N/A – Have never outsourced our Facility Management

Additional Comments:

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**Question 4a**

Do you agree with the following statement?

“There were transfer leverages (initial advantages that benefited the organisation) during changes from in-house Facility Management to outsourced Facility Management.”

Place a tick (√) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree
- ☐ N/A – have never outsourced our Facility Management

Additional Comments:

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**Question 4b**

Do you agree with the following statement?

“There are economies of scale advantages (that is, benefits from access to volumes and size) for the delivery of the FM function for the organisation gained from the outsource provider.”

Place a tick (√) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree
- ☐ N/A – Have never outsourced our Facility Management

**Question 4c**

Do you agree with the following statement?

“For the delivery of facilities management for the organization, there are advantages gained by the outsourcers specialised management services.”

Place a tick (√) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree
- ☐ N/A – have never outsourced our Facility Management

### Question 5                      The Facility Management Function

Do you agree with the following statement?

“The Facility Management function for the organisation is multidisciplinary in nature, encompassing multiple related disciplines in the one function.”

Place a tick (√) in one box only

- ☐ Strongly disagree
  - ☐ Disagree
  - ☐ Neutral
  - ☐ Agree
  - ☐ Strongly agree
- 

### Question 5a

Do you agree with the following statement?

“The Facility Management function for the organisation is considered by senior management to be strategic for delivering core business objectives.”

Place a tick (√) in one box only

- ☐ Strongly disagree
  - ☐ Disagree
  - ☐ Neutral
  - ☐ Agree
  - ☐ Strongly agree
- 

### Question 6                      The Organisation

To what extent is the core business for the organisation as a whole managed centrally or managed non-centrally?

Place a tick (√) in one box only

- ☐ Fully Decentralised
- ☐ More decentralised than centralised
- ☐ Half centralised, half decentralised
- ☐ More centralised
- ☐ Fully centralised

Additional Comments:

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**Question 6a**

How many employees are there in the entire organisation at present?

Place a tick (✓) in one box only

- ☐ 1 to 50
  - ☐ 50 to 100
  - ☐ 101 to 500
  - ☐ 501 to 1,000
  - ☐ 1,001 to 10,000+
- 

**Question 6b**

Of the assets managed under the FM function as a whole, is physical ownership held by the organisation or by the FM service-providers themselves?

Place a tick (✓) in one box only

- ☐ Fully owned by an FM service-provider
  - ☐ Majority owned by an FM service-provider
  - ☐ Half owned by an FM service-provider
  - ☐ Majority owned by the organisation
  - ☐ Fully owned by the organisation
- 

**Question 6c**

Of these assets, what proportion is considered as unique specific assets (that is, specifically unique to the organisation's core business and not shared by others outside the organisation)?

Place a tick (✓) in one box only

- ☐ 0% – no unique specific assets exist
- ☐ 25% – some unique specific assets exist
- ☐ 50% – half-unique specific and half-shared non-unique assets exist
- ☐ 75% – more unique specific than shared non-unique assets exist
- ☐ 100% – fully specific assets exist

Additional Comments:

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**Question 6d**

Of these assets, whether unique and specific or not, how much uncertainty exists in the operating environment (Uncertainty is the likelihood of issues for the assets, requiring considerable co-operation to fix, which could cause major disruptions for the organisation.)

Place a tick (√) in one box only

- ☐ No uncertainty exists affecting assets
- ☐ Some uncertainty exists affecting assets
- ☐ Uncertainty affecting assets exists for half the time
- ☐ Assets are affected more than not by uncertainty
- ☐ Full uncertainty exists affecting assets most of the time

Additional Comments:

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**Question 7                      The Management Environment**

Do you agree with the following statement?

"The organisation is NOT currently able to utilise alternative methods for managing the FM function without time or financial penalty disadvantages being imposed."

Place a tick (√) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

Additional Comments:

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**Question 7a**

For the FM function as a whole, what is the current level of demand for skilled facilities management staff?

Place a tick (√) in one box only

- ☐ No demand exists
- ☐ Some demand exists
- ☐ Demand exists for half of the time
- ☐ Demand exists most of the time
- ☐ Demand always exists

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**Question 7b**

How much organisational management time is spent on monitoring those currently responsible for managing FM for the organisation as a whole?

Place a tick (√) in one box only

- ☐ 0 to 10% of management's time
  - ☐ 10 to 25% of management's time
  - ☐ 25 to 50% of management's time
  - ☐ 50 to 75% of management's time
  - ☐ 75 to 100% of management's time
- 

**Question 7c**

Do you agree with the following statement?

"The Service Level Agreements for managing the facilities of the organisation are simple."

Place a tick (√) in one box only

- ☐ Strongly disagree
  - ☐ Disagree
  - ☐ Neutral
  - ☐ Agree
  - ☐ Strongly agree
- 

**Question 8****The Core Business of the Organisation**

How competitive is the environment in which the core business for the organisation operates?

Place a tick (√) in one box only

- ☐ No competition
  - ☐ Some competition
  - ☐ Competitive environment exists for half of the time/business
  - ☐ Competition exists for most of the time/business
  - ☐ Highly competitive environment always
-

**Question 8a**

Do you agree with the following statement?

“There has never been an increase in core business competencies or competitive advantages as a direct or indirect result of the current FM delivery for the organisation.”

Place a tick (√) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

Additional Comments:

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**Question 8b**

Do you agree with the following statement?

“There has never been a decrease in core business competencies or competitive advantages as a direct or indirect result of the current FM delivery for the organisation.”

Place a tick (√) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

Additional Comments:

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**Question 8c**

Do you agree with the following statement?

“The organisation has experienced a “hollowing-out” of core business as a result of the current facilities management delivery” (that is, loss of substance, structure and direction as an organisation).

Place a tick (✓) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

Additional Comments:

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**Question 8d**

Does the core business for the organisation operate in a globalised environment (for example, an international market, or a market that is directly effected by events overseas)?

Place a tick (✓) in one box only

- ☐ Not globalised
- ☐ Some globalisation
- ☐ Operates in a globalised environment for half of the time/business
- ☐ Mostly operates in a globalised environment
- ☐ Always operates in a globalised environment

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**Question 9                      Facility Management Delivery**

Do you agree with the following statement?

“When it comes to managing and delivering the FM function for the organisation, there exists bounded rationality” (that is, inability to comprehend all that is required to manage facilities).

Place a tick (✓) in one box only

- ☐ Strongly disagree
  - ☐ Disagree
  - ☐ Neutral
  - ☐ Agree
  - ☐ Strongly agree
-

**Question 9a**

Do you agree with the following statement?

“As an organisation, we have control over the Facility Management function.”

Place a tick (✓) in one box only

- ☐ Strongly disagree
  - ☐ Disagree
  - ☐ Neutral
  - ☐ Agree
  - ☐ Strongly agree
- 

**Question 9b**

Do you agree with the following statement?

“The staffing conditions are favourable for those managing the Facility Management function.”

Place a tick (✓) in one box only

- ☐ Strongly disagree
  - ☐ Disagree
  - ☐ Neutral
  - ☐ Agree
  - ☐ Strongly agree
- 

**Question 9c**

The current level of quality of the Facility Management delivery for the organisation is:

Place a tick (✓) in one box only

- ☐ Poor
  - ☐ Fair
  - ☐ Good
  - ☐ Very good
  - ☐ Excellent
- 

**Question 9d**

Do you agree with the following statement?

“The current Facility Management delivery for the organisation is flexible” (that is, able to change to accommodate business needs).

Place a tick (✓) in one box only

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

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**Question 9e**

Do you agree with the following statement?

“Currently the Facility Management function has been taken advantage of to the detriment of the organization” (that is, opportunism/aggression by firm(s)).

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

Additional Comments:

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**END**

### Facility Management Categories Definitions

	Category	Description	Associated Skill Sets
1	Plant & Equipment Management	Physical assets requiring regular maintenance for building services, e.g., air-conditioning plant, fire services, commercial kitchens, etc	Mechanical/electrical engineering Fire engineering Technical engineering
2	Building Maintenance & Management	Typical building fabric maintenance and building upkeep, e.g., structure, floors, ceilings, fixtures and fittings, general finishes like painting, cleaning, security, waste management etc. (may include OH&S)	Technical trades Interior designs Logistics management Structural engineering
3	Grounds Management	External maintenance of grounds, e.g., civil work, landscaping, etc.	Civil engineering Horticulture Layout designers
4	Utilities Management	Specific to essential services management, e.g., electricity, gas, water supply for a site.	Engineering Logistics Contracts management
5	Space (Churn) Management	Human and physical allocation of space and associated work, e.g., office layout, workstations, CAD work, floor design etc.	Interior designers Architecture Draftspersons Logistics/relocations
6	Architectural and Engineering Design	Initial design work for services, buildings, internal and external	CAD, planning, surveying, resource management
7	Administration Management	Usually operated for head office functions, e.g., mail-room, bookings, printing, etc. (may include HR or OH&S)	General management Logistics People management OH&S management
8	Construction & Project Management	Typically associated with project work, e.g., building construction, internal fit outs, major upgrades of plant and equipment.	General management Time management People management Construction management Technical management
9	Corporate Real-estate Management	Sometimes known as Property Management. Typically associated with leasehold management, e.g., new leases, acquisitions of sites, property developments. Landlord liaison.	Leasing management Asset management Financial Statistical Negotiating
10	IT Management	Associated with physical Information transfer, e.g., voice, network computing, LAN/WAN	Technical Project management Asset management People management

### Questionnaire Survey Data

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
11	11	1	5	0	5	8	3	2	10	4	4	2	4	4	3	2	5	4	2	2	4	4	1	5	4	4	2	2	1	1	2	4	4	4	4
14	7	1	18	0	2	2	0	0						5	5	5	3	5	5	4			2		5				2	1	1	5	5	5	2
18	9	1	50	0		4	0	0						4	1	2				2			2	3	1				4	1	1	4	4	5	5
21	9	4	3	1	3	3	0	1	140	4	3	5	5	5	4	4	5	4	2	1	2	2	2	2	5	4	1	1	3	4	2	4	4	4	3
29	5	1		0	2	2	0	0						4	5	5	3	5	5	2			1	4	1				1	1	2	3	3	5	1
34	5	2	4	2		14	0	1		5	4	4	4	4	2	4	5	4	4	2	4	2	3	4	1	2	3	3	4	5	5	2	2	3	4
38	10	1	20	0	6	6	0	0						4	4	2	5	5	4	2			3	3	2				5	1	1	2	4	4	3
43	9	1	14	0	1	4	3	0						5	2	2	3	5	2	4			2	3	2				2	2	2	2	3	4	2
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57	9	1	20	0	3	4	1	0						5	4	4	3	5	4	2			1	2	2				2	1	1	3	4	5	2
62	8	1	100	0	2	2	0	0						5	4	5	3	4	2	1			2	4	1				1	2	1	2	3	4	2
70	6	1	10	0	2	2	0	0						5	4	3	3	5	3	1			4	3					4	1	1	3	4	4	3

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
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91	8	1		0				0						5	4	4	4	2	5	3			2	2	1				1	4	4	1	2	2	4
95	10	1	7	0	1	5	4	0						5	5	5	2	5	3	2			2		4				2	2	1	3	3	5	1
97	7	1	5	0	7	7	0	0						4	5	5	5	5	4	2					5				5	2	1	4	4	4	2
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106	6	4	10	1	10	12	2	0		3	1	1	1	5	1	4	5	5	2	2	5	4	5	1	3	1	5	4	1	1	4	3	2	1	5
107	10	1	20	0	3	3	0	0						5	5	4	3	5	3	2			1	2	4				2	1	2	1	5	5	1
108	8	2	5	2	95	85	-10	1	5	2	4	4	4	5	5	4	5	4	4	3	4	4	3	2	3	3	4	2	3	3	2	2	3	4	4

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
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145	9	4	6	1	14	11	-3	2		4	4	4	4	4	4	4	5	5	2	2	2	2	2	3	1	4	2	2	2	4	2	3	3	4	2

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
151	9	2	8	2	20	20	0	0		5	4	4	4	5	4	5	5	5	4	2	2	4	2	3	4	2	2	2	2	2	1	3	5	4	3
155	9	1	80	0	50	30	-20	0						5	4	4	5	5	4	2			1	5	2				1	1	5	4	4	5	4
161	7	2	15	2	35	20	-15	4	20	3	2	1	2	5	5	4	5	5	4	1	2	4	2	4	2	2	3	3	2	2	1	4	4	4	2
162	9	1	12	0	100	65	-35	4	60	3	2	1	1	5	5	3	5	4	3	2	5	4	1	3	3	2	4	3	2	2	1	2	4	4	5
165	4	1		0		8	0	0						4	4	1	5	5	2				3	5	4				2	1	1	3	4	5	4
167	6	3	5	4		5	0	1	20	4		4	4	4	5	4	5	3	1	2	2	2	2	4	1	4	2	4	2	4	1	4	2	4	2
168	9	3	7	1	12	28	16	1	20	5	5	2	4	5	4	3	5	5	4	2	4	3	3	4	5	2	2	1	4	1	2	1	4	4	3
175	11	5	10	5	1	1	0	3		5	4	4	4	4	4	4	5	5	4	4	4	3	2	2	3	4	4	4	3	4	3	2	3	4	4
176	6	4	10	5				3	50	4	5	2	4	5	5	4	5	4	4		5	4	3	1	1	3	3	3	5	2	2	4	3	4	4
178	10	1	15	0	5	5	0	0						5	2	5	4	5	5	1			1	4	1				1	1	1	3	4	4	3
188	6	3	10	1	38	24	-14	0		5	4	4	4	5	5	4	5	5	4	4	2	2	4	4	2	2	2	2	2	2	2	2	4	2	2
190	10	2	10	5	10	17	7	3		4	3	4	4	5	4	2	5	4	4	4	3	2	1	2	1	2	4	4	4	1	1	1	3	4	2
193	3	3	3	5	100		0	2	5	4	3	5	4	5	4	2	5	5	2	2	4	3	2	2	3	4	2	3	1	4	2	4	2	4	4



Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
195	5	4	9	5	350	100	-250	1	50	4	5	4	4	5	4	4	4	5	5	3	3	2	3	1	2	4	4	4	1	2	2	3	2	4	4
201	7	4	9	1	12	12	0	1		4	4	3	2	4	1	4	5	5	4	2	2	3	1	2	1	2	2	2	1	1	1	2	3	4	4
202	10	4	10	1	4	3	-1	1	2	4	5	5	5	5	1	1	4	5	2	1	1	1	3	5	1	5	1	1	1	1	1	1	4	5	1
205	10	1	15	0	2	2	0	0						5	5	2	5	5	2	1			1	4	2				1	1	1	4	4	5	1
209	11	1	17	0				0						1	1	5	5	5	5	1			2	3	2				1	1	1	4	5	5	1
210	8	3	7	5	50	50	0	0		4	3	4	4	5	4	4	5	4	4	2	2	2	5	2	2	3	3	3	1	2	1	2	4	4	4
211	8	2	3	5	10	12	2	0	4	2	2	4	3	4	4	2	5	4	2	2	4	4	4	1	2	3	3	3	1	2	2	1	2	3	4
217	9	1	50	0	22	22	0	0						4	4	3	5	5	2	1			1	4	3				1	1	2	2	3	4	4
227	9	4	4.2	1	2	8	6	2	2.5	3	1	3	4	4	5	5	5	5	4	2	4	4	4	1	4	4	4	4	5	2	2	3	3	4	4
228	8	4	7	1	4	4	0	1	19	5	3	2	3	4	4	3	3	5	1	1	4	1	3	4	4	2	2	2	1	1	2	2	4	4	2
237	7	1	10	0	3	10	7	0						5	3	4	5	4	3	2			1	4	1				1	3	2	4	4	3	3
238	8	3	3	2	4	4	0	0		4	4	4	4	4	4	3	5	5	2	2	4	4	2	4	1	3	3	2	1	2	2	4	3	4	4
241	8	1		0	3	3	0	0						4	3	2	4	5	2	2			1	3	2				1	2	2	2	3	4	3

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
242	9	1	10	0	4	4	0	0						4	4	2	5	5	2	2			1	3	1				1	2	2	4	3	4	3
247	10	1	10	0		4	0	0						5	5	3	5	5	3	2			1	3	2				2	3	1	4	4	5	2
250	10	4	3	5	6	6	0	2	10	4	4	5	4	5	5	4	5	5	4	2	2	2	1	3	2	2	2	2	2	2	1	2	3	4	2
253	10	3	40	5	6	6	0	0		3	3	4	4	4	4	4	4	5	4	2	3	3	3	4	4	4	3	3	1	2	4	4	4	3	4
256	4	5	0.5	1	3	3	0	4	3.8	4	3	5	4	5	5	3	5	5	2	2	3	3	3	4	2	3	3	3	1	1	1	3	2	5	3
258	5	4	12	5	10	3	-7	2	2.5	4	2	3	4	3	4	2	5	4	4	4	4	3	4	2	2	3	4	4	2	2	4	2	3	2	4
263	6	1		0	2	2	0	0						5	5	3	3	5	1	1			5	5	5				2	2	2	2	4	4	1
267	8	1	10	0	7	7	0	0						4	2	5	5	5	2	1			1	3	2				1	1	1	4	3	4	1
268	7	1	20	0	5	3	-2	0						5	3	3	5	5	4	1			1	4	2				1	2	2	5	3	3	2
269	6	1		0		2	0	0						4	4	5	3	1	3	2			1	3	2				1	4	4	2	3	3	4
277	10	1	8.7	0		1	0	0						5	1	5	5	5	3	3			1	3	2				5	4	2	1	3	4	4
278	6	4	6.5	1	1	1	0	1	40	5	4	2	3	5	4	4	4	5	2	3	3	4	3	4	1	4	5	4	1	5	4	2	3	3	3
280	8	1	4	0	1	1	0	5	6	5	5	5	5	5	5	4	3	5	3	2	2	2	2	4	5	5	1	1	5	2	1	4	4	4	2

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
281	6	5	7	1	1	1	0	1	50	5	3	4	4	4	5	5	4	5	5	2	1	2	4	3	1	4	1	1	2	5	1	3	4	4	2
284	10	2	18	3	18	16	-2	0		4	4	4	3	5	3	4	3	5	3	2	3	4	2	2	1	3	4	4	1	4	2	4	4	4	4
286	5	4	12	5	1	1	0	0		4	4	5	4	5	2	3	4	4	2	2	2	2	3	4	2	3	3	3	2	4	4	1	2	3	4
288	9	1		0	1	2	1	0						4	2	5	3	5	4	3			1	4	5				2	1	1	2	4	5	4
291	7	3	2	1	20	20	0	1		3	3	3	3	4	3	5				2	4	4	3	2	2	3	4	3	2	2	4	3	2	3	3
292	7	1	5	0	3	2	-1	2	3	2	1	1	1	4	3	5	3	5	4	2	1	2	2	4	4	1	5	4	3	1	1	3	4	4	1
299	7	2	6	5	24	24	0	3	10	4	3	5	5	5	3	4	5	5	4	2	5	3	4	5	2	4	3	3	1	3	1	5	3	3	4
300	10	4	10	5	6	2	-4	0		1	4	2	4	5	4	5	5	4	4	2	2	5	3	1	5	4	4	4	5	2	4	1	5	5	4
301	10	2	5	1	7	4	-3	1	15	4	1	3	3	4	4	5	3	5	1	2	3	3	2	3	5	4	3	3	1	1	1	4	3	4	3
303	5	3	8	5	3	3	0	0		4	3	3	4	1	3	5	5	5	4	1	2	3	2	4	5	3	2	2	1	4	3	2	3	4	3
304	10	1	4.3	0	0	2	2	0						5	4	4	4	4	4	3			1	5	5				2	2	1	2	3	4	4
307	4	3	7	1	1	1	0	1	30		3	3	4	4	2	4	5	4	2	2	4	2	2	4	4	3	2	2	2	5	4	4	2	4	4
309	10	1	20	0	4	16	12	0						5	5	5	5	4	4	2			1	4	4				1	1	1	2	5	5	2

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
310	8	2	3	2	8	8	0	0		4	2	4	2	5	4	3	5	4	1	2	1	3	1	3	4	1	1	1	2	1	1	3	2	3	2
313	9	1	9	0	2	3	1	0						5	4	5	5	4	2	2			1	2	1				2	1	1	4	4	4	3
315	5	1		0	1	1	0	0						5	2	4	5	2	2	2			1	2	5				5	1	1	2	4	5	3
322	10	1	33	0	4	4	0	0						5	5	5	5	5	2	1			1	4	5				2	1	1	3	4	4	3
326	9	1	18	0	7	7	0	0						5	5	5	5	5	1	1			1	2	4					1	1	2	4	5	
329	10	2	1	1	11	2	-9	1	26	4	1	2	3	5	2	5	5	5	3	2	3	4	3	4	5	1	4	2	1	1	3	2	4	4	3
331	8	1	150	0		3	0	0						5	4	5	2	5	3	2			1	2	4				2	1	1	5	4	5	3
337	9	1	10	0	2	1	-1	0						4	4	4	3	5	2	2			2	4	2				1	2	2	4	5	4	2
342	8	2	1	3	1	1	0	1		2	4	4	3	5	4	1	5	4	2	2	4	2	1	3	5	4	2	2	5	2	1	4	4	4	3
348	9	1		0	7	6	-1	0						5	5	4	3	4	4	2			3	4	5				2	1	1	4	4	4	3
354	10	1	30	0		3	0	0						4	5	3	2	5	5	2			3	4	1				1	1	1	4	5	5	3
358	9	1	2.5	0	0	3	3	0						1	5	4	3	4	2	3			1	4	5				3	1	1	2	5	5	2
360	10	1	4.3	0	3	7	4	0						5	4	5	3	4	5	2			5	4	5				2	1	1	2	4	5	1

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
361	10	1	30	0	3	6	3	0						5	3	2	5	5	5	1			1	4	2				5	1	1	5	4	5	4
381	4	1	2	0	1	2	1	5	3	4	2	3	2	4	3	4	3	1	4	2	2	4	1	4	2	2	2	2	2	1	4	4	3	5	4
385	8	2	10	3	120	120	0	0	5	5	5	5	5	5	2	4	5	4	2	2	2	2	1	4	4	4	2	2	4	3	2	4	4	4	4
389	5	1	5	0	1	2	1	0						3	3	5	5	5	5	2			1	5	4				2	1	1	4	3	5	4
394	8	1	10	0	17	19	2	0						5	4	2	5	5	4	2			1	2	1				1	1	2	2	2	4	1
395	4	5	3	1	7	7	0	1	25	5	4	4	4	4	4	5	4	5	2	1	4	2	3	4	1	3	3	3	1	4	1	4	4	4	3
398	8	2	5	1	3	6	3	0	1	2	3	3	4	5	5	2	5	4	5	1	4	3	2	2	1	2	4	4	1	1	1	4	4	5	2
399	10	2	10	2	2	2	0	0		4	3	4	4	2	2	4	5	5	4	3	2	3	4	2	2	3	3	3	1	4	3	2	3	3	4
400	9	1	8	0	2	2	0	0						5	3	5	4	5	3	4			1	3	1				5	1	1	3	4	5	3
402	8	1	46	0	120	35	-85	0						4	5	5	4	5	2	2			3	3	1				5	1	1	2	4	2	4
412	6	1	30	0	7	7	0	1	30					5	5	5	5	5	5	5			2	4	2				3	1	1	3	5	5	2
413	9	2	5	5	6	6	0	0		4	4	4	4	4	4	4	2	2	3	3	3	3	2	3	3	3	3	3	2	3	1	4	4	4	3
423	7	4	5	5	12	6	-6	2	25	4	4	4	4	4	5	3	5	4	4	4	5	5	2	2	1	4	2	2	1	4	2	1	2	4	4

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
4 2 8	1 1	2	6	0	1	2	1	0		5		3	3	5	4	5	3	5	3	2		3	4	4	4	3	3	3	1	2	2	2	4	4	2
4 3 5	1 0	1	10	0	4	5	1	0						4	3	4	3	1	1	2			3	3	2				1	4	2	4	3	4	3
4 3 7	8	2	1	1	16	13	-3	1		4	2	3	4	5	4	4	3	5	2	2	4	4	3	2	1	2	2	3	1	3	2	4	3	2	4
4 4 5	5	1	20	0	0. 25	3	2. 75	0						4	3	5	3	5	4	2			1	4	3				1		1	3	4	4	2
4 4 8	7	1	50	0	1	4	3	0						5	4	3	3	5	5	1			1	2	3				1	1	1	3	3	5	4
4 5 1	1 0	1	25	0		4	0	0						1	4	5	3	4	1	1			4	4	5				1	2	2	2	3	4	2
4 5 4	6	2	10	3	4	3	-1	0			4	5	4	4	5	5	3	5	3	2	3	4	3	2	5	4	3	2	3	4	2	2	3	4	4
4 5 6	1 1	1		0	4	3	-1	0						5	4	4	4	5	4	4			2	4	2				2	1	1	3	4	5	3
4 5 8	5	1		0		7	0	2	2	4	3	4	4	5	4	4	1	5	4	2	4	4	3	4	4	3	3	3	1	2	2	4	3	4	4
4 5 9	3	1		0	7	7	0	0						3	3	5	5	5	1	2			1	4	1				1	4	3	3	5	4	3
4 6 3	8	2	4	4	10	12	2	0		4	4	4	4	4	4	5	5	5	4	1	2	3	1	4	5	4	4	4	5	4	1	4	4	4	2
4 6 4	9	2	1. 5	5	4	4	0	4		2		3	4	5	4	4	5	5	5	2	4	2	5	2	5	3	2	2	5	2	1	2	5	5	3
4 6 6	8	1	10	0		8	0	0						4	4	5	5	4	4	2			3	2	1				1	2	2	4	2	4	4

Ref	Q1b	Q2	Q2a	Q2b	Q2c start	Q2c current	Q2c sum	Q3	Q3a	Q4	Q4a	Q4b	Q4c	Q5	Q5a	Q6	Q6a	Q6b	Q6c	Q6d	Q7	Q7a	Q7b	Q7c	Q8	Q8a	Q8b	Q8c	Q8d	Q9	Q9a	Q9b	Q9c	Q9d	Q9e
471	9	1	40	0		3	0	0						5	2	5	4	5	4	2			1	5	3				2	1	1	2	4	5	4
482	8	1	31	0	6	20	14	0						4	3	4	5	4	3	2			3	4	3				3	1	1	2	3	4	1
483	10	2	7	5	26	31	5	0		4	1	3	4	5	4	3	5	5	3	2	3	2	2	4	4	4	4	4	2	2	2	2	3	5	2
486	9	1	20	0	8	8	0	0						5	5	5	3	5	4	2			2	4	2				2	1	1	4	4	4	4
487	10	1	5	0	15	15	0	0						4	4	4	3	5	4	2					5				4	2	1	4	4	4	2
490	8	1	20	0		7	0	0						4	3	4	5	4	2	1			3	2	1				1	3	1	2	4	5	4
500	9	1	50	0	6	6	0	0						5	5	5	3	4	4	1			2	4	4				1	1	1	2	4	5	1
511	7	4	8	5	2	3	1	2	10	4	5	5	5	5	4	4	3	5	1	2	3	4	2	4	1	4	3	2	1	2	1	5	4	4	3
512	7	1	75	0	50	50	0	0						1	3	5	5	5	3	4			4	2	5				1	3	2	2	3	4	4
516	2	1		0		5	0	0						4	4	1	4	4	4	2			2	2	1				1	1	1	2	4	4	5
850	9	3	2	1	2.5	2.5	0	1	10	3	4	1	2	5	3	4	5	5	1	2	1	5	3	4	5	1	1	1	5	1	3	4	2	4	4

## Frequency Tables

### Frequencies for Current Procurement Methods

Notes

FREQUENCIES VARIABLES = Q2a, Q2 from questionnaire

#### Statistics for All Combined Data – Current Procurement Methods

		Current length	Current procurement
N	Valid	134	148
	Missing	14	0
Mean		15.1873	1.92
Std. Deviation		20.67737	1.204
Variance		427.553	1.449

### Frequencies for Previous Procurement Methods

Notes

FREQUENCIES VARIABLES = Q3, Q3a from questionnaire

#### Statistics for All Combined Data – Previous Procurement Methods

		Prior Length	Prior Procurement
N	Valid	43	148
	Missing	105	0
Mean		22.0767	.66
Std. Deviation		28.54246	1.164
Variance		814.672	1.354

#### Statistics for 75% or More insourced<sup>94</sup> – Previous Procurement Methods

N	Valid	107
	Missing	0
Mean		.50
Std. Deviation		1.200
Variance		1.441

#### Statistics for 50% insourced – Previous Procurement Methods

N	Valid	17
	Missing	0
Mean		.65
Std. Deviation		.606
Variance		.368

#### Statistics for 25% or Less insourced – Previous Procurement Methods

N	Valid	24
	Missing	0
Mean		1.42
Std. Deviation		1.018
Variance		1.036

<sup>94</sup> Remaining portion is thus outsourced – applicable to all frequency tables.



## Frequencies for In-house Value Variables

Notes

FREQUENCIES VARIABLES =Q6a, Q6, Q5a, Q6b, Q6c, Q6d, Q7b, Q9d, Q9a, Q9e from questionnaire

### Statistics for All Combined data – In-house Value Variables

	Size of Organisation	De/Centralisation	Strategic	Asset Ownership	Assets Unique Specific	Uncertainty	Management Time	Flexibility	Control	Opportunism
N Valid	145	148	148	145	145	146	146	148	148	147
Missing	3	0	0	3	3	2	2	0	0	1
Mean	4.20	3.87	3.76	4.59	3.14	2.10	2.28	4.03	1.74	2.98
Std. Deviation	.962	1.096	1.103	.821	1.207	.825	1.190	.808	1.013	1.101
Variance	.925	1.201	1.216	.675	1.458	.680	1.417	.652	1.025	1.212

### Statistics for 75% or More Insourced – In-house Value Variables

	Size of Organisation	De/Centralisation	Strategic	Asset Ownership	Assets Unique Specific	Uncertainty	Management Time	Flexibility	Control	Opportunism
N Valid	106	107	107	106	106	106	105	107	107	106
Missing	1	0	0	1	1	1	2	0	0	1
Mean	4.06	3.90	3.78	4.53	3.20	2.08	2.02	4.19	1.54	2.85
Std. Deviation	1.022	1.165	1.040	.907	1.199	.801	1.135	.702	.850	1.119
Variance	1.044	1.357	1.081	.823	1.437	.642	1.288	.493	.722	1.253

### Statistics for 50% Insourced – In-house Value variables

	Size of Organisation	De/Centralisation	Strategic	Asset Ownership	Assets Unique Specific	Uncertainty	Management Time	Flexibility	Control	Opportunism
N Valid	16	17	17	16	16	17	17	17	17	17
Missing	1	0	0	1	1	0	0	0	0	0
Mean	4.63	3.76	3.65	4.75	3.00	2.12	2.88	3.41	2.35	3.47
Std. Deviation	.619	.831	1.169	.577	1.265	.857	1.054	.939	1.115	.943
Variance	.383	.691	1.368	.333	1.600	.735	1.110	.882	1.243	.890

### Statistics for 25% or Less Insourced – In-house Value Variables

	Size of Organisation	De/Centralisation	Strategic	Asset Ownership	Assets Unique Specific	Uncertainty	Management Time	Flexibility	Control	Opportunism
N Valid	23	24	24	23	23	23	24	24	24	24
Missing	1	0	0	1	1	1	0	0	0	0
Mean	4.57	3.83	3.79	4.74	3.00	2.17	3.00	3.75	2.17	3.21
Std. Deviation	.662	.963	1.351	.449	1.243	.937	1.103	.897	1.308	1.021
Variance	.439	.928	1.824	.202	1.545	.877	1.217	.804	1.710	1.042

### Frequencies for Outsourced Value Variables

Notes

FREQUENCIES VARIABLES = Q9, Q5a, Q7c, Q6, Q8, Q8d, Q4a, Q4b, Q8a, Q9d, Q4c from questionnaire

### Statistics for All Combined Data – Outsourced Value Variables

	Bounded Rationality	Strategic	SLAs	De/Centralisation	Competitive	Globalised	Transfer Leverages	Economics of scale	Increase in Competencies	Flexibility	Specialisation
N Valid	147	148	144	148	147	147	72	75	75	148	75
Missing	1	0	4	0	1	1	76	73	73	0	73
Mean	1.99	3.76	3.14	3.87	2.84	2.07	3.32	3.41	3.03	4.03	3.63
Std. Deviation	1.179	1.103	1.126	1.096	1.557	1.345	1.136	1.175	1.026	.808	.941
Variance	1.390	1.216	1.267	1.201	2.425	1.809	1.291	1.381	1.053	.652	.886

### Statistics for 75% or More Insourced – Outsourced Value Variables

	Bounded Rationality	Strategic	SLAs	De/Centralisation	Competitive	Globalised	Transfer Leverages	Economies of scale	Increase in Competencies	Flexibility	Specialisation
N Valid	106	107	103	107	106	106	32	34	34	107	34
Missing	1	0	4	0	1	1	75	73	73	0	73
Mean	1.74	3.78	3.32	3.90	2.85	2.08	2.94	3.29	2.82	4.19	3.41
Std. Deviation	1.008	1.040	1.031	1.165	1.548	1.343	1.216	1.194	1.058	.702	1.048
Variance	1.015	1.081	1.063	1.357	2.396	1.804	1.480	1.426	1.119	.493	1.098

### Statistics for 50% Insourced – Outsourced Value Variables

	Bounded Rationality	Strategic	SLAs	De/Centralisation	Competitive	Globalised	Transfer Leverages	Economies of scale	Increase in Competencies	Flexibility	Specialisation
N Valid	17	17	17	17	17	17	16	17	17	17	17
Missing	0	0	0	0	0	0	1	0	0	0	0
Mean	2.71	3.65	2.94	3.76	3.29	2.00	3.69	3.29	2.88	3.41	3.71
Std. Deviation	1.359	1.169	1.197	.831	1.611	1.275	.704	1.105	.857	.939	.686
Variance	1.846	1.368	1.434	.691	2.596	1.625	.496	1.221	.735	.882	.471

### Statistics for 25% or Less Insourced – Outsourced Value Variables

	Bounded Rationality	Strategic	SLAs	De/Centralisation	Competitive	Globalised	Transfer Leverages	Economies of scale	Increase in Competencies	Flexibility	Specialisation
N Valid	24	24	24	24	24	24	24	24	24	24	24
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	2.63	3.79	2.50	3.83	2.46	2.13	3.58	3.67	3.42	3.75	3.88
Std. Deviation	1.345	1.351	1.251	.963	1.532	1.454	1.139	1.204	1.018	.897	.900
Variance	1.810	1.824	1.565	.928	2.346	2.114	1.297	1.449	1.036	.804	.810

## Frequencies for In-house Cost Variables

### Notes

FREQUENCIES VARIABLES = Q1b, Q5, Q2csum from Questionnaire

### Statistics for All Combined Data – Insourced Cost Variables

		Categories	Multidiscipl inary	Staff Nos diff.
N	Valid	148	148	144
	Missing	0	0	4
Mean		7.8378	4.35	-2.2552
Std. Deviation		2.10298	.989	22.57396
Variance		4.423	.978	509.583

### Statistics for 75% or More Insourced – Insourced Cost Variables

		Categories	Multidiscipl inary	Staff Nos diff.
N	Valid	107	107	104
	Missing	0	0	3
Mean		8.0748	4.33	-.7813
Std. Deviation		2.04063	1.062	9.95333
Variance		4.164	1.128	99.069

### Statistics for 50% Insourced – Insourced Cost Variables

		Categories	Multidiscipl inary	Staff Nos diff.
N	Valid	17	17	17
	Missing	0	0	0
Mean		7.2353	4.35	.5588
Std. Deviation		2.10741	.996	6.18941
Variance		4.441	.993	38.309

### Statistics for 25% or Less Insourced – Insourced Cost Variables

		Categories	Multidiscipl inary	Staff Nos diff.
N	Valid	24	24	23
	Missing	0	0	1
Mean		7.2083	4.46	-11.0000
Std. Deviation		2.24537	.588	52.19457
Variance		5.042	.346	2724.273

## Frequencies for Outsourced Cost Variables

### Notes

FREQUENCIES VARIABLES = Q7, Q4, Q7a, Q2b, Q9a, Q9d, Q9b, Q8b, Q8c, Q7b, Q9c from Questionnaire

### Statistics for All Combined data – Outsourced Cost Variables

	Monopoly	Co-operative	Skilled Staff	Outsource Nos	Control	Flexibility	Staffing conditions	Decrease in Competencies	Hollowed out	Management Time	Quality
N Valid	74	71	75	148	148	148	148	75	75	146	148
Missing	74	77	73	0	0	0	0	73	73	2	0
Mean	3.00	3.83	2.96	1.22	1.74	4.03	2.91	2.80	2.61	2.28	3.51
Std. Deviation	1.123	.941	1.019	1.786	1.013	.808	1.081	1.065	.943	1.190	.829
Variance	1.260	.885	1.039	3.191	1.025	.652	1.169	1.135	.889	1.417	.687

### Statistics for 75% or More Insourced – Outsourced Cost Variables

	Monopoly	Co-operative	Skilled Staff	Outsource Nos	Control	Flexibility	Staffing conditions	Decrease in Competencies	Hollowed out	Management Time	Quality
N Valid	33	32	34	107	107	107	107	34	34	105	107
Missing	74	75	73	0	0	0	0	73	73	2	0
Mean	3.06	3.66	3.06	.65	1.54	4.19	2.98	2.88	2.65	2.02	3.68
Std. Deviation	1.088	1.096	.919	1.395	.850	.702	1.064	.977	.917	1.135	.760
Variance	1.184	1.201	.845	1.945	.722	.493	1.132	.955	.841	1.288	.577

### Statistics for 50% Insourced – Outsourced Cost Variables

	Monopoly	Co-operative	Skilled Staff	Outsource Nos	Control	Flexibility	Staffing conditions	Decrease in Competencies	Hollowed out	Management Time	Quality
N Valid	17	16	17	17	17	17	17	17	17	17	17
Missing	0	1	0	0	0	0	0	0	0	0	0
Mean	2.88	3.94	2.76	2.47	2.35	3.41	3.00	2.71	2.47	2.88	2.94
Std. Deviation	.993	.680	.903	1.663	1.115	.939	1.173	1.105	.874	1.054	.899
Variance	.985	.463	.816	2.765	1.243	.882	1.375	1.221	.765	1.110	.809

### Statistics for 25% or Less Insourced – Outsourced Cost Variables

	Monopoly	Co-operative	Skilled Staff	Outsource Nos	Control	Flexibility	Staffing conditions	Decrease in Competencies	Hollowed out	Management Time	Quality
N Valid	24	23	24	24	24	24	24	24	24	24	24
Missing	0	1	0	0	0	0	0	0	0	0	0
Mean	3.00	4.00	2.96	2.83	2.17	3.75	2.54	2.75	2.67	3.00	3.17
Std. Deviation	1.285	.853	1.233	2.036	1.308	.897	1.062	1.189	1.049	1.103	.816
Variance	1.652	.727	1.520	4.145	1.710	.804	1.129	1.413	1.101	1.217	.667

## T-test Statistics

### Conversion of Questionnaire Data for T-testing

$$a = ((b/c) \times 100) - 100$$

where:

a = percentage difference

b = lowest mean comparative scores from questionnaire

c = highest mean comparative score from questionnaire

### T-test 100% Insourced      Group Statistics

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Prior procurement	100% insourced	81	.37	1.167	.130
	75% insourced	26	.88	1.243	.244
Current length	100% insourced	67	23.2537	26.45214	3.23164
	75% insourced	26	6.4808	4.20114	.82391
Staff nos at start	100% insourced	65	8.7577	20.29538	2.51733
	75% insourced	25	19.0400	28.56204	5.71241
Staff nos now	100% insourced	78	7.3846	10.26813	1.16264
	75% insourced	26	17.7308	26.60009	5.21671
Current length	100% insourced	67	23.2537	26.45214	3.23164
	50% insourced	17	7.5529	8.77341	2.12786
Staff nos now	100% insourced	78	7.3846	10.26813	1.16264
	50% insourced	16	12.4375	12.81259	3.20315
Prior procurement	100% insourced	81	.37	1.167	.130
	75% outsourced	20	1.25	.851	.190
Current length	100% insourced	67	23.2537	26.45214	3.23164
	75% outsourced	20	7.9850	3.19280	.71393
Prior procurement	100% insourced	81	.37	1.167	.130
	100% outsourced	4	2.25	1.500	.750

### T-test 75% Insourced

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Prior procurement	75% insourced	26	.88	1.243	.244
	100% outsourced	4	2.25	1.500	.750

### T-test 50% In/outsourced

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Prior procurement	50% in/outsourced	17	.65	.606	.147
	75% outsourced	20	1.25	.851	.190
Prior procurement	50% in/outsourced	17	.65	.606	.147
	100% outsourced	4	2.25	1.500	.750

### T-test 75% Outsourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Prior procurement	75% outsourced	20	1.25	.851	.190
	100% outsourced	4	2.25	1.500	.750

### T-test 100% Insourced      Group Statistics

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Bounded rationality	100% insourced	80	1.54	.871	.097
	75% insourced	26	2.35	1.164	.228
SLAs	100% insourced	77	3.43	.979	.112
	75% insourced	26	2.96	1.038	.204
Economies of scale	100% insourced	8	2.63	1.408	.498
	75% insourced	26	3.50	1.068	.209
Flexibility	100% insourced	81	4.30	.660	.073
	75% insourced	26	3.85	.732	.143
Specialisation	100% insourced	8	2.75	1.488	.526
	75% insourced	26	3.62	.804	.158
Bounded rationality	100% insourced	80	1.54	.871	.097
	50% insourced	17	2.71	1.359	.329
SLAs	100% insourced	77	3.43	.979	.112
	50% insourced	17	2.94	1.197	.290
Transfer leverages	100% insourced	8	2.75	1.282	.453
	50% insourced	16	3.69	.704	.176
Flexibility	100% insourced	81	4.30	.660	.073
	50% insourced	17	3.41	.939	.228
Specialisation	100% insourced	8	2.75	1.488	.526
Bounded rationality	100% insourced	80	1.54	.871	.097
	75% outsourced	20	2.45	1.234	.276
SLAs	100% insourced	77	3.43	.979	.112
	75% outsourced	20	2.35	1.268	.284
Flexibility	100% insourced	81	4.30	.660	.073
	75% outsourced	20	3.65	.933	.209
Specialisation	100% insourced	8	2.75	1.488	.526
	75% outsourced	20	3.85	.988	.221
Bounded rationality	100% insourced	80	1.54	.871	.097
	100% outsourced	4	3.50	1.732	.866
Strategic	100% insourced	81	3.79	1.081	.120
	100% outsourced	4	4.50	.577	.289
Economies of scale	100% insourced	8	2.63	1.408	.498
	100% outsourced	4	4.25	.500	.250



### T-test 75% Insourced

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Transfer leverages	75% insourced	24	3.00	1.216	.248
	50% insourced	16	3.69	.704	.176
SLAs	75% insourced	26	2.96	1.038	.204
	75% outsourced	20	2.35	1.268	.284
Strategic	75% insourced	26	3.73	.919	.180
	100% outsourced	4	4.50	.577	.289
Economies of scale	75% insourced	26	3.50	1.068	.209
	100% outsourced	4	4.25	.500	.250

### T-test 50% Insourced

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Strategic	50% insourced	17	3.65	1.169	.284
	100% outsourced	4	4.50	.577	.289

### T-test 100% Insourced

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Size of organisation	100% insourced	80	3.94	1.023	.114
	75% insourced	26	4.42	.945	.185
Management time	100% insourced	79	1.85	1.051	.118
	75% insourced	26	2.54	1.240	.243
Size of organisation	100% insourced	80	3.94	1.023	.114
	50% insourced	16	4.63	.619	.155
Flexibility	100% insourced	81	4.30	.660	.073
	50% insourced	17	3.41	.939	.228
Size of organisation	100% insourced	80	3.94	1.023	.114
	75% outsourced	19	4.58	.692	.159
Management time	100% insourced	79	1.85	1.051	.118
	75% outsourced	20	3.00	1.170	.262
Flexibility	100% insourced	81	4.30	.660	.073
	75% outsourced	20	3.65	.933	.209
Control	100% insourced	81	1.48	.823	.091
	75% outsourced	20	2.30	1.342	.300
Opportunism	100% insourced	80	2.78	1.169	.131
	75% outsourced	20	3.25	1.070	.239
Strategic	100% insourced	81	3.79	1.081	.120
	100% outsourced	4	4.50	.577	.289
Asset ownership	100% insourced	80	4.53	.968	.108
	100% outsourced	4	5.00	.000	.000
Management time	100% insourced	79	1.85	1.051	.118
	100% outsourced	4	3.00	.816	.408

### T-test 75% Insourced

	Current Procurement	N	Mean	Std. Deviation	Std. Error Mean
Strategic	75% insourced	26	3.73	.919	.180
	100% outsourced	4	4.50	.577	.289
Asset ownership	75% insourced	26	4.54	.706	.138
	100% outsourced	4	5.00	.000	.000

### T-test 75% Outsourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Asset ownership	75% outsourced	19	4.68	.478	.110
	100% outsourced	4	5.00	.000	.000

### T-test 100% Insourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Outsource nos	100% insourced	81	.00	.000	.000
	75% insourced	26	2.69	1.594	.313
Flexibility	100% insourced	81	4.30	.660	.073
	75% insourced	26	3.85	.732	.143
Management time	100% insourced	79	1.85	1.051	.118
	75% insourced	26	2.54	1.240	.243
Outsource nos	100% insourced	81	.00	.000	.000
	50% insourced	17	2.47	1.663	.403
Control	100% insourced	81	1.48	.823	.091
	50% insourced	17	2.35	1.115	.270
Flexibility	100% insourced	81	4.30	.660	.073
	50% insourced	17	3.41	.939	.228
Management time	100% insourced	79	1.85	1.051	.118
	50% insourced	17	2.88	1.054	.256
Quality	100% insourced	81	3.75	.734	.082
	50% insourced	17	2.94	.899	.218
Outsource nos	100% insourced	81	.00	.000	.000
	75% outsourced	20	3.00	2.052	.459
Control	100% insourced	81	1.48	.823	.091
	75% outsourced	20	2.30	1.342	.300
Flexibility	100% insourced	81	4.30	.660	.073
	75% outsourced	20	3.65	.933	.209
Staffing conditions	100% insourced	81	3.02	1.049	.117
	75% outsourced	20	2.45	1.099	.246
Management time	100% insourced	79	1.85	1.051	.118
	75% outsourced	20	3.00	1.170	.262
Quality	100% insourced	81	3.75	.734	.082
	75% outsourced	20	3.15	.813	.182

### T-test 100% Insourced continued...

Co-operative?	100% insourced	7	3.43	1.134	.429
	100% outsourced	4	4.75	.500	.250
Skilled staff	100% insourced	8	3.38	.916	.324
	100% outsourced	4	2.50	.577	.289
Management time	100% insourced	79	1.85	1.051	.118
	100% outsourced	4	3.00	.816	.408

### T-test 75% Insourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Control	75% insourced	26	1.73	.919	.180
	50% insourced	17	2.35	1.115	.270
Co-operative?	75% insourced	25	3.72	1.100	.220
	100% outsourced	4	4.75	.500	.250

### T-test 50% Insourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Co-operative?	50% insourced	16	3.94	.680	.170
	100% outsourced	4	4.75	.500	.250
Flexibility	50% insourced	17	3.41	.939	.228
	100% outsourced	4	4.25	.500	.250

### T-test 75% Outsourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Co-operative?	75% outsourced	19	3.84	.834	.191
	100% outsourced	4	4.75	.500	.250

### T-test 100% Insourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Staff nos diff.	100% insourced	78	-.6699	11.08735	1.25540
	75% outsourced	19	-13.3158	57.42053	13.17317

### T-test 75% Insourced

	Current procurement	N	Mean	Std. Deviation	Std. Error Mean
Categories	75% insourced	26	8.3462	1.57334	.30856
	50% insourced	17	7.2353	2.10741	.51112
Categories	75% insourced	26	8.3462	1.57334	.30856
	100% outsourced	4	6.2500	3.30404	1.65202

## **Questionnaire Survey Results**

### **Determination of Value and Cost from Questionnaire Data**

$$(a/b) \times 100 = c$$

where:

a = average score from questionnaire (from 1 to 5)

b = maximum possible score (5)

c = average percentage score achieved.

### **Determination of Value and Cost over Time from Questionnaire data**

$$a = b \times 100/c,$$

where:

a = value and/or cost result expressed as a percentage

b = score of actual dependent variable (that is, cost or value variable) given from respondents via questionnaire

c = maximum possible score of dependent variable (that is, cost or value variable) achievable via questionnaire ranking.

% Outsourced	Duration (Years)	In-house Costs independent Variables	In-house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
0%	2.5	10.00			0.00	0.00	100.00	21.00	-9.00	192.86	4.00	5.00	90.00
0%	4.3	15.00	1.33	160.00	0.00	5.00	117.86	23.00	-12.00	182.61	3.00	5.00	120.00
0%	4.3	15.00			0.00	1.00	103.57	23.00	-10.00	152.17	6.00	4.00	48.00
0%	5.0	8.00	1.00	225.00	0.00	0.00	100.00	25.00	-11.00	110.00	4.00	5.00	90.00
0%	5.0	11.00	0.00	0.00	0.00	-3.00	89.29	26.00	-7.00	53.85	2.00	4.00	144.00
0%	5.0	14.00	0.00	0.00	0.00	-3.00	89.29	22.00	-7.00	127.27	3.00	4.00	96.00
0%	5.0	16.00	8.00	900.00	0.00	-1.00	92.86	18.00	-8.00	266.67	5.00	4.00	57.60
0%	5.0	9.00	0.14	28.57	0.00	1.00	103.57	23.00	-11.00	167.39	-1.00	4.00	320.00
0%	5.0	6.00	0.00	0.00	0.00	1.00	103.57	20.00	-11.00	275.00	4.00	4.00	72.00
0%	7.0	15.00	4.00	480.00	0.00	2.00	107.14	22.00	-9.00	163.64	-2.00	5.00	220.00
0%	8.0	14.00	0.00	0.00	0.00	0.00	100.00	24.00	-10.00	125.00	2.00	5.00	180.00
0%	8.7	15.00			0.00	3.00	110.71	22.00	-11.00	200.00	8.00	4.00	36.00
0%	9.0	14.00	0.50	64.29	0.00	-2.00	92.86	22.00	-9.00	163.64	-3.00	4.00	128.00
0%	10.0	15.00			0.00	-1.00	96.43	23.00	-9.00	136.96	2.00	5.00	180.00
0%	10.0	10.00	0.25	45.00	0.00	1.00	103.57	23.00	-12.00	182.61	3.00	5.00	120.00
0%	10.0	12.00	0.00	0.00	0.00	-1.00	96.43	20.00	-7.00	175.00	0.00	4.00	116.00
0%	10.0	13.00	0.12	16.29	0.00	3.00	110.71	22.00	-8.00	145.45	-1.00	4.00	320.00
0%	10.0	13.00			0.00	2.00	107.14	24.00	-10.00	125.00	0.00	4.00	116.00
0%	10.0	13.00	0.00	0.00	0.00	0.00	100.00	20.00	-10.00	250.00	1.00	4.00	288.00
0%	10.0	13.00	-0.50	-30.77	0.00	-1.00	96.43	20.00	-10.00	250.00	1.00	4.00	288.00
0%	10.0	14.00	0.25	32.14	0.00	2.00	107.14	14.00	-12.00	685.71	3.00	4.00	96.00
0%	10.0	11.00	0.00	0.00	0.00	2.00	107.14	19.00	-12.00	347.37	1.00	4.00	288.00
0%	10.0	12.00			0.00	3.00	110.71	24.00	-13.00	162.50	-3.00	4.00	128.00
0%	10.0	8.00	0.00	0.00	0.00	3.00	110.71	22.00	-13.00	236.36	3.00	4.00	96.00
0%	10.0	12.00	2.33	350.00	0.00	-2.00	92.86	21.00	-9.00	192.86	2.00	3.00	108.00
0%	14.0	14.00	3.00	385.71	0.00	3.00	110.71	18.00	-10.00	333.33	5.00	4.00	57.60
0%	15.0	15.00	0.00	0.00	0.00	-1.00	96.43	20.00	-8.00	200.00	1.00	5.00	360.00
0%	15.0	15.00	0.00	0.00	0.00	-1.00	96.43	22.00	-9.00	163.64	0.00	4.00	116.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
0%	17.0	12.00			0.00	-1.00	96.43	22.00	-9.00	163.64	1.00	5.00	360.00
0%	18.0	14.00	0.00	0.00	0.00	1.00	103.57	22.00	-7.00	127.27	-3.00	5.00	160.00
0%	18.0	12.00	0.00	0.00	0.00	-2.00	92.86	27.00	-10.00	55.56	-2.00	5.00	220.00
0%	20.0	15.00	0.00	0.00	0.00	2.00	107.14	22.00	-9.00	163.64	0.00	5.00	120.00
0%	20.0	15.00	3.00	360.00	0.00	0.00	100.00	25.00	-9.00	90.00	0.00	5.00	120.00
0%	20.0	14.00	0.33	42.86	0.00	0.00	100.00	22.00	-9.00	163.64	-1.00	5.00	400.00
0%	20.0	13.00	0.00	0.00	0.00	0.00	100.00	27.00	-10.00	55.56	3.00	5.00	120.00
0%	20.0	12.00			0.00	3.00	110.71	19.00	-13.00	376.32	0.00	5.00	120.00
0%	20.0	9.00	11.00	2200.00	0.00	-1.00	96.43	22.00	-8.00	145.45	0.00	4.00	116.00
0%	20.0	15.00	1.00	120.00	0.00	-3.00	89.29	19.00	-8.00	231.58	5.00	4.00	57.60
0%	20.0	15.00	0.38	45.00	0.00	2.00	107.14	20.00	-11.00	275.00	3.00	4.00	96.00
0%	20.0	14.00	0.00	0.00	0.00	2.00	107.14	22.00	-11.00	200.00	5.00	4.00	57.60
0%	20.0	14.00	0.00	0.00	0.00	-1.00	96.43	24.00	-11.00	137.50	-1.00	4.00	320.00
0%	20.0	12.00	-0.40	-20.00	0.00	-2.00	92.86	21.00	-8.00	171.43	3.00	3.00	72.00
0%	25.0	11.00			0.00	5.00	117.86	18.00	-12.00	400.00	3.00	4.00	96.00
0%	25.0	7.00	-0.50	28.57	0.00	4.00	114.29	23.00	-13.00	197.83	0.00	4.00	116.00
0%	30.0	15.00	1.00	120.00	0.00	-2.00	92.86	21.00	-11.00	235.71	7.00	5.00	51.43
0%	30.0	14.00			0.00	0.00	100.00	22.00	-12.00	218.18	-1.00	5.00	400.00
0%	31.0	12.00	2.33	350.00	0.00	3.00	110.71	21.00	-9.00	192.86	4.00	4.00	72.00
0%	33.0	15.00	0.00	0.00	0.00	-1.00	96.43	23.00	-9.00	136.96	2.00	4.00	144.00
0%	40.0	14.00			0.00	1.00	103.57	22.00	-11.00	200.00	4.00	5.00	90.00
0%	46.0	12.00	-0.71	-35.42	0.00	0.00	100.00	23.00	-10.00	152.17	0.00	2.00	108.00
0%	50.0	14.00	0.00	0.00	0.00	2.00	107.14	22.00	-9.00	163.64	0.00	5.00	120.00
0%	50.0	12.00	3.00	450.00	0.00	1.00	103.57	21.00	-11.00	235.71	0.00	5.00	120.00
0%	50.0	13.00			0.00	0.00	100.00	5.00	-13.00	3250.00	6.00	5.00	60.00
0%	50.0	13.00	0.00	0.00	0.00	2.00	107.14	20.00	-11.00	275.00	2.00	4.00	144.00
0%	75.0	8.00	0.00	0.00	0.00	5.00	117.86	25.00	-14.00	140.00	3.00	4.00	96.00
0%	80.0	14.00	-0.40	-28.57	0.00	3.00	110.71	24.00	-15.00	187.50	1.00	5.00	360.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
0%	100.0	8.00			0.00	-1.00	96.43	24.00	-7.00	87.50	-2.00	4.00	176.00
0%	100.0	13.00	0.00	0.00	0.00	2.00	107.14	19.00	-9.00	260.53	-1.00	4.00	320.00
0%	150.0	13.00			0.00	-2.00	92.86	21.00	-10.00	214.29	0.00	5.00	120.00
0%		9.00	0.00	0.00	0.00	2.00	107.14	25.00	-9.00	90.00	-3.00	5.00	160.00
0%		10.00	0.00	0.00	0.00	1.00	103.57	17.00	-10.00	382.35	7.00	5.00	51.43
0%		13.00	1.00	138.46	0.00	1.00	103.57	22.00	-11.00	200.00	5.00	5.00	72.00
0%		16.00	-0.25	-21.88	0.00	1.00	103.57	25.00	-11.00	110.00	1.00	5.00	360.00
0%		8.00			0.00	2.00	107.14	17.00	-13.00	497.06	7.00	5.00	51.43
0%		12.00	0.00	0.00	0.00	2.00	107.14	18.00	-10.00	333.33	3.00	4.00	96.00
0%		11.00	0.33	54.55	0.00	-1.00	96.43	20.00	-10.00	250.00	-1.00	4.00	320.00
0%		6.00	0.00	0.00	0.00	0.00	100.00	21.00	-11.00	235.71	2.00	4.00	144.00
0%		14.00	-0.14	-10.20	0.00	0.00	100.00	22.00	-11.00	200.00	3.00	4.00	96.00
0%		11.00	0.00	0.00	0.00	5.00	117.86	18.00	-12.00	400.00	6.00	4.00	48.00
0%		6.00			0.00	1.00	103.57	19.00	-12.00	347.37	0.00	4.00	116.00
0%		10.00			0.00	3.00	110.71	18.00	-12.00	400.00	1.00	3.00	216.00
0%		13.00			0.00	5.00	117.86	22.00	-12.00	218.18	0.00	2.00	108.00
0%	30.0	11.00	0.00	0.00	0.00	0.00	100.00	30.00	-10.00	0.00	0.00	5.00	120.00
0%	5.0	15.00	0.60	72.00	4.00	3.00	24.11	18.00	-11.00	366.67	6.00	18.00	216.00
0%	5.0	11.00	-0.33	-12.12	1.00	9.00	289.29	22.00	-8.00	145.45	4.00	8.00	144.00
0%		10.00			4.00	8.00	64.29	20.00	-13.00	325.00	3.00	18.00	432.00
0%	9.2	9.00	-0.33	0.00	6.00	5.00	26.79	22.00	-11.00	200.00	-3.00	15.00	480.00
0%	12.0	14.00	-0.35	-25.00	6.00	7.00	37.50	22.00	-11.00	200.00	2.00	10.00	360.00
0%	2.0	8.00	1.00	225.00	2.00	7.00	112.50	17.00	-14.00	535.29	2.00	14.00	504.00
0%	4.0	13.00	0.00	0.00	-1.00	1.00	39.29	22.00	-9.00	163.64	7.00	24.00	246.86
0%	15.0	15.00	2.00	240.00	7.00	8.00	36.73	23.00	-9.00	136.96	2.00	12.00	432.00
25%	3.0	12.00	0.20	30.00	6.00	17.00	91.07	19.00	-13.00	376.32	0.00	15.00	160.00
25%	3.0	13.00	0.00	0.00	0.00	4.00	114.29	19.00	-7.00	202.63	3.00	12.00	288.00
25%	4.0	12.00	0.20	30.00	1.00	10.00	321.43	24.00	-8.00	100.00	9.00	20.00	160.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
25%	5.0	13.00	0.00	0.00	2.00	10.00	160.71	18.00	-10.00	333.33	3.00	19.00	456.00
25%	5.0	13.00	1.00	138.46	5.00	9.00	57.86	22.00	-10.00	181.82	-2.00	17.00	748.00
25%	6.0	16.00	1.00	112.50	-2.00	10.00	232.14	22.00	-12.00	218.18	2.00	13.00	468.00
25%	7.0	15.00	0.19	23.08	1.00	17.00	546.43	22.00	-11.00	200.00	5.00	17.00	244.80
25%	8.0	14.00	0.00	0.00	1.00	5.00	160.71	25.00	-10.00	100.00	2.00	18.00	648.00
25%	10.0	13.00	0.00	0.00	-1.00	6.00	235.71	19.00	-11.00	318.42	9.00	23.00	184.00
25%	10.0	10.00	-0.25	-5.00	7.00	12.00	55.10	23.00	-13.00	197.83	4.00	21.00	378.00
25%	10.0	12.00	0.00	0.00	1.00	13.00	417.86	20.00	-12.00	300.00	-2.00	18.00	792.00
25%	10.0	12.00	0.00	0.00	1.00	13.00	417.86	23.00	-14.00	213.04	3.00	17.00	408.00
25%	18.0	15.00	-0.11	-8.89	3.00	11.00	117.86	20.00	-12.00	300.00	1.00	18.00	1296.00
25%	1.0	13.00	0.00	0.00	4.00	5.00	40.18	18.00	-9.00	300.00	10.00	19.00	136.80
25%	1.0	13.00	-0.19	-11.54	4.00	6.00	48.21	20.00	-11.00	275.00	-1.00	13.00	1040.00
25%	1.0	15.00	-0.82	-65.45	3.00	11.00	117.86	22.00	-13.00	236.36	4.00	11.00	198.00
25%	4.0	9.00			1.00	15.00	482.14	21.00	-15.00	321.43	8.00	17.00	153.00
25%	4.0	10.00	2.33	420.00	5.00	10.00	64.29	22.00	-13.00	236.36	-1.00	10.00	800.00
25%	5.0	13.00	-0.11	-6.48	6.00	12.00	64.29	25.00	-13.00	130.00	2.00	19.00	684.00
25%	5.0	14.00	-0.43	-30.61	2.00	7.00	112.50	20.00	-10.00	250.00	1.00	15.00	1080.00
25%	8.0	14.00	-0.42	-30.30	-1.00	8.00	314.29	21.00	-11.00	235.71	3.00	20.00	480.00
25%	8.0	12.00	0.33	50.00	-2.00	5.00	116.07	19.00	-10.00	289.47	2.00	17.00	612.00
25%	6.0	12.00	0.00	0.00	4.00	11.00	88.39	23.00	-12.00	182.61	4.00	20.00	360.00
25%	10.0	15.00	0.70	84.00	1.00	15.00	482.14	23.00	-8.00	121.74	2.00	17.00	612.00
25%	1.5	14.00	0.00	0.00	4.00	13.00	104.46	25.00	-14.00	140.00	6.00	15.00	180.00
25%	15.0	12.00	-0.43	-21.43	3.00	7.00	75.00	24.00	-9.00	112.50	1.00	11.00	792.00
50%	3.0	12.00	0.00	0.00	4.00	8.00	64.29	21.00	-12.00	257.14	1.00	19.00	1368.00
50%	3.0	14.00	1.67	214.29	2.00	12.00	192.86	20.00	-11.00	275.00	2.00	15.00	540.00
50%	7.0	13.00	0.00	0.00	0.00	15.00	153.57	23.00	-14.00	213.04	-1.00	18.00	1440.00
50%	8.0	6.00	0.00	0.00	1.00	13.00	417.86	23.00	-12.00	182.61	6.00	17.00	204.00
50%	9.4	14.00	-0.39	-27.60	2.00	9.00	144.64	26.00	-14.00	107.69	2.00	17.00	612.00



% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
50%	10.0	11.00	-0.37	-13.40	-1.00	7.00	275.00	27.00	-10.00	55.56	1.00	16.00	1152.00
50%	40.0	14.00	0.00	0.00	3.00	13.00	139.29	23.00	-14.00	213.04	3.00	18.00	432.00
50%	2.0	11.00	0.00	0.00	5.00	13.00	83.57	10.00	-13.00	1300.00	0.00	15.00	160.00
50%	2.0	15.00	0.50	60.00	0.00	7.00	125.00	22.00	-12.00	218.18	5.00	14.00	201.60
50%	2.0	14.00	0.00	0.00	3.00	7.00	75.00	20.00	-14.00	350.00	8.00	12.00	108.00
50%	5.0	10.00			0.00	11.00	139.29	20.00	-9.00	225.00	2.00	16.00	576.00
50%	5.0	11.00	0.00	0.00	0.00	11.00	139.29	21.00	-12.00	257.14	4.00	16.00	288.00
50%	7.0	10.00			1.00	8.00	257.14	20.00	-9.00	225.00	2.00	19.00	684.00
50%	7.0	14.00	1.33	171.43	2.00	8.00	128.57	23.00	-12.00	182.61	7.00	17.00	174.86
50%	7.0	8.00	0.00	0.00	6.00	9.00	48.21	19.00	-14.00	405.26	9.00	17.00	136.00
50%	8.0	12.00	0.20	30.00	2.00	13.00	208.93	22.00	-12.00	218.18	5.00	19.00	273.60
50%	3.0	8.00	0.00	0.00	3.00	12.00	128.57	20.00	-12.00	300.00	4.00	20.00	360.00
75%	10.0	15.00	-0.67	-53.33	6.00	19.00	101.79	24.00	-16.00	200.00	4.00	19.00	342.00
75%	10.0	11.00	0.20	32.73	6.00	15.00	80.36	19.00	-15.00	434.21	1.00	5.00	360.00
75%	12.0	10.00	0.00	0.00	0.00	18.00	164.29	17.00	-14.00	535.29	7.00	19.00	195.43
75%	15.0	12.00	0.67	100.00	2.00	14.00	225.00	21.00	-12.00	257.14	4.00	17.00	306.00
75%	3.0	14.00	0.00	0.00	0.00	3.00	110.71	20.00	-11.00	275.00	6.00	21.00	252.00
75%	5.0	8.00	0.00	0.00	2.00	8.00	128.57	23.00	-13.00	197.83	7.00	19.00	195.43
75%	6.5	11.00	0.00	0.00	2.00	15.00	241.07	22.00	-13.00	236.36	3.00	16.00	384.00
75%	7.0	12.00	0.00	0.00	0.00	8.00	128.57	17.00	-11.00	420.59	3.00	14.00	336.00
75%	9.0	14.00			3.00	14.00	150.00	26.00	-13.00	100.00	-1.00	22.00	1760.00
75%	9.0	10.00	-0.71	-14.29	1.00	17.00	546.43	25.00	-13.00	130.00	-2.00	21.00	924.00
75%	9.0	11.00	0.00	0.00	1.00	6.00	192.86	21.00	-10.00	214.29	0.00	15.00	160.00
75%	10.0	15.00	-0.25	-20.00	-2.00	7.00	162.50	14.00	-10.00	571.43	6.00	25.00	300.00
75%	3.0	15.00	0.00	0.00	0.00	10.00	135.71	25.00	-8.00	80.00	0.00	19.00	176.00
75%	4.2	13.00	3.00	415.38	5.00	13.00	83.57	26.00	-14.00	107.69	2.00	16.00	576.00
75%	5.0	11.00	-0.50	-18.18	6.00	14.00	75.00	25.00	-12.00	120.00	0.00	20.00	180.00
75%	6.0	13.00	-0.21	-13.19	0.00	7.00	125.00	22.00	-10.00	181.82	2.00	20.00	720.00

% Outsourced	Duration (Years)	In-house Costs independent t Variables	In house costs dependent % change	In-house cost	Outsource costs independent t Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent t Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent t Variable	Outsource Value Dependent variable	Outsource Value
75%	6.0	12.00	0.50	75.00	5.00	8.00	51.43	10.00	-12.00	1200.00	0.00	18.00	172.00
75%	8.0	12.00	0.50	75.00	3.00	8.00	85.71	19.00	-10.00	289.47	0.00	23.00	192.00
75%	12.0	8.00	-0.70	17.50	3.00	18.00	192.86	23.00	-14.00	213.04	2.00	14.00	504.00
75%	10.0	11.00			5.00	13.00	83.57	22.00	-13.00	236.36	0.00	18.00	172.00
100%	3.0	8.00	0.00	0.00	1.00	7.00	225.00	21.00	-11.00	235.71	1.00	19.00	1368.00
100%	7.0	10.00	0.00	0.00	-2.00	5.00	116.07	26.00	-11.00	84.62	1.00	19.00	1368.00
100%	10.0	15.00	0.00	0.00	2.00	17.00	273.21	26.00	-13.00	100.00	4.00	20.00	360.00
100%	0.5	9.00	0.00	0.00	2.00	11.00	176.79	22.00	-12.00	218.18	0.00	20.00	180.00

## **Questionnaire Survey Results – Ratio-adjusted**

### **Determination of Ratio-adjusted Value and Cost from Questionnaire Data**

$$(a/b) \times c = d$$

where

a = averaged combined percentage dependent variable score

b = averaged combined percentage independent variable score

c = set maximum independent variable score

d = achievable theoretical maximum score based on ratio,

### **Determination of Ratio-adjusted Value and Cost over Time from Questionnaire Data**

$$a = (100/b) \times ((c/d) \times e)$$

where:

a = value or cost percentage score

b = maximum possible dependent variable score

c = actual dependent variable score

d = actual independent variable score

e = maximum possible independent variable score

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
0%	2.5	10.00			0.00	0.00	100.00	21.00	-9.00	192.86	4.00	5.00	90.00
0%	4.3	15.00	1.33	160.00	0.00	5.00	117.86	23.00	-12.00	182.61	3.00	5.00	120.00
0%	4.3	15.00			0.00	1.00	103.57	23.00	-10.00	152.17	6.00	4.00	48.00
0%	5.0	8.00	1.00	225.00	0.00	0.00	100.00	25.00	-11.00	110.00	4.00	5.00	90.00
0%	5.0	11.00	0.00	0.00	0.00	-3.00	89.29	26.00	-7.00	53.85	2.00	4.00	144.00
0%	5.0	14.00	0.00	0.00	0.00	-3.00	89.29	22.00	-7.00	127.27	3.00	4.00	96.00
0%	5.0	16.00	8.00	900.00	0.00	-1.00	92.86	18.00	-8.00	266.67	5.00	4.00	57.60
0%	5.0	9.00	0.14	28.57	0.00	1.00	103.57	23.00	-11.00	167.39	-1.00	4.00	320.00
0%	5.0	6.00	0.00	0.00	0.00	1.00	103.57	20.00	-11.00	275.00	4.00	4.00	72.00
0%	7.0	15.00	4.00	480.00	0.00	2.00	107.14	22.00	-9.00	163.64	-2.00	5.00	220.00
0%	8.0	14.00	0.00	0.00	0.00	0.00	100.00	24.00	-10.00	125.00	2.00	5.00	180.00
0%	8.7	15.00			0.00	3.00	110.71	22.00	-11.00	200.00	8.00	4.00	36.00
0%	9.0	14.00	0.50	64.29	0.00	-2.00	92.86	22.00	-9.00	163.64	-3.00	4.00	128.00
0%	10.0	15.00			0.00	-1.00	96.43	23.00	-9.00	136.96	2.00	5.00	180.00
0%	10.0	10.00	0.25	45.00	0.00	1.00	103.57	23.00	-12.00	182.61	3.00	5.00	120.00
0%	10.0	12.00	0.00	0.00	0.00	-1.00	96.43	20.00	-7.00	175.00	0.00	4.00	116.00
0%	10.0	13.00	0.12	16.29	0.00	3.00	110.71	22.00	-8.00	145.45	-1.00	4.00	320.00
0%	10.0	13.00			0.00	2.00	107.14	24.00	-10.00	125.00	0.00	4.00	116.00
0%	10.0	13.00	0.00	0.00	0.00	0.00	100.00	20.00	-10.00	250.00	1.00	4.00	288.00
0%	10.0	13.00	-0.50	-30.77	0.00	-1.00	96.43	20.00	-10.00	250.00	1.00	4.00	288.00
0%	10.0	14.00	0.25	32.14	0.00	2.00	107.14	14.00	-12.00	685.71	3.00	4.00	96.00
0%	10.0	11.00	0.00	0.00	0.00	2.00	107.14	19.00	-12.00	347.37	1.00	4.00	288.00
0%	10.0	12.00			0.00	3.00	110.71	24.00	-13.00	162.50	-3.00	4.00	128.00
0%	10.0	8.00	0.00	0.00	0.00	3.00	110.71	22.00	-13.00	236.36	3.00	4.00	96.00
0%	10.0	12.00	2.33	350.00	0.00	-2.00	92.86	21.00	-9.00	192.86	2.00	3.00	108.00
0%	14.0	14.00	3.00	385.71	0.00	3.00	110.71	18.00	-10.00	333.33	5.00	4.00	57.60
0%	15.0	15.00	0.00	0.00	0.00	-1.00	96.43	20.00	-8.00	200.00	1.00	5.00	360.00
0%	15.0	15.00	0.00	0.00	0.00	-1.00	96.43	22.00	-9.00	163.64	0.00	4.00	116.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
0%	17.0	12.00			0.00	-1.00	96.43	22.00	-9.00	163.64	1.00	5.00	360.00
0%	18.0	14.00	0.00	0.00	0.00	1.00	103.57	22.00	-7.00	127.27	-3.00	5.00	160.00
0%	18.0	12.00	0.00	0.00	0.00	-2.00	92.86	27.00	-10.00	55.56	-2.00	5.00	220.00
0%	20.0	15.00	0.00	0.00	0.00	2.00	107.14	22.00	-9.00	163.64	0.00	5.00	120.00
0%	20.0	15.00	3.00	360.00	0.00	0.00	100.00	25.00	-9.00	90.00	0.00	5.00	120.00
0%	20.0	14.00	0.33	42.86	0.00	0.00	100.00	22.00	-9.00	163.64	-1.00	5.00	400.00
0%	20.0	13.00	0.00	0.00	0.00	0.00	100.00	27.00	-10.00	55.56	3.00	5.00	120.00
0%	20.0	12.00			0.00	3.00	110.71	19.00	-13.00	376.32	0.00	5.00	120.00
0%	20.0	9.00	11.00	2200.00	0.00	-1.00	96.43	22.00	-8.00	145.45	0.00	4.00	116.00
0%	20.0	15.00	1.00	120.00	0.00	-3.00	89.29	19.00	-8.00	231.58	5.00	4.00	57.60
0%	20.0	15.00	0.38	45.00	0.00	2.00	107.14	20.00	-11.00	275.00	3.00	4.00	96.00
0%	20.0	14.00	0.00	0.00	0.00	2.00	107.14	22.00	-11.00	200.00	5.00	4.00	57.60
0%	20.0	14.00	0.00	0.00	0.00	-1.00	96.43	24.00	-11.00	137.50	-1.00	4.00	320.00
0%	20.0	12.00	-0.40	-20.00	0.00	-2.00	92.86	21.00	-8.00	171.43	3.00	3.00	72.00
0%	25.0	11.00			0.00	5.00	117.86	18.00	-12.00	400.00	3.00	4.00	96.00
0%	25.0	7.00	-0.50	28.57	0.00	4.00	114.29	23.00	-13.00	197.83	0.00	4.00	116.00
0%	30.0	15.00	1.00	120.00	0.00	-2.00	92.86	21.00	-11.00	235.71	7.00	5.00	51.43
0%	30.0	14.00			0.00	0.00	100.00	22.00	-12.00	218.18	-1.00	5.00	400.00
0%	31.0	12.00	2.33	350.00	0.00	3.00	110.71	21.00	-9.00	192.86	4.00	4.00	72.00
0%	33.0	15.00	0.00	0.00	0.00	-1.00	96.43	23.00	-9.00	136.96	2.00	4.00	144.00
0%	40.0	14.00			0.00	1.00	103.57	22.00	-11.00	200.00	4.00	5.00	90.00
0%	46.0	12.00	-0.71	-35.42	0.00	0.00	100.00	23.00	-10.00	152.17	0.00	2.00	108.00
0%	50.0	14.00	0.00	0.00	0.00	2.00	107.14	22.00	-9.00	163.64	0.00	5.00	120.00
0%	50.0	12.00	3.00	450.00	0.00	1.00	103.57	21.00	-11.00	235.71	0.00	5.00	120.00
0%	50.0	13.00			0.00	0.00	100.00	5.00	-13.00	3250.00	6.00	5.00	60.00
0%	50.0	13.00	0.00	0.00	0.00	2.00	107.14	20.00	-11.00	275.00	2.00	4.00	144.00
0%	75.0	8.00	0.00	0.00	0.00	5.00	117.86	25.00	-14.00	140.00	3.00	4.00	96.00
0%	80.0	14.00	-0.40	-28.57	0.00	3.00	110.71	24.00	-15.00	187.50	1.00	5.00	360.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
0%	100.0	8.00			0.00	-1.00	96.43	24.00	-7.00	87.50	-2.00	4.00	176.00
0%	100.0	13.00	0.00	0.00	0.00	2.00	107.14	19.00	-9.00	260.53	-1.00	4.00	320.00
0%	150.0	13.00			0.00	-2.00	92.86	21.00	-10.00	214.29	0.00	5.00	120.00
0%		9.00	0.00	0.00	0.00	2.00	107.14	25.00	-9.00	90.00	-3.00	5.00	160.00
0%		10.00	0.00	0.00	0.00	1.00	103.57	17.00	-10.00	382.35	7.00	5.00	51.43
0%		13.00	1.00	138.46	0.00	1.00	103.57	22.00	-11.00	200.00	5.00	5.00	72.00
0%		16.00	-0.25	-21.88	0.00	1.00	103.57	25.00	-11.00	110.00	1.00	5.00	360.00
0%		8.00			0.00	2.00	107.14	17.00	-13.00	497.06	7.00	5.00	51.43
0%		12.00	0.00	0.00	0.00	2.00	107.14	18.00	-10.00	333.33	3.00	4.00	96.00
0%		11.00	0.33	54.55	0.00	-1.00	96.43	20.00	-10.00	250.00	-1.00	4.00	320.00
0%		6.00	0.00	0.00	0.00	0.00	100.00	21.00	-11.00	235.71	2.00	4.00	144.00
0%		14.00	-0.14	-10.20	0.00	0.00	100.00	22.00	-11.00	200.00	3.00	4.00	96.00
0%		11.00	0.00	0.00	0.00	5.00	117.86	18.00	-12.00	400.00	6.00	4.00	48.00
0%		6.00			0.00	1.00	103.57	19.00	-12.00	347.37	0.00	4.00	116.00
0%		10.00			0.00	3.00	110.71	18.00	-12.00	400.00	1.00	3.00	216.00
0%		13.00			0.00	5.00	117.86	22.00	-12.00	218.18	0.00	2.00	108.00
0%	30.0	11.00	0.00	0.00	0.00	0.00	100.00	30.00	-10.00	0.00	0.00	5.00	120.00
0%	5.0	15.00	0.60	72.00	4.00	3.00	24.11	18.00	-11.00	366.67	6.00	18.00	216.00
0%	5.0	11.00	-0.33	-12.12	1.00	9.00	289.29	22.00	-8.00	145.45	4.00	8.00	144.00
0%		10.00			4.00	8.00	64.29	20.00	-13.00	325.00	3.00	18.00	432.00
0%	9.2	9.00	-0.33	0.00	6.00	5.00	26.79	22.00	-11.00	200.00	-3.00	15.00	480.00
0%	12.0	14.00	-0.35	-25.00	6.00	7.00	37.50	22.00	-11.00	200.00	2.00	10.00	360.00
0%	2.0	8.00	1.00	225.00	2.00	7.00	112.50	17.00	-14.00	535.29	2.00	14.00	504.00
0%	4.0	13.00	0.00	0.00	-1.00	1.00	39.29	22.00	-9.00	163.64	7.00	24.00	246.86
0%	15.0	15.00	2.00	240.00	7.00	8.00	36.73	23.00	-9.00	136.96	2.00	12.00	432.00
25%	3.0	12.00	0.20	30.00	6.00	17.00	91.07	19.00	-13.00	376.32	0.00	15.00	160.00
25%	3.0	13.00	0.00	0.00	0.00	4.00	114.29	19.00	-7.00	202.63	3.00	12.00	288.00
25%	4.0	12.00	0.20	30.00	1.00	10.00	321.43	24.00	-8.00	100.00	9.00	20.00	160.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
25%	5.0	13.00	0.00	0.00	2.00	10.00	160.71	18.00	-10.00	333.33	3.00	19.00	456.00
25%	5.0	13.00	1.00	138.46	5.00	9.00	57.86	22.00	-10.00	181.82	-2.00	17.00	748.00
25%	6.0	16.00	1.00	112.50	-2.00	10.00	232.14	22.00	-12.00	218.18	2.00	13.00	468.00
25%	7.0	15.00	0.19	23.08	1.00	17.00	546.43	22.00	-11.00	200.00	5.00	17.00	244.80
25%	8.0	14.00	0.00	0.00	1.00	5.00	160.71	25.00	-10.00	100.00	2.00	18.00	648.00
25%	10.0	13.00	0.00	0.00	-1.00	6.00	235.71	19.00	-11.00	318.42	9.00	23.00	184.00
25%	10.0	10.00	-0.25	-5.00	7.00	12.00	55.10	23.00	-13.00	197.83	4.00	21.00	378.00
25%	10.0	12.00	0.00	0.00	1.00	13.00	417.86	20.00	-12.00	300.00	-2.00	18.00	792.00
25%	10.0	12.00	0.00	0.00	1.00	13.00	417.86	23.00	-14.00	213.04	3.00	17.00	408.00
25%	18.0	15.00	-0.11	-8.89	3.00	11.00	117.86	20.00	-12.00	300.00	1.00	18.00	1296.00
25%	1.0	13.00	0.00	0.00	4.00	5.00	40.18	18.00	-9.00	300.00	10.00	19.00	136.80
25%	1.0	13.00	-0.19	-11.54	4.00	6.00	48.21	20.00	-11.00	275.00	-1.00	13.00	1040.00
25%	1.0	15.00	-0.82	-65.45	3.00	11.00	117.86	22.00	-13.00	236.36	4.00	11.00	198.00
25%	4.0	9.00			1.00	15.00	482.14	21.00	-15.00	321.43	8.00	17.00	153.00
25%	4.0	10.00	2.33	420.00	5.00	10.00	64.29	22.00	-13.00	236.36	-1.00	10.00	800.00
25%	5.0	13.00	-0.11	-6.48	6.00	12.00	64.29	25.00	-13.00	130.00	2.00	19.00	684.00
25%	5.0	14.00	-0.43	-30.61	2.00	7.00	112.50	20.00	-10.00	250.00	1.00	15.00	1080.00
25%	8.0	14.00	-0.42	-30.30	-1.00	8.00	314.29	21.00	-11.00	235.71	3.00	20.00	480.00
25%	8.0	12.00	0.33	50.00	-2.00	5.00	116.07	19.00	-10.00	289.47	2.00	17.00	612.00
25%	6.0	12.00	0.00	0.00	4.00	11.00	88.39	23.00	-12.00	182.61	4.00	20.00	360.00
25%	10.0	15.00	0.70	84.00	1.00	15.00	482.14	23.00	-8.00	121.74	2.00	17.00	612.00
25%	1.5	14.00	0.00	0.00	4.00	13.00	104.46	25.00	-14.00	140.00	6.00	15.00	180.00
25%	15.0	12.00	-0.43	-21.43	3.00	7.00	75.00	24.00	-9.00	112.50	1.00	11.00	792.00
50%	3.0	12.00	0.00	0.00	4.00	8.00	64.29	21.00	-12.00	257.14	1.00	19.00	1368.00
50%	3.0	14.00	1.67	214.29	2.00	12.00	192.86	20.00	-11.00	275.00	2.00	15.00	540.00
50%	7.0	13.00	0.00	0.00	0.00	15.00	153.57	23.00	-14.00	213.04	-1.00	18.00	1440.00
50%	8.0	6.00	0.00	0.00	1.00	13.00	417.86	23.00	-12.00	182.61	6.00	17.00	204.00
50%	9.4	14.00	-0.39	-27.60	2.00	9.00	144.64	26.00	-14.00	107.69	2.00	17.00	612.00

% Outsourced	Duration (Years)	In-house Costs independent Variables	In house costs dependent % change	In-house cost	Outsource costs independent Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent Variable	Outsource Value Dependent variable	Outsource Value
50%	10.0	11.00	-0.37	-13.40	-1.00	7.00	275.00	27.00	-10.00	55.56	1.00	16.00	1152.00
50%	40.0	14.00	0.00	0.00	3.00	13.00	139.29	23.00	-14.00	213.04	3.00	18.00	432.00
50%	2.0	11.00	0.00	0.00	5.00	13.00	83.57	10.00	-13.00	1300.00	0.00	15.00	160.00
50%	2.0	15.00	0.50	60.00	0.00	7.00	125.00	22.00	-12.00	218.18	5.00	14.00	201.60
50%	2.0	14.00	0.00	0.00	3.00	7.00	75.00	20.00	-14.00	350.00	8.00	12.00	108.00
50%	5.0	10.00			0.00	11.00	139.29	20.00	-9.00	225.00	2.00	16.00	576.00
50%	5.0	11.00	0.00	0.00	0.00	11.00	139.29	21.00	-12.00	257.14	4.00	16.00	288.00
50%	7.0	10.00			1.00	8.00	257.14	20.00	-9.00	225.00	2.00	19.00	684.00
50%	7.0	14.00	1.33	171.43	2.00	8.00	128.57	23.00	-12.00	182.61	7.00	17.00	174.86
50%	7.0	8.00	0.00	0.00	6.00	9.00	48.21	19.00	-14.00	405.26	9.00	17.00	136.00
50%	8.0	12.00	0.20	30.00	2.00	13.00	208.93	22.00	-12.00	218.18	5.00	19.00	273.60
50%	3.0	8.00	0.00	0.00	3.00	12.00	128.57	20.00	-12.00	300.00	4.00	20.00	360.00
75%	10.0	15.00	-0.67	-53.33	6.00	19.00	101.79	24.00	-16.00	200.00	4.00	19.00	342.00
75%	10.0	11.00	0.20	32.73	6.00	15.00	80.36	19.00	-15.00	434.21	1.00	5.00	360.00
75%	12.0	10.00	0.00	0.00	0.00	18.00	164.29	17.00	-14.00	535.29	7.00	19.00	195.43
75%	15.0	12.00	0.67	100.00	2.00	14.00	225.00	21.00	-12.00	257.14	4.00	17.00	306.00
75%	3.0	14.00	0.00	0.00	0.00	3.00	110.71	20.00	-11.00	275.00	6.00	21.00	252.00
75%	5.0	8.00	0.00	0.00	2.00	8.00	128.57	23.00	-13.00	197.83	7.00	19.00	195.43
75%	6.5	11.00	0.00	0.00	2.00	15.00	241.07	22.00	-13.00	236.36	3.00	16.00	384.00
75%	7.0	12.00	0.00	0.00	0.00	8.00	128.57	17.00	-11.00	420.59	3.00	14.00	336.00
75%	9.0	14.00			3.00	14.00	150.00	26.00	-13.00	100.00	-1.00	22.00	1760.00
75%	9.0	10.00	-0.71	-14.29	1.00	17.00	546.43	25.00	-13.00	130.00	-2.00	21.00	924.00
75%	9.0	11.00	0.00	0.00	1.00	6.00	192.86	21.00	-10.00	214.29	0.00	15.00	160.00
75%	10.0	15.00	-0.25	-20.00	-2.00	7.00	162.50	14.00	-10.00	571.43	6.00	25.00	300.00
75%	3.0	15.00	0.00	0.00	0.00	10.00	135.71	25.00	-8.00	80.00	0.00	19.00	176.00
75%	4.2	13.00	3.00	415.38	5.00	13.00	83.57	26.00	-14.00	107.69	2.00	16.00	576.00
75%	5.0	11.00	-0.50	-18.18	6.00	14.00	75.00	25.00	-12.00	120.00	0.00	20.00	180.00
75%	6.0	13.00	-0.21	-13.19	0.00	7.00	125.00	22.00	-10.00	181.82	2.00	20.00	720.00



% Outsourced	Duration (Years)	In-house Costs independent t Variables	In house costs dependent % change	In-house cost	Outsource costs independent t Variables	Outsource costs Dependent variables	Outsource cost	In-house Value Independent t Variable	In-house Value Dependent variable	In-house value	Outsource Value Independent t Variable	Outsource Value Dependent variable	Outsource Value
75%	6.0	12.00	0.50	75.00	5.00	8.00	51.43	10.00	-12.00	1200.00	0.00	18.00	172.00
75%	8.0	12.00	0.50	75.00	3.00	8.00	85.71	19.00	-10.00	289.47	0.00	23.00	192.00
75%	12.0	8.00	-0.70	17.50	3.00	18.00	192.86	23.00	-14.00	213.04	2.00	14.00	504.00
75%	10.0	11.00			5.00	13.00	83.57	22.00	-13.00	236.36	0.00	18.00	172.00
100%	3.0	8.00	0.00	0.00	1.00	7.00	225.00	21.00	-11.00	235.71	1.00	19.00	1368.00
100%	7.0	10.00	0.00	0.00	-2.00	5.00	116.07	26.00	-11.00	84.62	1.00	19.00	1368.00
100%	10.0	15.00	0.00	0.00	2.00	17.00	273.21	26.00	-13.00	100.00	4.00	20.00	360.00
100%	0.5	9.00	0.00	0.00	2.00	11.00	176.79	22.00	-12.00	218.18	0.00	20.00	180.00

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% Outsourced									Lower	Upper
Prior Procurement	Equal variances assumed	.689	.414	-1.996	28	.056	-1.365	.684	-2.766	.036
	Equal variances not assumed			-1.731	3.663	.165	-1.365	.789	-3.637	.906

**Table 38 – Independent Samples Test for 75% Insourced – Previous FM Procurement**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 75% outsourced									Lower	Upper
Prior Procurement	Equal variances assumed	1.795	.189	-2.440	35	.020	-.603	.247	-1.105	-.101
	Equal variances not assumed			-2.508	34.053	.017	-.603	.240	-1.092	-.114
Compared against 100% outsourced										

Prior procurement	Equal variances assumed	20.345	.000	-3.538	19	.002	-1.603	.453	-2.551	-.655
	Equal variances not assumed			-2.097	3.234	.120	-1.603	.764	-3.939	.733

**Table 39 – Independent Samples Test for 50% In/Outsourced – Previous FM Procurement**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% outsourced									Lower	Upper
Prior procurement	Equal variances assumed	4.985	.036	-1.891	22	.072	-1.000	.529	-2.096	.096
	Equal variances not assumed			-1.292	3.396	.277	-1.000	.774	-3.308	1.308

**Table 40 – Independent Samples Test for 75% Outsourced – Previous FM Procurement**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% outsourced									Lower	Upper
Strategic	Equal variances assumed	1.54 7	.229	-1.399	19	.178	-.853	.610	-2.129	.424
	Equal variances not assumed			-2.108	9.865	.062	-.853	.405	-1.756	.050

**Table 41 – 50% Out/Insourced T-test Comparison – Outsource Value**

		SLAs	Globalised	Transfer Leverage s	Increase in Compete ncies	Flexibility	Specialis ation
Bounded rationality	Correlation coefficient		-.219(*)			-.448(**)	
	Sig. (1-tailed)		.026			.000	
	Sig. (2-tailed)		.053			.000	
	N		79			80	
Competitive	Correlation coefficient	.195(*)	.320(**)				
	Sig. (1-tailed)	.046	.002				
	Sig. (2-tailed)	.091	.004				
	N	76	79				
Globalised	Correlation coefficient					.203(*)	
	Sig. (1-tailed)					.036	
	Sig. (2-tailed)					.071	
	N					80	
Economies of scale	Correlation coefficient			.706(*)	.672(*)		.833(**)
	Sig. (1-tailed)			.025	.034		.005
	Sig. (2-tailed)			.050	.068		.010
	N			8	8		8
Increase in competencies	Correlation coefficient			.935(**)			.911(**)
	Sig. (1-tailed)			.000			.001
	Sig. (2-tailed)			.001			.002
	N			8			8
Specialisation	Correlation coefficient			.944(**)	.911(**)		
	Sig. (1-tailed)			.000	.001		
	Sig. (2-tailed)			.000	.002		
	N			8	8		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 42 – 100% Insourced Correlations for “Outsource Value”**

		Bounded Rationality	Strategic	Decentralisation	Globalised	Economies of scale	Increase in Competencies	Specialisation
Competitive	Correlation coefficient			.435(*)	.366(*)		.334(*)	
	Sig. (1-tailed)			.013	.033		.048	
	Sig. (2-tailed)			.026				
	N			26	26		26	
Transfer leverages	Correlation coefficient	.593(**)			.548(**)	.622(**)		.522(**)
	Sig. (1-tailed)	.001			.003	.001		.004
	Sig. (2-tailed)	.002			.006	.001		.009
	N	24			24	24		24
Economies of scale	Correlation coefficient	.503(**)					.494(**)	.515(**)
	Sig. (1-tailed)	.004					.005	.004
	Sig. (2-tailed)	.009					.010	.007
	N	26					26	26
Flexibility	Correlation coefficient		.415(*)			-.402(*)		
	Sig. (1-tailed)		.018			.021		
	Sig. (2-tailed)		.035			.042		
	N		26			26		
Specialisation	Correlation coefficient	.432(*)				.515(**)	.375(*)	
	Sig. (1-tailed)	.014				.004	.030	
	Sig. (2-tailed)	.028				.007		
	N	26				26	26	

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 43 – 75% Insourced Correlations for “Outsource Value”**

		De/Centralisation	Globalised	Transfer Leverages	Economies of scale	Flexibility	Specialisation
Bounded rationality	Correlation coefficient						.545(*)
	Sig. (1-tailed)						.012
	Sig. (2-tailed)						.024
	N						17
Competitive	Correlation coefficient				-.671(**)	.443(*)	
	Sig. (1-tailed)				.002	.037	
	Sig. (2-tailed)				.003	.075	
	N				17	17	
Economies of scale	Correlation coefficient	-.461(*)	-.771(**)				
	Sig. (1-tailed)	.031	.000				
	Sig. (2-tailed)	.063	.000				
	N	17	17				
Increase in competencies	Correlation coefficient		-.672(**)	-.635(**)	.562(**)		
	Sig. (1-tailed)		.002	.004	.009		
	Sig. (2-tailed)		.003	.008	.019		
	N		17	16	17		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 44 – 50% Out/Insourced Correlations for “Outsource Value”**

		SLAs	Transfer Leverages	Increase in Competencies	Flexibility
Strategic	Correlation coefficient		-1.000(**)		
	Sig. (1-tailed)		.000		
	Sig. (2-tailed)		.000		
	N		4		
Globalised	Correlation coefficient	-1.000(**)		.943(*)	
	Sig. (1-tailed)	.000		.029	
	Sig. (2-tailed)	.000		.057	
	N	4		4	
Economies of scale	Correlation coefficient				1.000(**)
	Sig. (1-tailed)				.
	Sig. (2-tailed)				.
	N				4
Increase in competencies	Correlation coefficient	-.943(*)			
	Sig. (1-tailed)	.029			
	N	4			

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 45 – 100% Outsourced Correlations for “Outsource Value”**

		Bounded Rationality	SLAs	De/Centralisation	Competitive	Globalised	Economies of scale	Increase in Competencies	Flexibility	Specialisation
Strategic	Correlation coefficient				.162(*)				.171(*)	
	Sig. (1-tailed)				.049				.039	
	N				106				107	
Competitive	Correlation coefficient		.172(*)	.207(*)		.325(**)		.308(*)	.179(*)	
	Sig. (1-tailed)		.042	.017		.000		.038	.033	
	Sig. (2-tailed)		.084	.034		.001		.076	.067	
	N		102	106		105		34	106	
Transfer leverages	Correlation coefficient	.545(**)				.398(*)	.650(**)	.497(**)		.659(**)
	Sig. (1-tailed)	.001				.012	.000	.002		.000
	Sig. (2-tailed)	.001				.024	.000	.004		.000
	N	32				32	32	32		32
Economies of scale	Correlation coefficient	.542(**)						.564(**)	-.362(*)	.658(**)
	Sig. (1-tailed)	.000						.000	.018	.000
	Sig. (2-tailed)	.001						.001	.035	.000
	N	34						34	34	34
Increase in competencies	Correlation coefficient	.370(*)			.308(*)		.564(**)			.581(**)
	Sig. (1-tailed)	.016			.038		.000			.000
	Sig. (2-tailed)	.031			.076		.001			.000
	N	34			34		34			34
Flexibility	Correlation coefficient	-.436(**)			.179(*)	.198(*)	-.362(*)			
	Sig. (1-tailed)	.000			.033	.021	.018			
	Sig. (2-tailed)	.000			.067	.042	.035			
	N	106			106	106	34			

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 46 – 75% or More Insourced Correlations for “Outsource Value”**

		Bounded Rationality	De/Centralisation	Competitive	Globalised	Transfer Leverages	Economies of scale	Increase in Competencies
SLAs	Correlation coefficient		-.438(*)	-.473(**)	-.405(*)		.404(*)	
	Sig. (1-tailed)		.016	.010	.025		.025	
	Sig. (2-tailed)		.032	.020	.050		.050	
	N		24	24	24		24	
Competitive	Correlation coefficient				.411(*)	-.377(*)		
	Sig. (1-tailed)				.023	.035		
	Sig. (2-tailed)				.046	.069		
	N				24	24		
Increase in competencies	Correlation coefficient	.366(*)					.388(*)	
	Sig. (1-tailed)	.039					.030	
	Sig. (2-tailed)	.078					.061	
	N	24					24	
Flexibility	Correlation coefficient							
	Sig. (1-tailed)							
	N							
Specialisation	Correlation coefficient						.740(**)	.640(**)
	Sig. (1-tailed)						.000	.000
	Sig. (2-tailed)						.000	.001
	N						24	24

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 47 – 75% or More Outsourced Correlations for “Outsource Value”**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% Outsourced									Lower	Upper
Strategic	Equal variances assumed	.472	.498	-1.612	28	.118	-.769	.477	-1.747	.209
	Equal variances not assumed			-2.260	5.691	.067	-.769	.340	-1.613	.075
Asset ownership	Equal variances assumed	7.692	.010	-1.288	28	.208	-.462	.358	-1.195	.272
	Equal variances not assumed			-3.333	25.000	.003	-.462	.138	-.747	-.176

**Table 48 – 75% Insourced T-test Comparison – Insource Value**



		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% Outsourced									Lower	Upper
Asset ownership	Equal variances assumed	23.255	.000	-1.298	21	.208	-.316	.243	-.822	.190
	Equal variances not assumed			-2.882	18.000	.010	-.316	.110	-.546	-.086

**Table 49 – 75% Outsourced T-test Comparison – Insource Value**

		De/Centralisation	Assets Unique Specific	Flexibility	Control	Opportunism
Size of organisation	Correlation coefficient	-.376(*)	.381(*)			
	Sig. (1-tailed)	.029	.027			
	Sig. (2-tailed)	.059	.055			
	N	26	26			
Strategic	Correlation coefficient			.415(*)	-.465(**)	
	Sig. (1-tailed)			.018	.008	
	Sig. (2-tailed)			.035	.017	
	N			26	26	
Asset ownership	Correlation coefficient	.505(**)				
	Sig. (1-tailed)	.004				
	Sig. (2-tailed)	.009				
	N	26				
Management time	Correlation coefficient			-.348(*)	.482(**)	
	Sig. (1-tailed)			.041	.006	
	Sig. (2-tailed)				.013	
	N			26	26	
Flexibility	Correlation coefficient				-.350(*)	-.334(*)
	Sig. (1-tailed)				.040	.048
	Sig. (2-tailed)					
	N				26	26
Control	Correlation coefficient			-.350(*)		.430(*)
	Sig. (1-tailed)			.040		.014
	Sig. (2-tailed)					.028
	N			26		26

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 50 – 75% Insourced Correlations for “Insource Value”**

		Size of Organisation	De/Centralisation	Strategic	Management Time	Flexibility
Assets unique specific	Correlation coefficient	-.499(*)			.525(*)	
	Sig. (1-tailed)	.025			.018	
	Sig. (2-tailed)	.049			.037	
	N	16			16	
Uncertainty	Correlation coefficient					-.547(*)
	Sig. (1-tailed)					.011
	Sig. (2-tailed)					.023
	N					17
Control	Correlation coefficient		.451(*)	-.562(**)		
	Sig. (1-tailed)		.035	.009		
	Sig. (2-tailed)		.069	.019		
	N		17	17		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 51 – 50% Out/Insourced Correlations for “Insource Value”**

		De/Centralisation	Strategic	Assets Unique Specific	Flexibility	Control	Opportunism
Size of organisation	Correlation coefficient	.402(*)		.506(*)			
	Sig. (1-tailed)	.044		.014			
	Sig. (2-tailed)	.088		.027			
	N	19		19			
Asset ownership	Correlation coefficient					-.392(*)	-.398(*)
	Sig. (1-tailed)					.049	.046
	N					19	19
Uncertainty	Correlation coefficient		.415(*)	.421(*)	-.458(*)	.475(*)	.423(*)
	Sig. (1-tailed)		.038	.041	.024	.020	.035
	Sig. (2-tailed)		.077	.082	.049	.040	.071
	N		19	18	19	19	19
Management time	Correlation coefficient				-.421(*)		
	Sig. (1-tailed)				.032		
	N				20		
Control	Correlation coefficient				-.487(*)		
	Sig. (1-tailed)				.015		
	Sig. (2-tailed)				.029		
	N				20		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 52 – 75% Outsourced Correlations for “Insource Value”**

		Size of Organisation	Opportunism
De/Centralisation	Correlation coefficient	-.943(*)	
	Sig. (1-tailed)	.029	
	N	4	
Management time	Correlation coefficient		-1.000(**)
	Sig. (1-tailed)		.000
	Sig. (2-tailed)		.000
	N		4

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 53 – 100% Outsourced Correlations for “Insource Value”**

		De/Centralisation	Strategic	Assets Unique Specific	Uncertainty	Management Time	Flexibility	Control
Size of Organisation	Correlation coefficient	-.233(**)	-.162(*)					
	Sig. (1-tailed)	.008	.048					
	Sig. (2-tailed)	.016						
	N	106	106					
De/Centralisation	Correlation coefficient			.182(*)				
	Sig. (1-tailed)			.031				
	Sig. (2-tailed)							
	N			106				
Strategic	Correlation coefficient						.171(*)	-.235(**)
	Sig. (1-tailed)						.039	.007
	Sig. (2-tailed)							.015
	N						107	107
Uncertainty	Correlation coefficient							.170(*)
	Sig. (1-tailed)							.040
	Sig. (2-tailed)							
	N							106
Flexibility	Correlation coefficient		.171(*)	.266(**)		-.261(**)		-.365(**)
	Sig. (1-tailed)		.039	.003		.004		.000
	Sig. (2-tailed)			.006		.007		.000
	N		107	106		105		107
Opportunism	Correlation coefficient		-.249(**)		.201(*)		-.164(*)	.299(**)
	Sig. (1-tailed)		.005		.020		.046	.001
	Sig. (2-tailed)		.010		.040			.002
	N		106		105		106	106

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 54 – 75% or More Insourced Correlations for “Insource Value”**

		Size of Organisation	Uncertainty	Management Time	Flexibility	Control	Opportunism
Asset ownership	Correlation coefficient					-.424(*)	-.403(*)
	Sig. (1-tailed)					.022	.028
	Sig. (2-tailed)					.044	.056
	N					23	23
Assets unique specific	Correlation coefficient	.369(*)	.440(*)				
	Sig. (1-tailed)	.042	.020				
	Sig. (2-tailed)	.084	.040				
	N	23	22				
Uncertainty	Correlation coefficient				-.381(*)	.508(**)	.453(*)
	Sig. (1-tailed)				.036	.007	.015
	Sig. (2-tailed)				.073	.013	.030
	N				23	23	23
Flexibility	Correlation coefficient		-.381(*)	-.348(*)		-.495(**)	
	Sig. (1-tailed)		.036	.048		.007	
	Sig. (2-tailed)		.073	.096		.014	
	N		23	24		24	

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 55 – 75% or More Outsourced Correlations for “Insource Value”**

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		
<b>Compared against 50% insourced</b>									Lower	Upper
Control	Equal variances assumed	1.851	.181	-1.995	41	.053	-.622	.312	-1.252	.008
	Equal variances not assumed			-1.915	29.635	.065	-.622	.325	-1.286	.042
<b>Compared against 100% outsourced</b>										
Co-operative?	Equal variances assumed	2.472	.128	-1.821	27	.080	-1.030	.566	-2.191	.131
	Equal variances not assumed			-3.093	8.787	.013	-1.030	.333	-1.786	-.274

**Table 56– 75% Insourced T-test Comparison – Outsourced Costs**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% outsourced									Lower	Upper
Co-operative?	Equal variances assumed	.140	.712	-2.224	18	.039	-.813	.365	-1.580	-.045
	Equal variances not assumed			-2.687	6.153	.035	-.813	.302	-1.548	-.077
	Equal variances assumed	2.061	.167	-1.705	19	.104	-.838	.492	-1.867	.191
	Equal variances not assumed			-2.478	8.901	.035	-.838	.338	-1.605	-.072
Flexibility										

**Table 57 – 50% Out/Insourced T-test Comparison – Outsourced Costs**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 100% outsourced									Lower	Upper
Co-operative?	Equal variances assumed	.085	.773	-2.076	21	.050	-.908	.437	-1.818	.002
	Equal variances not assumed			-2.884	7.138	.023	-.908	.315	-1.649	-.166

**Table 58 – 75% Outsourced T-test Comparison – Outsourced Costs**

		Co-operative?	Control	Flexibility	Staffing conditions	Decrease in Competencies	Management Time
Monopoly	Correlation coefficient	-.510(**)					.464(**)
	Sig. (1-tailed)	.005					.010
	Sig. (2-tailed)	.011					.019
	N	24					25
Skilled staff	Correlation coefficient	-.344(*)				.345(*)	
	Sig. (1-tailed)	.046				.042	
	Sig. (2-tailed)	.092				.084	
	N	25				26	
Control	Correlation coefficient			-.350(*)	-.438(*)		.482(**)
	Sig. (1-tailed)			.040	.013		.006
	Sig. (2-tailed)			.080	.025		.013
	N			26	26		26
Hollowed out	Correlation coefficient					.630(**)	
	Sig. (1-tailed)					.000	
	Sig. (2-tailed)					.001	
	N					26	
Management time	Correlation coefficient		.482(**)	-.348(*)			
	Sig. (1-tailed)		.006	.041			
	Sig. (2-tailed)		.013	.081			
	N		26	26			
Quality	Correlation coefficient		-.355(*)	.627(**)	.336(*)		
	Sig. (1-tailed)		.038	.000	.047		
	Sig. (2-tailed)		.075	.001	.093		
	N		26	26	26		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed)

**Table 59 – 75% Insourced Correlations for “Outsourced Costs”**

		Outsource No's	Staffing conditions	Decrease in Competencies	Hollowed out	Quality
Co-operative?	Correlation coefficient		-.642(**)			.437(*)
	Sig. (1-tailed)		.004			.045
	Sig. (2-tailed)		.007			.091
	N		16			16
Decrease in competencies	Correlation coefficient				.495(*)	
	Sig. (1-tailed)				.022	
	Sig. (2-tailed)				.043	
	N				17	
Hollowed out	Correlation coefficient	.430(*)		.495(*)		
	Sig. (1-tailed)	.042		.022		
	Sig. (2-tailed)	.085		.043		
	N	17		17		
Quality	Correlation coefficient		-.530(*)			
	Sig. (1-tailed)		.014			
	Sig. (2-tailed)		.029			
	N		17			

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 60 – 50% Out/Insourced Correlations for “Outsourced Costs”**

		Co-operative?	Skilled Staff	Control	Decrease in Competencies	Hollowed out	Management Time	Quality
Monopoly	Correlation coefficient		.459(*)		.474(*)	.523(**)		-.399(*)
	Sig. (1-tailed)		.021		.017	.009		.041
	Sig. (2-tailed)		.042		.035	.018		.081
	N		20		20	20		20
Skilled staff	Correlation coefficient	-.421(*)			.437(*)	.427(*)		
	Sig. (1-tailed)	.036			.027	.030		
	Sig. (2-tailed)	.073			.054	.060		
	N	19			20	20		
Flexibility	Correlation coefficient			-.487(*)	-.402(*)		-.421(*)	.448(*)
	Sig. (1-tailed)			.015	.039		.032	.024
	Sig. (2-tailed)			.029	.079		.065	.048
	N			20	20		20	20
Decrease in competencies	Correlation coefficient		.437(*)	.554(**)		.929(**)	.396(*)	
	Sig. (1-tailed)		.027	.006		.000	.042	
	Sig. (2-tailed)		.054	.011		.000	.084	
	N		20	20		20	20	
Hollowed out	Correlation coefficient		.427(*)	.540(**)	.929(**)		.457(*)	-.401(*)
	Sig. (1-tailed)		.030	.007	.000		.021	.040
	Sig. (2-tailed)		.060	.014	.000		.043	.079
	N		20	20	20		20	20

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 61 – 75% Outsourced Correlations for “Outsourced Costs”**



		Co-operative?	Outsource No's	Decrease in Competencies	Management Time	Quality
Skilled staff	Correlation coefficient					-.943(*)
	Sig. (1-tailed)					.029
	N					4
Control	Correlation coefficient		1.000(**)			
	Sig. (1-tailed)		.			
	Sig. (2-tailed)		.			
	N		4			
Flexibility	Correlation coefficient	-1.000(**)				
	Sig. (1-tailed)	.000				
	Sig. (2-tailed)	.000				
	N	4				
Hollowed out	Correlation coefficient			1.000(**)	-1.000(**)	
	Sig. (1-tailed)			.	.000	
	Sig. (2-tailed)			.	.000	
	N			4	4	
Management time	Correlation coefficient			-1.000(**)		
	Sig. (1-tailed)			.000		
	Sig. (2-tailed)			.000		
	N			4		

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed.)

**Table 62 – 100% Outsourced Correlations for “Outsourced Costs”**

		Co-operative?	Skilled Staff	Control	Flexibility	Decrease in Competencies	Management Time	Quality
Monopoly	Correlation coefficient	-.430(**)	.294(*)				.295(*)	
	Sig. (1-tailed)	.008	.048				.048	
	Sig. (2-tailed)	.016	.097				.095	
	N	31	33				33	
Co-operative?	Correlation coefficient		-.322(*)			-.433(**)		
	Sig. (1-tailed)		.036			.007		
	Sig. (2-tailed)		.072			.013		
	N		32			32		
Outsource Nos	Correlation coefficient				-.277(**)		.235(**)	-.169(*)
	Sig. (1-tailed)				.002		.008	.041
	Sig. (2-tailed)				.004		.016	.082
	N				107		105	107
Flexibility	Correlation coefficient			-.365(**)			-.261(**)	.451(**)
	Sig. (1-tailed)			.000			.004	.000
				.000			.007	
	N			107			105	107
Staffing conditions	Correlation coefficient			-.261(**)				.213(*)
	Sig. (1-tailed)			.003				.014
	Sig. (2-tailed)			.007				.028
	N			107				107
Hollowed out	Correlation coefficient					.708(**)		
	Sig. (1-tailed)					.000		
	Sig. (2-tailed)					.000		
	N					34		
Quality	Correlation coefficient			-.433(**)	.451(**)			
	Sig. (1-tailed)			.000	.000			
	Sig. (2-tailed)			.000	.000			
	N			107	107			

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 63 – 75% or More Insourced Correlations for “Outsourced Costs”**

		Monopoly	Co-operative?	Control	Decrease in Competencies	Hollowed out	Management Time
Skilled staff	Correlation coefficient	.439(*)	-.455(*)		.430(*)	.416(*)	
	Sig. (1-tailed)	.016	.015		.018	.022	
	Sig. (2-tailed)	.032	.029		.036	.043	
	N	24	23		24	24	
Flexibility	Correlation coefficient			-.495(**)			-.348(*)
	Sig. (1-tailed)			.007			.048
	Sig. (2-tailed)			.014			.096
	N			24			24
Decrease in competencies	Correlation coefficient	.527(**)		.541(**)		.945(**)	
	Sig. (1-tailed)	.004		.003		.000	
	Sig. (2-tailed)			.006			
	N	24		24		24	
Hollowed out	Correlation coefficient	.577(**)		.529(**)	.945(**)		
	Sig. (1-tailed)	.002		.004	.000		
	Sig. (2-tailed)	.003		.008	.000		
	N	24		24	24		
Quality	Correlation coefficient	-.379(*)			-.362(*)	-.402(*)	
	Sig. (1-tailed)	.034			.041	.026	
	Sig. (2-tailed)					.052	
	N	24			24	24	

\* Correlation is significant at the 0.05 level (2-tailed and/or 1-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed and/or 1-tailed).

**Table 64 – 75% or More Outsourced Correlations for “Outsourced Costs”**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Compared against 50% Insourced									Lower	Upper
Categories	Equal variances assumed	2.657	.111	1.978	41	.055	1.11086	.56165	-.02341	2.24513
	Equal variances not assumed			1.861	27.453	.074	1.11086	.59704	-.11321	2.33493
	Compared against 100% outsourced									
	Categories									
	Equal variances assumed	3.902	.058	2.123	28	.043	2.09615	.98739	.07357	4.11874
	Equal variances not assumed			1.247	3.212	.295	2.09615	1.68059	-3.05755	7.24986

**Table 65 – 75% Insourced T-test Comparison – Insourced Costs**

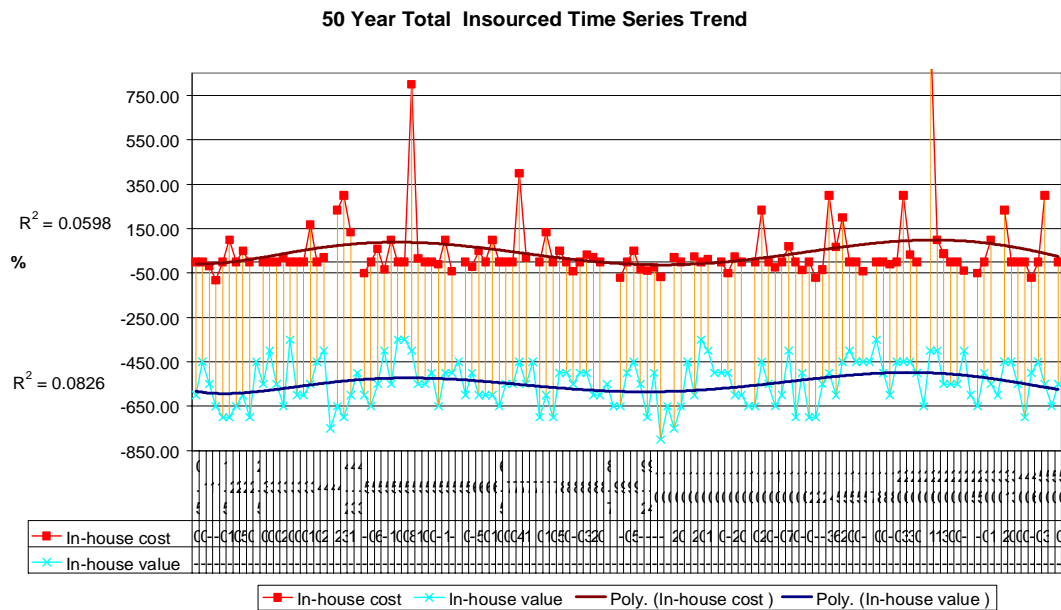
Multidisciplinary			
Spearman's rho	Categories	Correlation Coefficient	.179(*)
		Sig. (1-tailed)	.033
		N	107

\* Correlation is significant at the 0.05 level (2-tailed and or 1-tailed)

\*\* Correlation is significant at the 0.01 level (2-tailed and or 1-tailed)

**Table 66 – 75% or More Insourced Correlations Comparison – Insourced Costs**



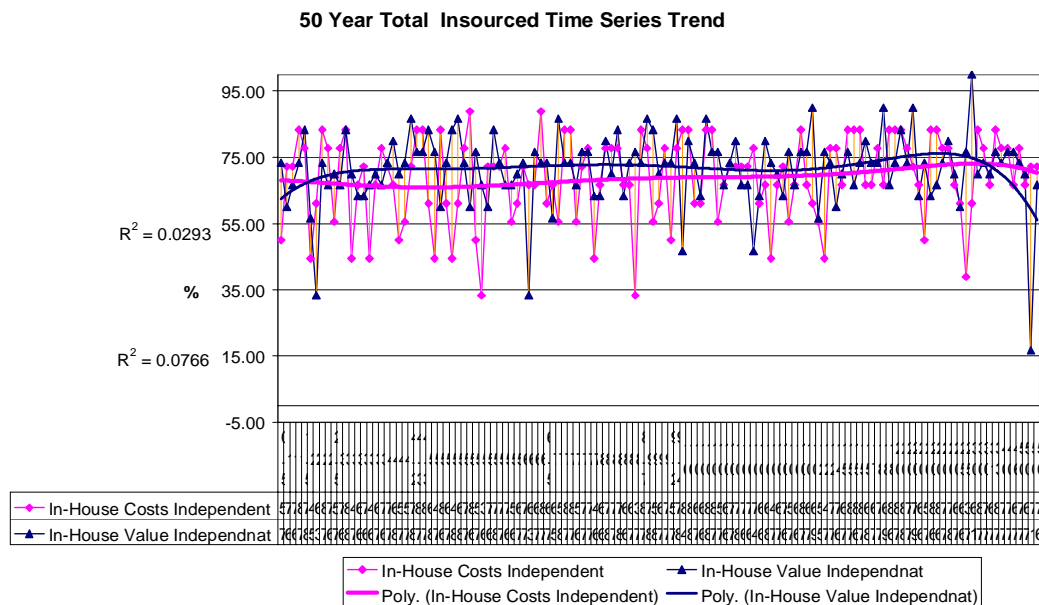


**Figure 31 – Fifty-year Insourced Time Trend – Total**

where for:

Costs,  $y = 6E-09x^6 - 3E-06x^5 + 0.0004x^4 - 0.0288x^3 + 0.7505x^2 - 2.9365x - 5.0213$ ,  $R^2 = 0.0598$

Value,  $y = 7E-09x^6 - 3E-06x^5 + 0.0004x^4 - 0.0301x^3 + 0.8691x^2 - 6.9089x - 576.56$ ,  $R^2 = 0.0826$ .

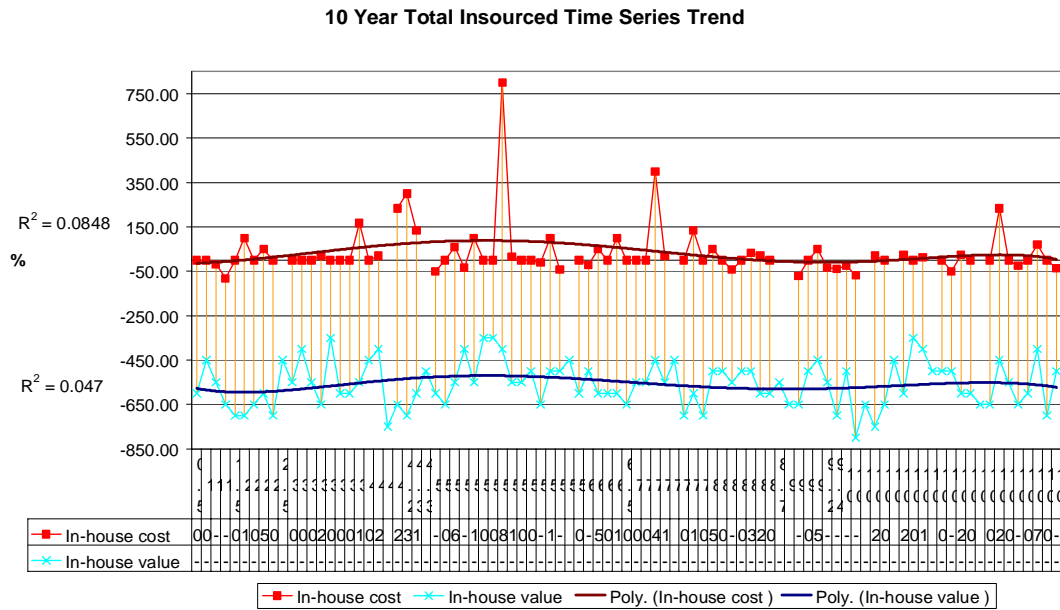


**Figure 32 – Fifty-year Insourced Time Trend – Total – Independent Variable**

where for:

Costs,  $y = -3E-10x^6 + 9E-08x^5 - 1E-05x^4 + 0.0007x^3 - 0.0127x^2 - 0.0302x + 68.095$ ,  $R^2 = 0.0293$

Value,  $y = -9E-10x^6 + 3E-07x^5 - 5E-05x^4 + 0.003x^3 - 0.1016x^2 + 1.6631x + 60.928$ ,  $R^2 = 0.0766$ .

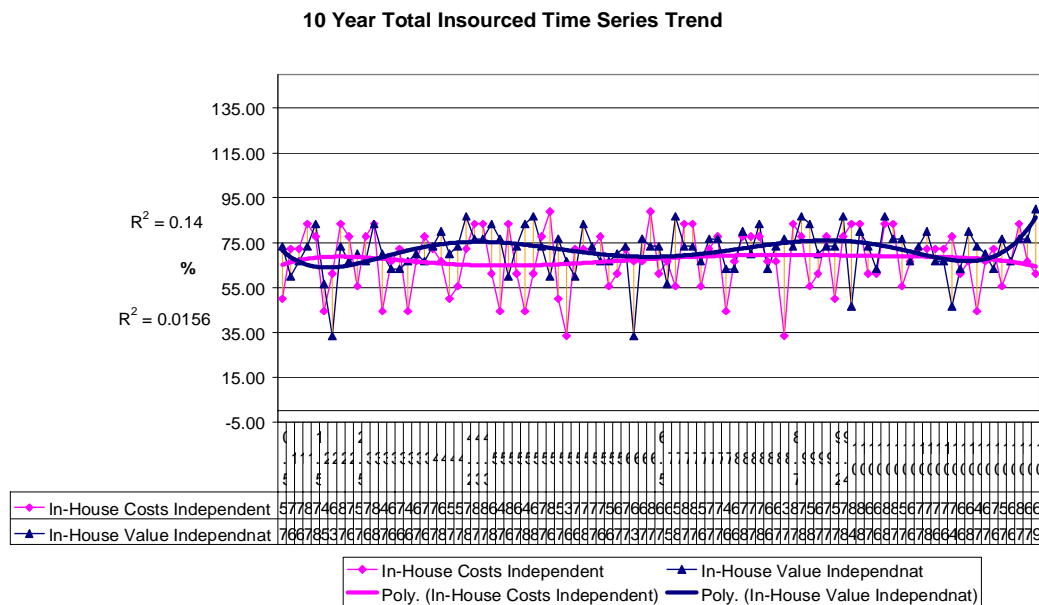


**Figure 33 – Ten-year Insourced Time Trend – Total**

where for:

Costs,  $y = -1E-08x^6 + 2E-06x^5 - 2E-05x^4 - 0.0089x^3 + 0.3233x^2 + 0.9199x - 14.231$ ,  $R^2 = 0.0848$

Value,  $y = 7E-09x^6 - 4E-06x^5 + 0.0006x^4 - 0.0401x^3 + 1.1558x^2 - 9.9614x - 568.87$ ,  $R^2 = 0.047$ .

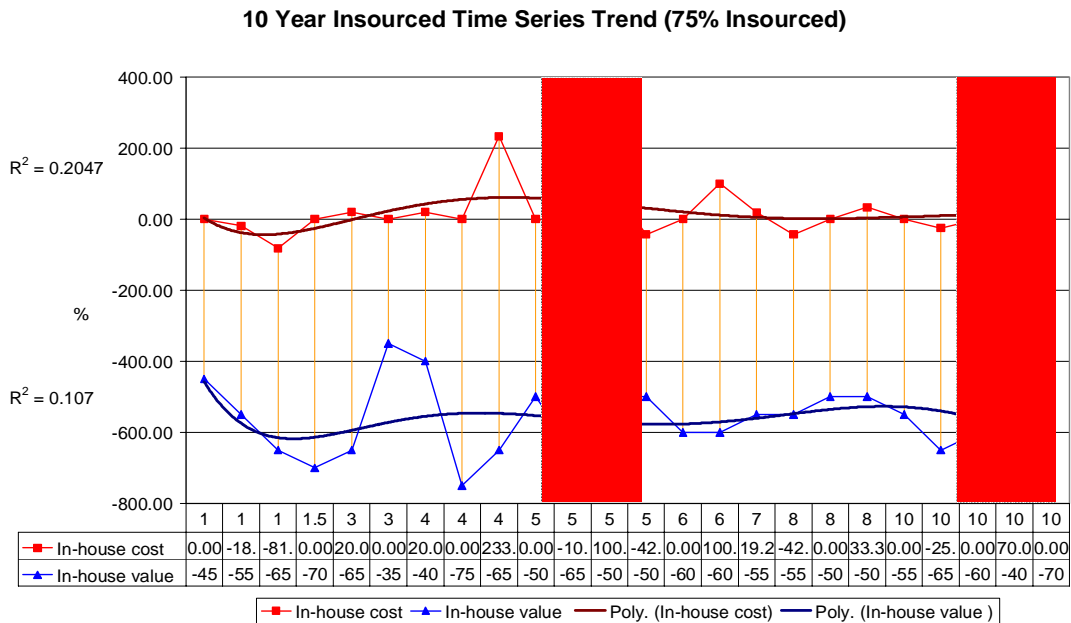


**Figure 34 – Ten-year Insourced Time Trend – Total – Independent Variable**

where for:

Costs,  $y = -3E-09x^6 + 1E-06x^5 - 0.0001x^4 + 0.0065x^3 - 0.1644x^2 + 1.5979x + 63.655$ ,  $R^2 = 0.0156$

Value,  $y = 2E-08x^6 - 5E-06x^5 + 0.0005x^4 - 0.0247x^3 + 0.5383x^2 - 4.3599x + 75.385$ ,  $R^2 = 0.14$ .



**Figure 35 – Ten-year Insourced Time Trend – 75% Insourced**

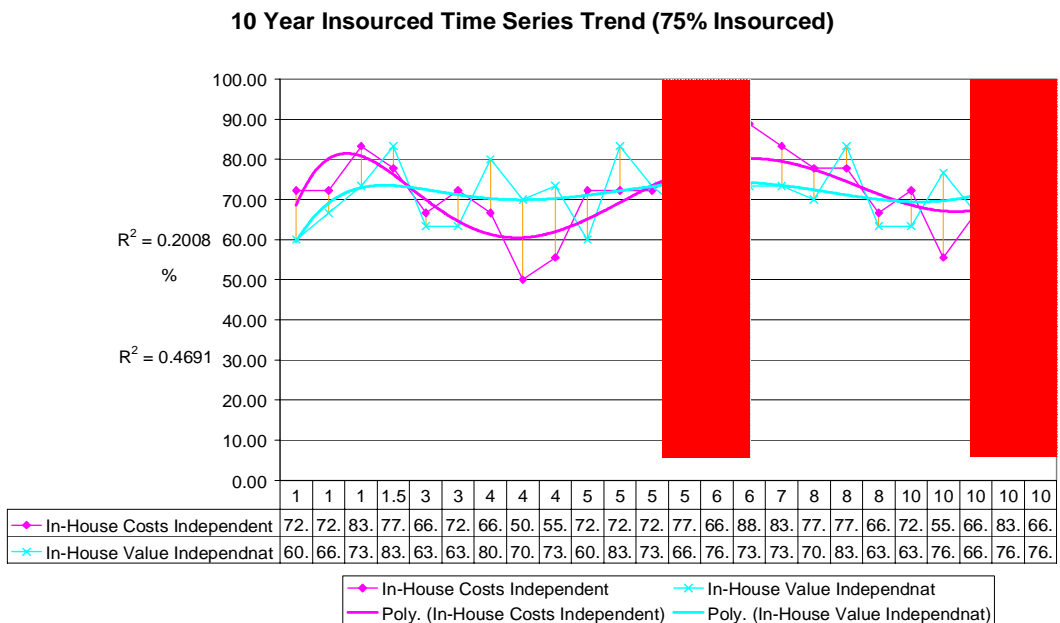
where for:

Costs,  $y = 0.0001x^6 - 0.0093x^5 + 0.3269x^4 - 5.5006x^3 + 44.123x^2 - 139.44x + 103.48$

$R^2 = 0.2047$

Value,  $y = 0.0003x^6 - 0.0237x^5 + 0.7642x^4 - 11.94x^3 + 92.662x^2 - 321.69x - 218.21$

$R^2 = 0.107$ .



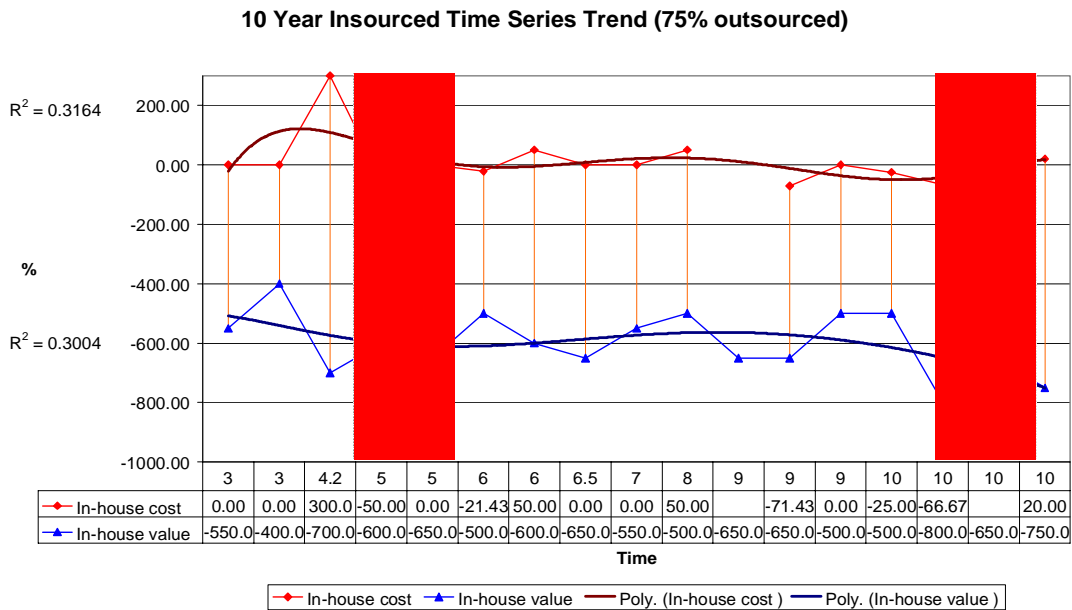
**Figure 36 – Ten-year Insourced Time Trend – 75% Insourced – Independent Variable**

where for:

Costs,  $y = -4E-05x^6 + 0.0037x^5 - 0.124x^4 + 1.9425x^3 - 14.345x^2 + 42.798x + 38.278$ ,  $R^2 = 0.4691$

Value,  $y = -2E-05x^6 + 0.0016x^5 - 0.0533x^4 + 0.8632x^3 - 6.9014x^2 + 25.053x + 40.522$ ,  $R^2 = 0.2008$ .



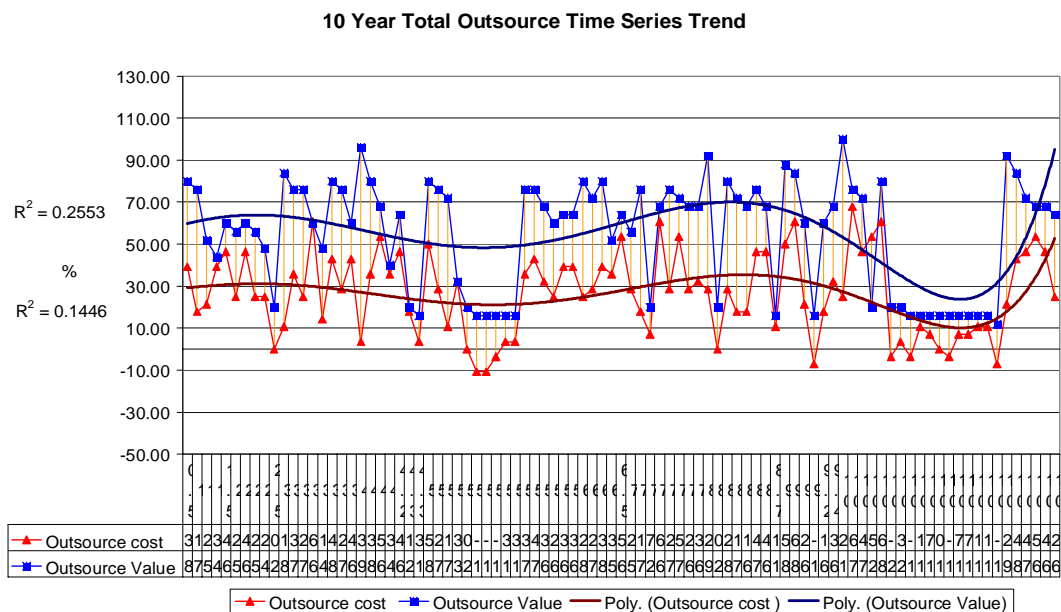


**Figure 37 – Ten-year Insourced Time Trend – 75% Outsourced**

where for:

Costs,  $y = -0.0029x^6 + 0.1762x^5 - 4.0939x^4 + 46.231x^3 - 259.71x^2 + 647.02x - 452.62$ ,  $R^2 = 0.3164$

Value,  $y = -0.0005x^6 + 0.0286x^5 - 0.6475x^4 + 6.5828x^3 - 26.597x^2 + 10.638x - 498.53$ ,  $R^2 = 0.3004$ .

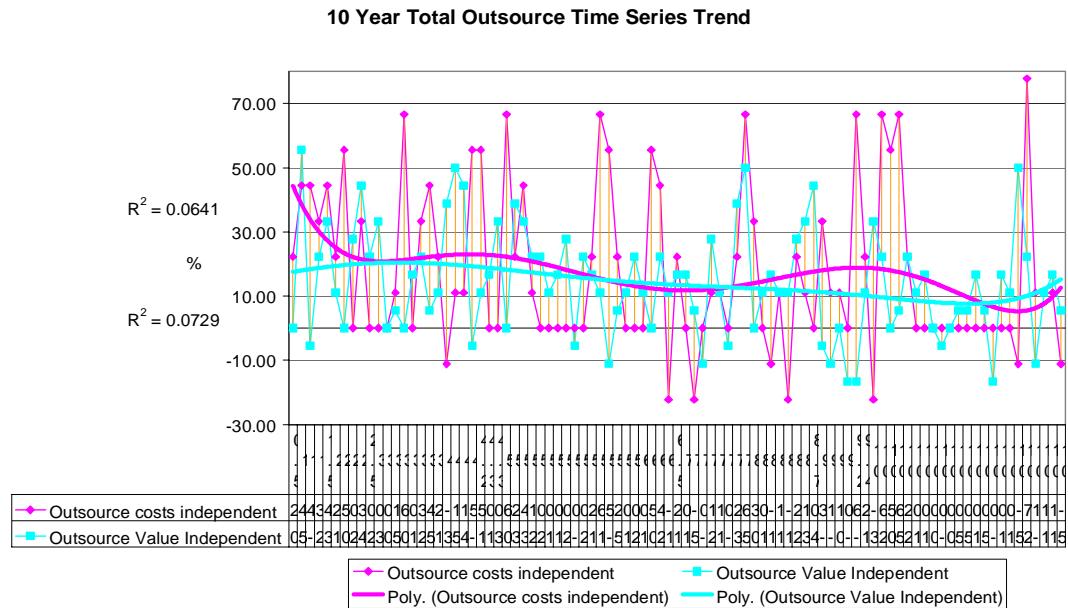


**Figure 38 – 10 Year Outsourced Time Trend – Total**

where for:

Costs,  $y = 1E-08x^6 - 3E-06x^5 + 0.0002x^4 - 0.0048x^3 + 0.0137x^2 + 0.4032x + 28.811$ ,  $R^2 = 0.1446$

Value,  $y = 2E-08x^6 - 4E-06x^5 + 0.0002x^4 - 0.0049x^3 - 0.0392x^2 + 1.1598x + 58.718$ ,  $R^2 = 0.2553$ .

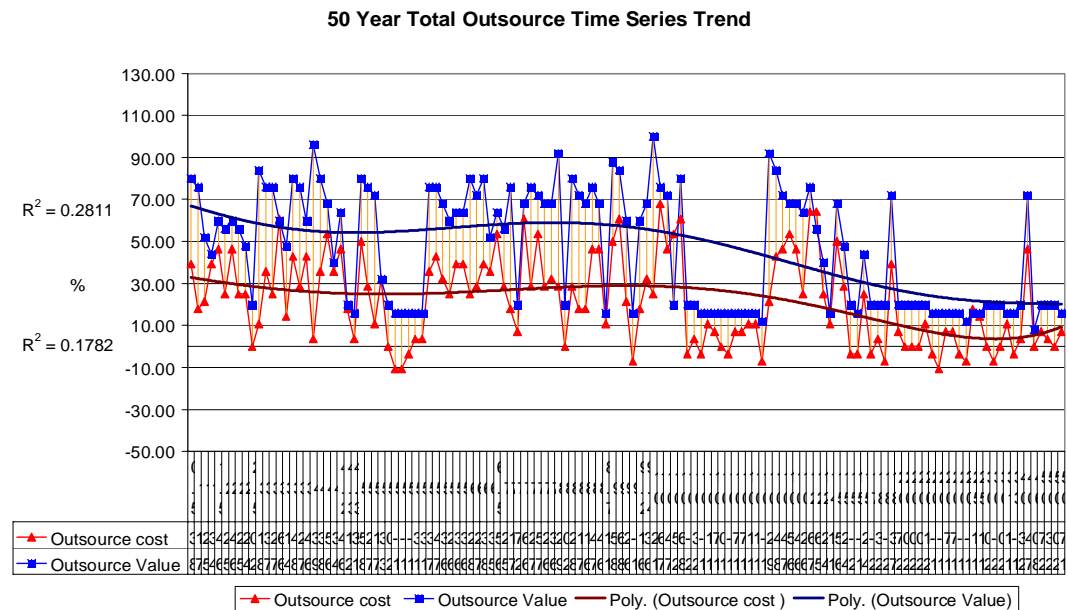


**Figure 39 – Ten-year Outsourced Time Trend – Total – Independent Variable**

where for:

Costs,  $y = 2E-08x^6 - 5E-06x^5 + 0.0006x^4 - 0.0285x^3 + 0.6942x^2 - 7.6448x + 51.405$ ,  $R^2 = 0.0729$

Value,  $y = 2E-09x^6 - 5E-07x^5 + 4E-05x^4 - 0.001x^3 - 0.0077x^2 + 0.4579x + 17.115$ ,  $R^2 = 0.0641$ .

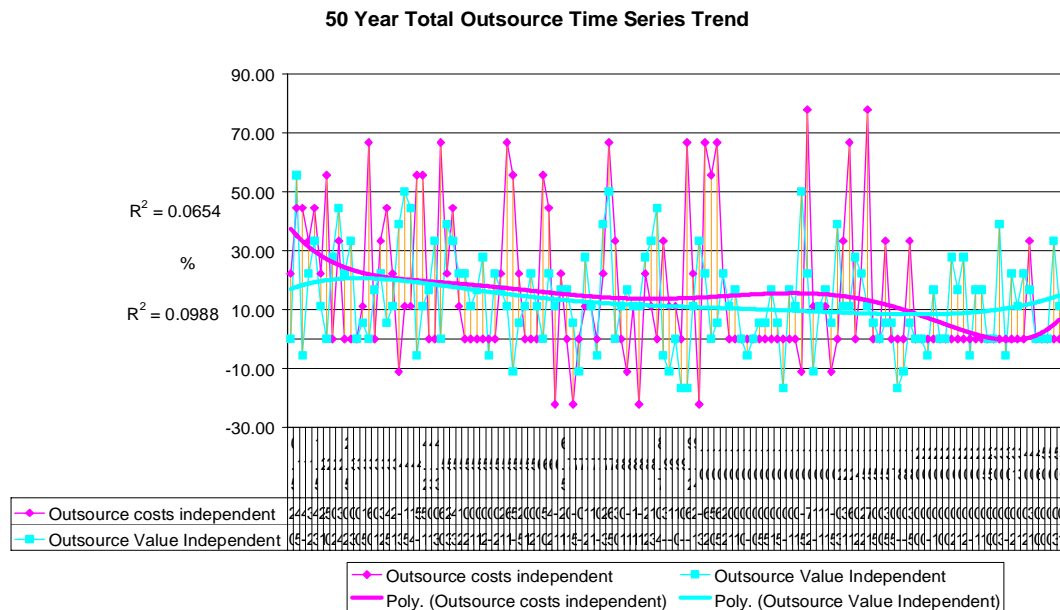


**Figure 40 – Fifty-year Outsourced Time Trend – Total**

where for:

Costs,  $y = 8E-11x^6 - 4E-09x^5 - 2E-06x^4 + 0.0002x^3 + 0.0061x^2 - 0.5512x + 33.397$ ,  $R^2 = 0.1782$

Value,  $y = -5E-10x^6 + 2E-07x^5 - 2E-05x^4 + 0.0009x^3 + 0.008x^2 - 1.0309x + 67.95$ ,  $R^2 = 0.2811$ .

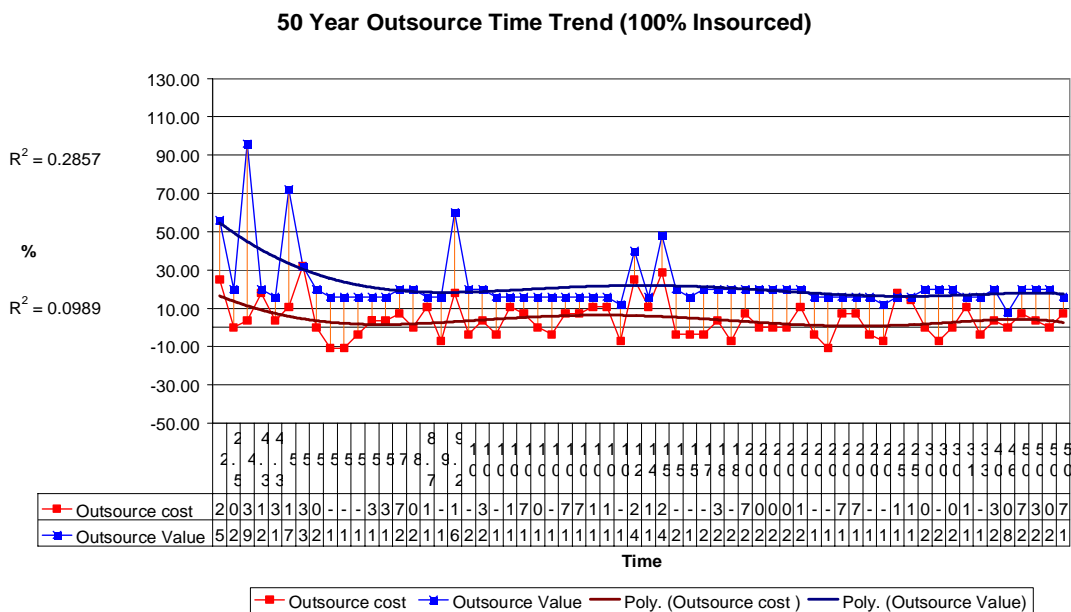


**Figure 41 – Fifty-year Outsourced Time Trend – Total – Independent Variable**

where for:

Costs,  $y = 1E-09x^6 - 4E-07x^5 + 6E-05x^4 - 0.0043x^3 + 0.1486x^2 - 2.6821x + 39.966$ ,  $R^2 = 0.0988$

Value,  $y = -9E-11x^6 + 5E-08x^5 - 1E-05x^4 + 0.0011x^3 - 0.0517x^2 + 0.8489x + 16.16$ ,  $R^2 = 0.0654$ .



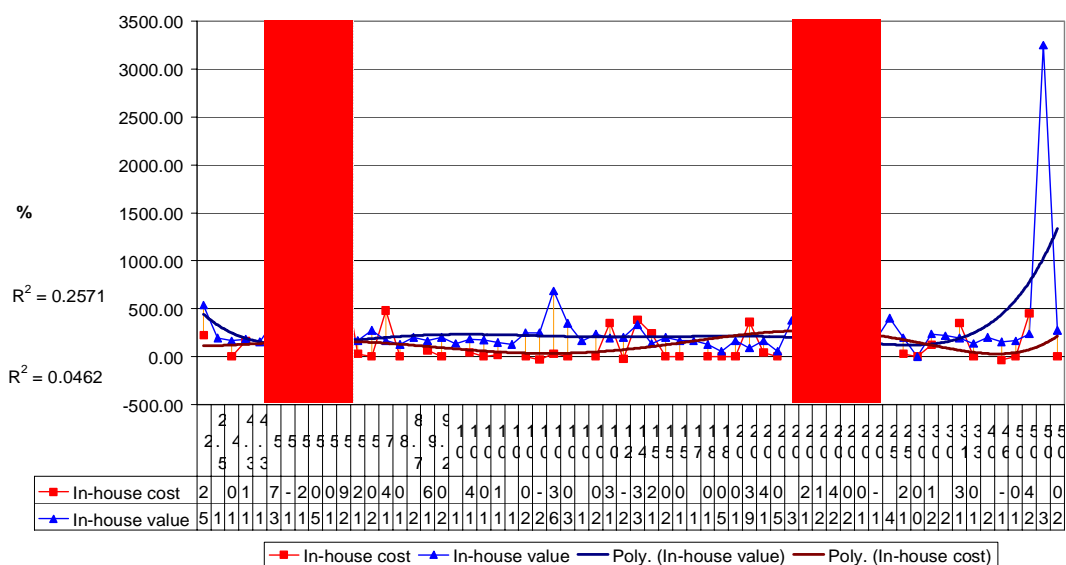
**Figure 42 – Fifty-year Outsourced Time Trend – 100% Insourced**

where for:

Costs,  $y = -3E-08x^6 + 5E-06x^5 - 0.0003x^4 + 0.0025x^3 + 0.1358x^2 - 3.1144x + 19.379$ ,  $R^2 = 0.0989$

Value,  $y = -3E-08x^6 + 6E-06x^5 - 0.0003x^4 + 0.0033x^3 + 0.1959x^2 - 5.6654x + 60.009$ ,  $R^2 = 0.2857$ .

### Ratio Adjusted 50 Year Insourced Time Series Trend (100% Insourced)



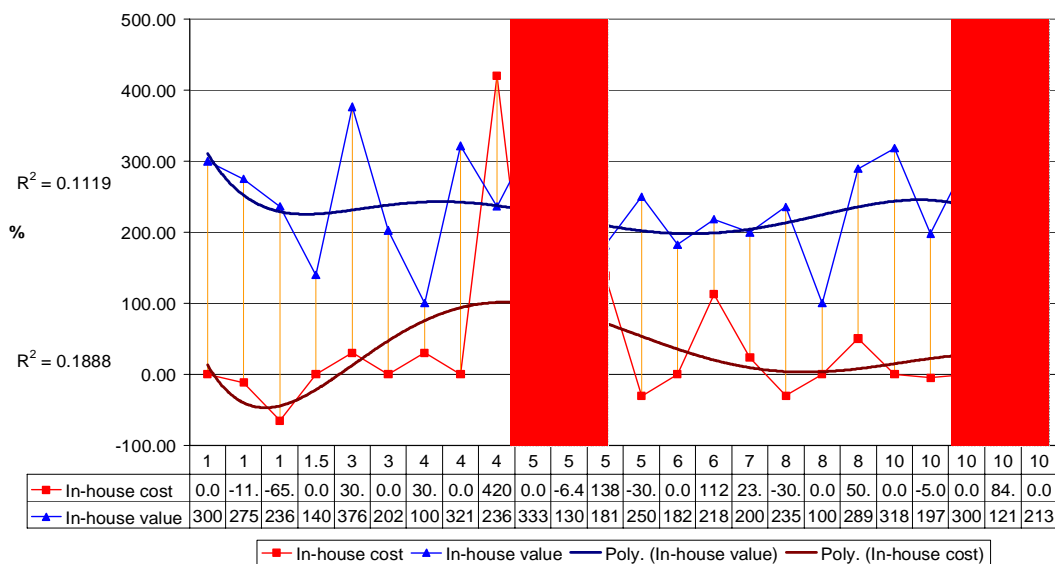
**Figure 43 – Fifty-year Insourced Time Trend – 100% Insourced**

where for:

Costs,  $y = 2E-06x^6 - 0.0003x^5 + 0.0194x^4 - 0.4888x^3 + 4.7271x^2 - 10.819x + 122.52$ ,  $R^2 = 0.0462$

Value,  $y = 3E-06x^6 - 0.0006x^5 + 0.0397x^4 - 1.3452x^3 + 22.828x^2 - 172.66x + 592.42$ ,  $R^2 = 0.2571$ .

### Ratio Adjusted 10 Year Insourced Time Series Trend (75% Insourced)



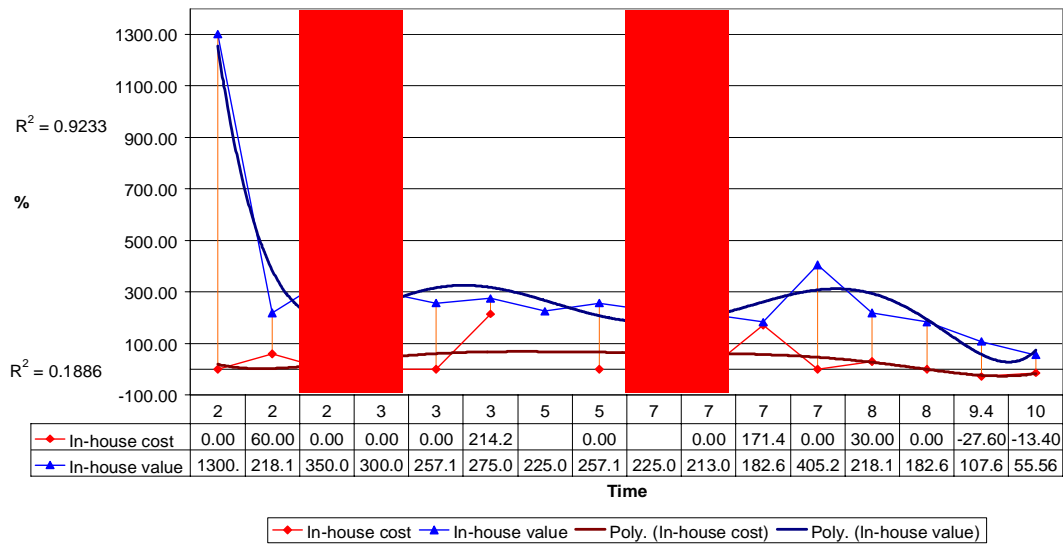
**Figure 44 – Ten-year Insourced Time Trend – 75% Insourced**

where for:

Costs,  $y = 0.0001x^6 - 0.0104x^5 + 0.3908x^4 - 6.9085x^3 + 57.085x^2 - 181.7x + 144.1$ ,  $R^2 = 0.1888$

Value,  $y = 0.0001x^6 - 0.0093x^5 + 0.3236x^4 - 5.3254x^3 + 42.611x^2 - 154.16x + 427.56$ ,  $R^2 = 0.1119$ .

**Ratio Adjusted 10 Year Insourced Time Series Trend (50% In/Outsourced)**



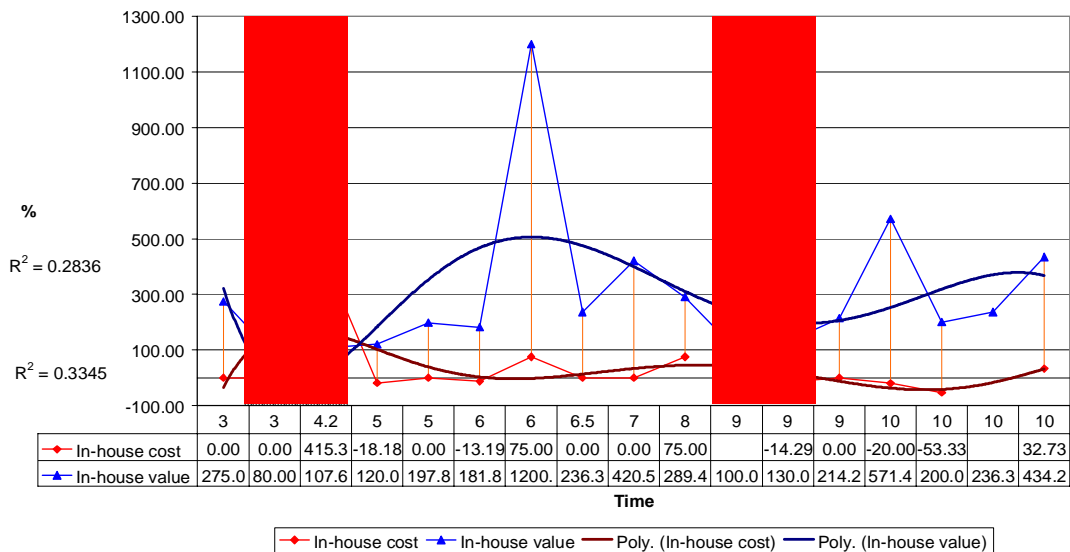
**Figure 45 – Ten-year Insourced Time Trend – 50% In/Outsourced**

where for:

Costs,  $y = 0.0017x^6 - 0.088x^5 + 1.7574x^4 - 17.23x^3 + 83.887x^2 - 170.93x + 121.69$ ,  $R^2 = 0.1886$

Value,  $y = 0.0195x^6 - 1.0656x^5 + 22.734x^4 - 240.11x^3 + 1305.6x^2 - 3415.2x + 3581.4$ ,  $R^2 = 0.9233$ .

**Ratio Adjusted 10 Year Inhouse Time Series Trend (75% Outsourced)**

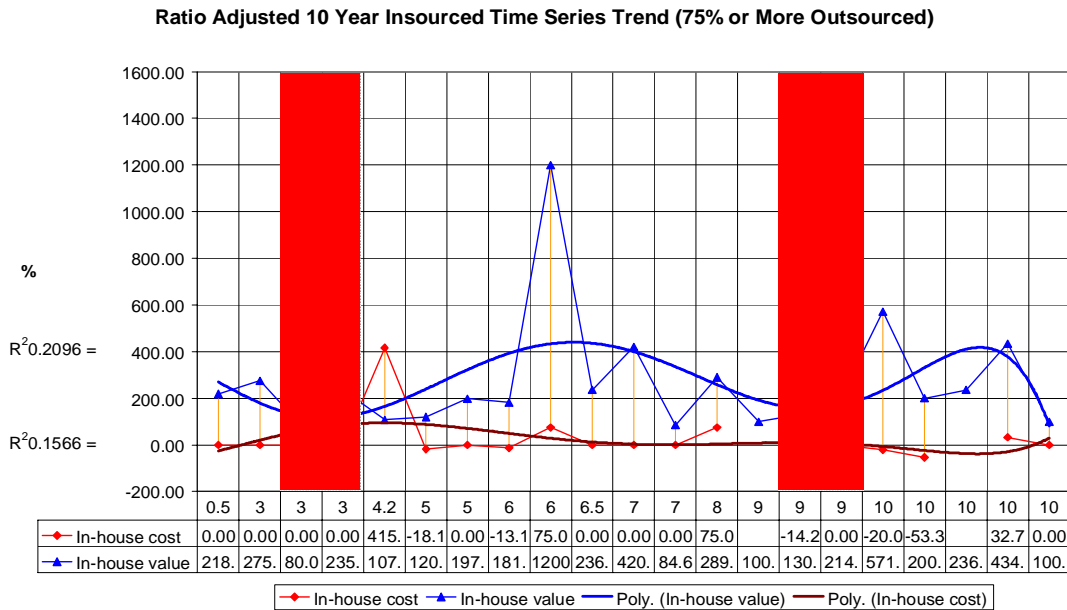


**Figure 46 – Ten-year Insourced Time Trend – 75% Outsourced**

where for:

Costs,  $y = -0.0031x^6 + 0.1944x^5 - 4.7217x^4 + 55.73x^3 - 326.95x^2 + 849.25x - 608.06$ ,  $R^2 = 0.3345$

Value,  $y = 0.0028x^6 - 0.2143x^5 + 6.1x^4 - 82.167x^3 + 529.54x^2 - 1417.6x + 1286.3$ ,  $R^2 = 0.2836$ .

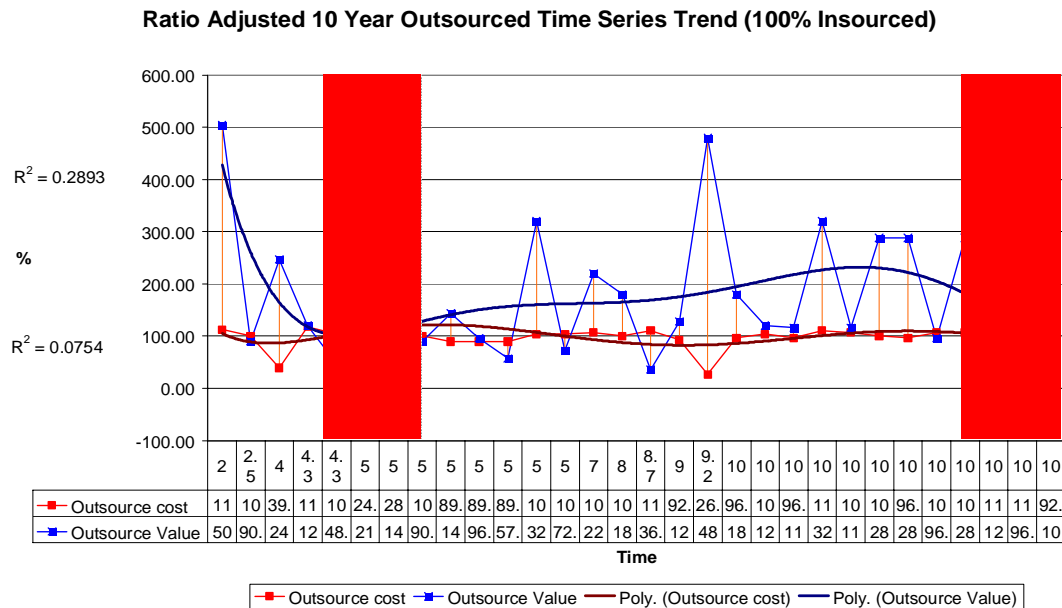


**Figure 47 – Ten-year Insourced Time Trend – 75% or more Outsourced**

where for:

Costs,  $y = 0.0005x^6 - 0.0299x^5 + 0.6662x^4 - 6.4312x^3 + 21.661x^2 + 16.897x - 58.321$ ,  $R^2 = 0.1566$

Value,  $y = -0.002x^6 + 0.1151x^5 - 2.3276x^4 + 19.327x^3 - 50.157x^2 - 43.199x + 345.69$ ,  $R^2 = 0.2096$ .



**Figure 48 – Ten-year Outsourced Time Trend – 100% Insourced**

where for:

Costs,  $y = 3E-05x^6 - 0.0032x^5 + 0.1188x^4 - 2.0896x^3 + 17.048x^2 - 54.459x + 144.61$ ,  $R^2 = 0.0754$

Value,  $y = 8E-05x^6 - 0.0083x^5 + 0.3327x^4 - 6.6104x^3 + 67.735x^2 - 328.68x + 694.78$ ,  $R^2 = 0.2893$ .

$R^2 = 0.1591$

%

$R^2 = 0.0263$

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				
Outsource cost	112	113	113	112	112	118	118	118	111	111	119	129	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119	111	111	119		
Outsource Value	59	92	14	142	19	19	19	53	37	21	13	14	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13	11	13

Time

— Outsource cost — Outsourcing Value — Poly. (Outsource cost) — Poly. (Outsourcing Value)

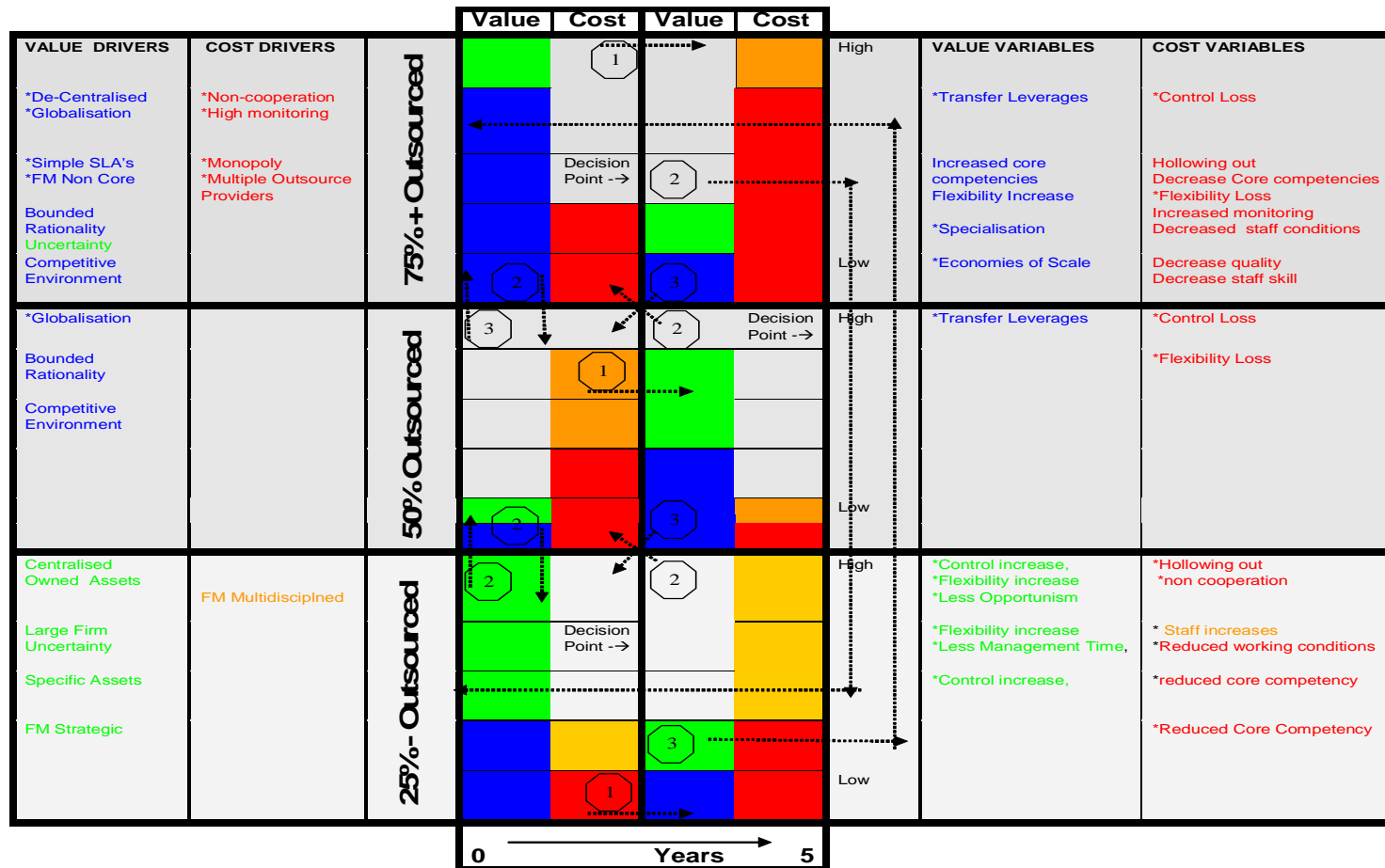
Value,  $y = 5E-07x^6 - 0.0001x^5 + 0.0101x^4 - 0.4499x^3 + 9.9728x^2 - 94.521x + 422.93$ ,  $R^2 = 0.1591$ .

Figure 10 is a line graph showing the percentage of Outsource cost and Outsource Value over time. The graph includes two data series: Outsource cost (red line with square markers) and Outsource Value (blue line with square markers). Both series show significant fluctuations, with Outsource Value generally higher than Outsource cost. Two large red rectangular areas are overlaid on the graph, indicating periods of high volatility or specific data points. The R-squared values for the polynomial fits are 0.3648 for Outsource Value and 0.3584 for Outsource cost. Below the graph is a table with 16 columns and 2 rows, providing numerical data for each time point.

Outsource cost	40.1	48.2	117.	104.	91.0	114.	321.	482.	64.2	160.	64.2	57.8	112.	88.3	232.	546.	314.	160.	116.	235.	55.1	417.	482.	417.
Outsource Value	136.	104.	198.	180.	160.	288.	160.	153.	800.	456.	684.	748.	108.	360.	468.	244.	480.	648.	612.	184.	378.	792.	612.	408.

Value,  $y = -0.0024x^6 + 0.1741x^5 - 4.8492x^4 + 62.892x^3 - 377.38x^2 + 910.25x - 239.37$ ,  $R^2 = 0.3648$ .

## FACILITY MANAGEMENT DELIVERY PREDICTION MODEL GUIDE



Legend: **Outsource Value**, **In-source Value**, **Outsource Cost**, **In-source Cost**,  **Change Options**, \* **Main Drivers**



The preceding Facility Management Delivery Prediction Model can be used as a general guide allowing firms to “map” their position on the value and cost cycles over the critical five-year period, as outlined in this thesis. It is assumed that the organisation’s operating environment is unable to be altered and thus fluctuates at the proposed five-year intervals. In cases where an organisation’s operating environment is able to be altered, then this model should not be used, as it is limiting in its output compared to the intentional changes in a firm’s operating environment to align the current FM delivery method more.

## **FM DELIVERY PREDICTION MODEL PROCESS**

This can be broken down into a four-step process:

### **Step 1: Quantify the extent of outsourcing to locate the most likely FM delivery method.**

As outlined in this thesis, it is important for firms to assess the amount they procure via an outsourced method for their FM. Outsourcing involves a transfer of ownership and control to effectively gain the advantages of the external labour market. As such, an assessment of the amount of true outsourcing should be performed first in order for firms to identify costs and value adequately, and in order for firms to locate their position on the value and cost cycle.

On the FM prediction graph, the extent of outsourcing is represented by three main delivery methods: 75% or more outsourced, 50% outsourced, 25% or less outsourced. These bands best represent the extents of outsourcing firms are likely to use in a real-life context. Thus firms that assess their FM delivery and that outsource only 50% of their FM will be located in the middle band of the graph.

### **Step 2: Determine the current chronological location on the cycle and measure cost and value (dependent variables) for the FM procurement method.**

As it was found that value and cost ratios degrade over time, the current FM delivery method should be assessed for its length of time in its current form. Firms should locate this using the time bands between zero and two and a half years, or two-and-a-half- to five-year intervals at the bottom of the table.

For example, should a firm have been delivering its FM in its current 50% outsourced form for 7.5 years, then it would be located in the middle band, in the left-hand value and cost segment relating to the zero and two and a half years at the bottom of the prediction graph.

Having now located the correct and most likely position on the graph, an assessment of corresponding value and cost can be performed, allowing firms to quantify the amount of value and cost currently realised, and benchmark this against the theorised amounts on the graph.

For example, firms that outsource 50% for 7.5 years should be experiencing high costs and low value, as represented on the graph in the middle band, left-hand box. The associated value and cost variables are listed in the tables on the right-hand side of the graph. These should now be measured and compared against the theorised values on the graph, especially the “main” variables which have been identified as the major contributors to value and costs for the corresponding FM delivery method.

By performing this step, firms will be advised as to the “performance” of the current FM delivery method.

### **Step 3: Assess alignment to cost and value “drivers” specific for the identified FM delivery method (independent variables).**

Typically, should the assessed performance be less than or not according to the prediction model, it is highly likely that the circumstances and operating environment of the firm is not conducive or aligned with the current FM delivery method to achieve the value and cost ratios predicted. As such, an assessment of the cost and value “drivers” should be performed.

For example, for those firms that outsource 50% of their FM, the “main” value drivers are listed on the left-hand side of the graph, being the existence of “bounded rationality”, and operation in a “competitive environment”. Firms should attempt to audit their operating environment to quantify these drivers and ensure the current FM delivery method is the most appropriate.

### **Step 4: Predict the most appropriate FM procurement method to further align to value and cost drivers and raise value and reduce costs OR to avoid a pending downward cycle.**

Having now identified the extent of outsourcing and extent of time for the current FM delivery method, and quantified the amount of value and cost currently being realised, with consideration given to the extent of alignment to value and cost drivers, firms can now make informed decisions on the best way forward to achieve the best possible value and cost scenario. This is represented on the prediction graph with three options.

For example, firms that outsource 50% for six years are located on the middle band in the left-hand box. Assuming that the current value and cost “drivers” align to the FM delivery method chosen, the firm faces three options:

**Option 1** on the graph indicates the firm should do nothing and continue to the right-hand side of the graph within the next 1.5 years.

**Option 2** on the graph indicates the firm should insource more now, and

**Option 3** on the graph indicates the firm should outsource more.

Should the firm be reasonably aligned to the “main” value and cost drivers in the left-hand table for the current 50% outsource method, then Option 2 would not be viable because the lower band value and cost drivers would not be aligned, thus not deliver the value anticipated, as the value and cost drivers are not aligned to the firms current operating environment.

This leaves the firm with only two options. Moving to a more outsourced method into the top band would deliver more value and less cost, however, this is likely to degrade over the next 1.5 years. Therefore, the firm may decide to do nothing, and move onto the next 2.5-year cycle wherein the cost and value “rights” itself.

Assuming this was the choice, again, after a further 2.5 years the firm has further options to avoid a negative cost and value ratio. However, this time there is stronger argument to move away from the current FM delivery band into a more positive cost value ratio. This is marked as a “Decision Point” on the graph, where there are a further three options.

Obviously, this decision is largely dependent on the operating environment the firm is in, namely the main cost and value drivers. In the absence of a shift in the operating environment, the firm in this case would probably outsource more to achieve a better outcome, and thus choose option 2.

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