

MODELLING THE ROLE OF HUMAN RESOURCES MANAGEMENT IN THE INNOVATION CHAIN

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ABSTRACT

Standard learning tools may fall short of achieving desired organisational outcomes. Defective learning means staff learning and competencies may be compromised, hence important organisational activities such as innovation.

The primary role of Human Resources Management (HRM) in innovative organisations is to create a climate for innovation. This means HRM and the innovation leaders should be aware of any deficiencies in the learning processes. This is necessary because learning and creativity are essential foundations for innovation.

The paper highlights the role of HRM in modern organisations, and that innovation activities are part of the evolutionary chain. The innovation chain begins with transformation into knowledge based, then into a learning organisation and finally into innovative enterprises.

The paper also shows that during this evolutionary process, both HRM and transformational leaders have significant and critical roles to ensure that their organisations proceed with innovation by avoiding or addressing two types of organisational defects; namely learning defects (Learning Gaps) and also innovation defects (Innovation Gaps).

In addition, the paper highlights the relationship between learning gaps and innovation gaps.

Furthermore, the paper also shows that both learning and innovation gaps are also related to knowledge gaps.

The learning gaps are shown to comprise of five types of gaps, namely: problem solving gaps, experimentation gaps, learning from past experience gaps, learning from others' experiences gaps, and transferring knowledge gaps. Similarly, innovation gaps are shown to be one or all of the three types of innovation gaps, namely: product innovation gaps, process innovation gaps and organisational innovation gaps.

Further work is required to analyse the importance of each type of gap on organisational performance and the process of innovation.

The role of an innovation leader is shown to be overlapping with HRM's role in areas such as coaching, motivating and rewarding.

INTRODUCTION

Over the past few decades, rapid changes to business environments have led to the emergence of a number of paradigm shifts that have contributed to a continual deforming of the business landscape. Some of these changes are due to increased concerns for the environment and the subsequent evolution of sustainability paradigms.

Sustainability has presented businesses new patterns of competition involving new concepts for innovating Human Resources Management (HRM). HRM has been defined by Beer, Spector, Lawrence, Quinn, Mills, and Walton (1984) as 'all management decisions and activities that affect the nature of the relationship between the organisation and its employees - the human resources'. Beer et al. (1984) means that all management decisions and activities are those relevant to producing new products or services, new technologies or processes in charge of producing those products or services and new managerial practices including HRM practices. Effective HRM practices can deliver a considerable contribution to the overall innovativeness of the organisation. In addition, the introduction of new products or services usually leads to a change in the existing processes, and in many cases, to a change in the organisation and its HRM-practices such as recruitment, training and development. However, management know very well that to avoid becoming obsolete and to sustain competitive advantages, their organisations need to be innovative.

Innovations are usually driven by leaders. In that regards, Bel (2010) identified innovation leadership as the most important driver of innovation and stated 'without great innovation leaders, there is no innovation'. Bel (2010) further added 'A good innovation leader is characterized by the ability to excel in the apparently conflicting skills of creativity and discipline'. Soliman (2011a) identified that innovation leaders should possess a strong ability to recognize opportunities and to develop them. Furthermore, leaders should also have additional characteristics such as: inspiring, driving, enabling, advising, advocating, rewarding, managing linkages, and supporting.

Further attributes of leaders were identified by Soliman (2011a) as 'communicates with vision, energizing, accelerating innovation processes to innovate, committing employees to innovation, and enabling employees to be

innovative'. These characteristics correspond to what is known as charismatic and strategic leadership.

Given that innovation involves risks, (sometimes high risks), and uncertainty then it follows that the innovation leader should also be one who handles risks successfully. Leaders in innovation do not necessarily avoid risks but carefully approach risks to navigate through and concurrently further learning. In addition to those attributes, innovation leaders share common leadership skills and abilities such as coaching, motivating and rewarding.

Further challenges are due to the evolution of the theory of competitiveness (Soliman, 2011a and 2011b). One of the key aspects of the competitiveness framework is that an organisation must be innovative in order to survive and that innovation must create sustainable competitive advantages (Soliman, 2011a and 2011b). Both Soliman (2011a) and Al-Qawabah (2012) emphasised that, in general, innovation is a chain of activities that pass through some stages before innovation and could result in the development of products and services that create sustainable competitive advantages.

Work in innovation and HRM can be traced back to Bolwijn and Kumpe (1990) who suggested that 'Organisations that do not innovate run a large risk to become obsolete and to demise in the end'. Bolwijn and Kumpe (1990) also defined three innovation domains: namely product innovation, process innovation and organisational innovation. Furthermore, Bolwijn and Kumpe (1990) suggest that organisations innovation should involve innovative management practices in the field of HRM.

According to Soliman (2011a), the subject of leadership has been widely researched but yet little has been published about the role of leaders in transforming organisations from knowledge based into learning and then into innovative organisations. The primary role of leadership should be to create a climate for innovation. This type of leadership is normally referred to as Transformational Leadership.

The Innovation Transformational Leader

Innovation leaders are leaders who assist their organisations to learn and then build a workforce that possesses integrative competencies necessary for innovation process (Bennet, 2006).

Transformational leadership was originally proposed by Bass (1985). However, later authors developed further transformational leadership theories (Bass, 1990; Burns, 1978; Conger & Kanungo, 1987; House, 1977; Sashkin, 1988). As such, theories have led to research on transformational leadership, which has

expanded the range of leadership characteristics being examined; however, transformational leadership with respect to transformation from knowledge based into learning and then into innovative organisation has been ignored. For instance, Senge (1990) has identified several roles for leaders in a learning organisation and proposed that leadership must have the capability to affect others in a learning organisation. However, the leadership characteristics that create, capture, transfer, and mobilize knowledge before it can be used for innovation, have still not been thoroughly researched.

Furthermore, Bass and Avolio (1994) proposed that transformational leadership usually emphasises long-term and vision-based motivational activities. However, little research has been conducted on the potential for a transformational leader to positively impact organisational creativity and its transformation from knowledge based into learning and then into innovation (Soliman, 2011a). A number of authors such as Howell and Avolio (1993), Yammarino, Spangler and Bass (1993), Gardner and Avolio (1998), Jung, Chow and Wu (2003) and Soliman (2011a) pointed out that the increase in the popularity of transformational leadership is due to its ability to motivate people as compared with other leadership styles. This view was confirmed by the work of Bass and Avolio (1994) who characterised transformational leadership as being composed of four unique but interrelated behavioural components: inspirational motivation (articulating an appealing and/or evocative vision), intellectual stimulation (promoting creativity and innovation), idealised influence (charismatic role modelling), and individualised consideration (coaching and mentoring).

More recently, Soliman (2011a) presented a quantitative approach and developed a questionnaire based on Politis' (2001) work to evaluate leadership attributes. The results show that there are at least 22 factors or dimensions of leadership. The most important five transformational leadership characteristics relevant to HRM are: attracting talent, ability to build teams, coaching subordinates, rewarding performing staff, and communicating at all levels.

The above five transformational leadership characteristics are in fact activities that are usually executed in conjunction with HR departments. This means the innovation transformational leader could not perform those five functions without the assistance of the HRM.

HRM and Knowledge Gaps

According to Soliman (2011a) transforming organisations from the traditional *information* based form, into *knowledge* oriented organisations requires strategies designed to utilise knowledge that foster learning at later stages.

Such strategies need to engage managerial staff in order to facilitate the implementation of the appropriate knowledge management programs. In other words, such a significant transformation into knowledge based organisation should be carefully executed so that the transformation does not hinder the organisation's efforts in delivering goods or services in accordance with the organisations strategic plans.

The significance of knowledge management and its impact on modern enterprises have been enhanced by Nonaka's (1991) work on knowledge management. Nonaka's work sparked a number of research activities about the modern corporation's power and its intellectual or intangible capabilities. A significant finding of some of these research activities is highlighted by the introduction of the definition of 'knowledge-based intangibles' by Quinn (1992) who proposed that the value of most products and services may be dependent on such as items as technical know-how, product design, marketing presentation, understanding customers, personal creativity, and innovation. Quinn's findings have led many enterprises to consider collective knowledge as a key competitive tool from which innovation can emerge. Further work by Quinn, Anderson and Filkenstein, (1996) resulted in identifying knowledge management as key value adding activities. Their statement 'three quarters of an organisation's added value is attributed to the possession of specific knowledge' points to the significant role of knowledge in the management of modern enterprises.

Furthermore, Clark and Soliman (1997) identified that the commercial emergence of knowledge-based information technology represents a tremendous opportunity to enhance an organisation's effectiveness. However, the findings of Clark and Soliman (1997) elaborate that the introduction of knowledge-based systems is a difficult task which requires team effort and support throughout the enterprise, including the transformational leader.

The full benefits from knowledge management programs have been identified by Eginton (1998) and Sbarcea (1998) as 'benefits that are obtainable only when the knowledge management strategies are appropriately aligned with the organisation strategies'. The work by Eginton and Sbarcea did not recognise that alignment of knowledge management programs with organisational strategy is a necessary pre-requisite before the full benefits from knowledge management programs can be realised. Furthermore, the work by Soliman, Innes & Spooner, K (1999) described the knowledge management chain as:

A number of decisions that need to be made at each stage in the chain requiring creation, capturing, accessing and using knowledge. In other

words, each time a complex decision is made by the transformational leader, input from various teams and groups across the enterprise would be required warranting the use of knowledge-based systems.

Further work by Hansen, Nohria and Tierney (1999) pointed to the need for the enterprise to identify the most suitable knowledge management program that would best assist the organisation in achieving its strategic objectives. Cavaleri, Seivert and Lee (2005) suggested that knowledge management initiatives must facilitate the transformation into learning organisation. Cavaleri et al (2005) further added that such transformation should improve the organisation's capabilities and would ultimately improve the organisation's competitive advantages.

Further attention was paid to the link between knowledge and strategy, due to the work of Soliman and Spooner (2000) who argued that ensuring the alignment between knowledge and strategy is a complex and difficult task that could lead to defective knowledge (*Knowledge Gaps*) and in turn could result in defective strategies (*Strategic Gaps*). Soliman and Spooner also concluded that one of the necessary success factors for a knowledge management program is the interaction between a knowledge management effort and the organisational HRM. However, in reality the organisation needs to consider whether to create a separate leadership role to develop and drive the process, planning and implementation of a knowledge management program. This is usually a difficult task for organisations given that the challenge is to find a leader with characteristics such as interpersonal skills, visionary leadership, business acumen, strategic thinking skills, ability to withstand ambiguity and uncertainty, and teamwork (Soliman & Spooner, 2000).

Furthermore, Soliman and Spooner (2000) have added:

In addition to the above roles, the leader should also drive the knowledge management process by avoiding recruitment of staff with poor managerial skills, inappropriate management philosophy, lack of control and low motivation.

Further work by Soliman and Youssef (2003) pointed to knowledge as 'a facilitator of creative practices that helps a company compete'. From the above discussion, it is clear that knowledge gaps could lead to strategic gaps that the innovation transformational leader must address in conjunction with the HR department. Transformational leaders in charge of knowledge management programs must ensure that the opportunities which are likely to result from transforming an organisation from information based into a knowledge driven organisation, actually take place.

Therefore, since the transfer into knowledge based is regarded as critical to the competitive position of the organisation, then the organisation must act to facilitate the transfer to knowledge based with the engagement of an appropriate transformational leader. This is the view proposed by Soliman (2011a, 2011b) who argued that one of the aims of leadership is to facilitate the transfer into knowledge based and then into learning organisation.

However, since strategic gaps are the likely result of knowledge gaps, then eliminating those gaps must become the new strategic imperative of organisations (Mehrez, 2010). Therefore, it is proposed that the innovative HRM should address or eliminate knowledge gaps.

Proposition 1: Innovative HRM should address knowledge gaps in the organisation.

HRM and Learning Gaps

The innovation chain defined by Soliman (2011a) and Al-Qawabah (2012) requires that innovation evolve over three stages; namely Stage 1 (transformation into knowledge based), Stage 2 (transformation into learning organisation) and Stage 3 (transformation into innovative organisation). According to Soliman (2011a) the transformation into learning organisations is a critical transformation that needs to be carefully executed.

Many organisations like: IBM, Boeing and Xerox, achieved their best successes after learning from their history by studying their past failures and successes (Garvin, 1993). Management of those organisations know that it is not possible for them to refer to their organisations as *learning organisations* by simply calling or declaring that they are learning organisations. The organisation must implement and execute a set of learning strategies that are based on established criterions.

Most managers now recognise the relationship between efficiency and profitability and that customers' demand is indeed dynamic and requires continuous learning and complex analysis based on assumptions, uncertainty and trial and error. This thinking implies that standard learning tools may fall short of achieving desired organisational outcomes. For example, staff learning and competencies may ultimately lead to organisational innovation needed for sustainable performance.

The origin of the concept of learning can be traced back to March and Olsen (1975) who were the first to link the efforts of the individual to organisational learning. On the other hand, Argyris and Schön (1978) were the first to

propose models that facilitate organisational learning. Indeed the work of Argyris and Schön (1978) in identifying single-loop and double-loop learning has presented basis for further work that has led to the evolution of the concept of Learning Organisation proposed by Senge (1990). In this regard, Kim (1993) proposed a single comprehensive model based on the integration of the [Argyris and Schön](#) and [March and Olsen](#) models which further enhances the application of the Senge (1990) model.

The concept of organisational learning was further enhanced by the work of Nonaka and Takeuchi (1995) who proposed a link between knowledge and learning. Further attention to the concept was made by Flood (2009) who discussed a link between the Senge model and the origins of the theory traced back to Argyris and Schön (1978). It should be noted that Amabile (1988, 1996) pointed out that:

In order to build environments that support innovation the organisation must clearly demonstrate that creativity and innovation are valued by focusing communication within the organisation on the excitement and potential of the ideas being generated and the work being accomplished.

In more recent times, Bontis, Crossan and Hulland (2002) empirically tested a model of organisational learning that is based on knowledge flow across the organisation. In other words, organisational qualities such as leadership, organisational motivation, resources, and innovation management practices may greatly influence individuals' and organisations' overall innovation.

Often the concepts of organisational learning and learning organisation have been used interchangeably to refer to learning in organisations (Ortenbald, 2004; Rebelo & Gomes, 2008). However, in terms of their similarities, such as the similarity between the double loop learning of organisational learning and the discipline of mental model in a learning organisation, it should be noted that the two concepts are quite different (Al-Qawabah, 2012).

It should be noted, that organisational learning is a process that involves interactions among individuals and decision makers. Learning has been a very well-known and heavily studied subject. However, some authors have begun to study learning at the individual level of analysis in the organisational context. Garvin (1993) defined a learning organisation as 'an organisation skilled at creating, acquiring and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights'. Garvin's work shows that a learning organisation can be measured and manifested through series of activities. In more recent times, Ortenbald (2004) proposes an integrated

model for a learning organisation that includes organisational learning, learning on-the job, a climate of learning, and an organisational structure that is flexible and organic. Chang and Lee (2007) further explained that a learning organisation covers individual, grouping and organisational learning with the simultaneous proceeding effort for organisational and individual learning.

According to Senge (2006) and Rebelo and Gomes (2008), senior management must realise that the way in which an organisation learns is a key parameter to its effectiveness and potential to develop and grow. Rebelo and Gomes (2008) further added that ‘the popularity of learning organisations and organisational learning are due to the fact that learning is an important source of competitive advantages’. It should be noted that Kumar and Idris (2006) found that team learning, embedded system and provision of leadership possess strong relationships with knowledge performance.

According to Soliman (2009, 2011a), many business analysts and researchers are now debating whether it is sufficient for organisations to redress or combat only the five competitive forces proposed by Porter (1980). This is because the complex and dynamic business environments in the 21st century such as globalisation have pushed organisations to be creative in the search for ways to sustain competitive advantages. Although debate about the role of learning in organisations was already attracting attention, this prompted Stata (1989) to suggest that ‘the rate at which individuals and organizations learn may become the only sustainable competitive advantage’. In a response to this kind of discourse and rapid changes to business environments, the Senge’s (1990) model on learning organisation defined five disciplines of a learning organisation as the central theme of any learning organisation model. Senge’s model does not provide a precise definition of a learning organisation; instead it relies heavily on clarification to the concept, through introducing and identifying the five disciplines of learning organisations as shown in Table 1 below. Other models such as Pedler, Burgoyne and Boydell’s (1991) model and Garvin’s (1993) model were also developed. The difference between the three models is highlighted in Table 1.

Garvin (1993) identified learning organisation to be ‘an organisation skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights’. According to Garvin (1993), in order to meet this definition, organisations should master five main activities, namely; systematic problem solving, experimentation, learning from past experience, learning from others, and transferring knowledge.

Table 1: Comparison between the learning models of Senge, Pedler and Garvin.

Model of Learning Organisation	Activities
Garvin (1993)	<ol style="list-style-type: none"> 1. Systematic problem solving. 2. Experimentation. 3. Learning from past experience. 4. Learning from others. 5. Transferring knowledge.
Pedler et al (1991)	<ol style="list-style-type: none"> 1. Learning approach to strategy. 2. Participative policy making. 3. Information. 4. Formative accounting and control. 5. Internal exchange. 6. Reward flexibility. 7. Enabling structures. 8. Boundary workers as environmental scanners. 9. Inter-company learning. 10. Learning climate. 11. Self-development for all.
Senge (1990)	<ol style="list-style-type: none"> 1. System thinking. 2. Personal mastery. 3. Mental models. 4. Building shared vision. 5. Team learning.

López, Montes Peón and Ordás (2006) suggested that some organisational failures could be attributed to the lack of appropriate management of organisational learning which is closely related to unsatisfactory management of organisational knowledge. This was supported by Senge (2006) who has suggested that the traditional competitive advantages may be overridden by a new set of key competitive advantages such as knowledge management, learning and creativity. In addition, Christensen (2007) also argued that knowledge sharing is indeed a process and therefore it must have objectives. Some of these objectives may be exploiting and identify existing but accessible knowledge, in order to solve specific complex tasks more effectively than other traditional methods. Maqsood, et al (2007) further added that satisfactory management of knowledge and learning activities is not only a prerequisite for innovations but also the link between knowledge, learning and innovation and that knowledge management should be considered a key organisational

activity. This view was supported by Garvin, Edmondson and Gino (2008) who noted that one of the main attributes of dynamic and continuously evolving organisations is that the organisation must be truly a learning organisation (Rebelo & Gomes, 2008; Kalkan, 2008; Mehrez, 2010; Soliman, 2011a).

According to Ayupp and Perumal (2008) HRM activities should be designed to facilitate and make a work environment suitable for the above five disciplines of a learning organisation to be practiced. It should be noted that the role of HRM is also to foster each of the five disciplines of a learning organisation so that the organisation's competitive advantages are sustained. Furthermore, little work has been published about the role of HRM in five disciplines of learning organisation.

For organisations to implement and benefit from the learning organisations concept, HRM must ensure that the above five activities are executed as promptly and as efficiently as possible. This requires development and implementation of non-defective strategies for the five organisational activities. Soliman (2009) defined non-defective strategy as strategy that is free from *Strategic Gaps*. Furthermore, Soliman (2009, 2010a) pointed out that normally *Strategic Gaps* are the products of *Knowledge Gaps*. This means if knowledge defects or *Knowledge Gaps* are found in any of the five activities, then the result is defective strategies for that activity. In other words, a *Knowledge Gap* for any of the five activities could lead to *Strategic Gaps* and in turn could result in *Learning Gaps* for that activity. Accordingly, the organisation should ensure that their learning activities are free from learning gaps. This in turn requires that the organisation must ensure that each and every activity is free from both strategic gaps and knowledge gaps. The following table (Table 2) illustrates examples of mapping knowledge gaps, strategic gaps and learning gaps as a consequence of defective knowledge '*knowledge gaps*'.

However, Soliman (2010b) pointed out the crucial role of HRM in knowledge generation and suggested that HR departments should be equipped to deal with any mismatch of the knowledge generated such as in the case of mapping the perception of line managers. However, one of the shortcomings of the Soliman (2009, 2010a) approach is that it did not address the liabilities and issues arising out of the existence of defective knowledge, and in turn the associated defective strategies, in particular its relevance to the new paradigms of innovation and sustainability (Tissen, Lekanne Deprez, Burgers and Monfort (2010).

Table 2: Mapping Knowledge Gaps, Strategic Gaps and Learning Gaps.

	Activity	Knowledge Gaps	Strategic Gaps	Learning Gaps
1	Systematic problem solving	Use of quantitative instead of qualitative methods.	Use statistical packages instead of case study tools.	Lack of relevance of outcomes to current problem.
2	Experimentation	Use sampling analysis instead of comparing cases.	Use questionnaires to survey subjects instead of interviews.	Solution is irrelevant to current problem.
3	Learning from past experience	Use inappropriate case for learning from organisation history.	Use inappropriate analysis techniques.	Learning is of little value to the current problem.
4	Learning from others	Selecting the wrong company or individual.	Method of analysis may be unsuitable and conclusion not relevant.	Irrelevance of learning to the problem on hand.
5	Transferring knowledge	Transferring wrong knowledge or transferring limited or incomplete knowledge.	Using wrong strategies for transferring learning through the organisation.	Learning obtained from this knowledge transfer is of little use, if any, to the current situation.

Given that learning is primarily a knowledge based activity, then it follows that defective knowledge or knowledge gaps must lead to learning defects or gaps. Accordingly, it is clear from Table 2 there are five types of learning gaps, namely:

1. Systematic problem solving gaps;
2. Experimentation gaps;
3. Learning from past experience gaps;
4. Learning from others gaps; and
5. Transferring knowledge gaps.

Furthermore, the role of the innovative HRM is also to ensure that learning and creativity would constitute essential foundations for innovation and that

the organisation is addressing the above five *learning gaps*. Therefore it is proposed that:

Proposition 2: The innovative HRM should address the five learning gaps which are: problem solving gaps, experimentation gaps, learning from past experience gaps, learning from others gaps, and transferring knowledge gaps.

HRM and Innovation Gaps

Innovation could be pursued along three dimensions, namely: products, processes and organisational practices. In this regards, De Leede (1997) defined innovation as 'deliberate and radical changes in existing products or services, processes or the organisation in order to reach a competitive advantage compared with competitors'. De Leede (1997) further added that innovations can be managed throughout all stages (knowledge, learning and innovation). Deliberate innovations of processes or organisations means innovation of organisational processes such as HRM processes to produce a new type of organisation that could support, for example, teamwork, virtual work and improved inter-organisational networks.

It should be noted, that innovation can also involve developing strategies and processes that facilitate the transformation of ideas to final product or service. Within this context, Egbu, Gaskell and Howes (2001) consider innovation as the new pre-requisite for a competitive advantage.

Innovative enterprises cannot be innovative by simply declaring or labelling themselves as 'innovative organisations'. What is needed is appropriate leadership that can make the transformation actually happen. Bel (2010) emphasised that innovation requires a good transformational leadership. Soliman (2011a) also suggested that the third stage in the innovation evolution is the transformation into innovation which must be lead and executed by the appropriate transformational leader.

It should be remembered, that innovation activities are in fact a chain of activities that begin with transformation from information into knowledge, then into learning before it can finally be used for innovation.

Soliman (2011a) has shown that transformational leadership can facilitate transformation of the organisation into innovation. Soliman (2011a) has shown that the six most important characteristics of the transformational leaders are: courage to switch off or terminate projects, rewarding performing staff, ability to appropriately time release of products to the market, ability to release products to the market within budget, and ability to inspire and be a role

model for other staff. Soliman (2011a) also found that there are 14 other transformational leadership characteristics that may be considered less critical. Those non-critical characteristics include: degree of passion for the job, attracting talent, ability to build teams, coaching subordinates, communicating at all levels, driving projects successfully, enabling project supporting environments, advising others managers, advocating for improvement, encouraging self-goal setting, ability of self-rehearsal, ability of self-reinforcement, ability of self-observation, and ability of self-expectation.

Storey (1995) and Legge (1993) pointed to the distinction between traditional personnel management proposed by Beer et al (1984) and modern innovative HRM. Innovative HRM means that organisations should look for innovative ways of dealing with important HR issues such as: flexible staffing approach, delegation of the responsibility for the development and introduction of new innovative work methods suitable for new products or services and introduction of a reward system that could be linked to the innovation outcomes. It should be noted, that De Leede, Looise and De Weerd-Nederhof (1999) pointed out to the growing need for innovative HRM in most companies and that the innovative HRM is a critical success factor.

The role of HRM in organisations has become a critical issue of increasing importance. For example, the role of HR has changed from being a requirement of organisational strategy (Kozlowski, 1987) to becoming a necessary component of organisational strategy. Traditional HRM roles in areas such as conflict resolution, employee appraisals, customer satisfaction, business intelligence and competitor information have now been expanded to include dealing with knowledge issues. In this regards, Soliman and Spooner (2000) labelled human resources as *Knowledge Treasures* and that HRM role is to ensure there is no mismatch between HR and the five important HRM activities, namely: evaluation of HRM programs, securing senior management commitments, identifying HRM programs' priorities, implementing selected HRM programs, and managing staff expectations.

It should be noted, that the link between HRM and innovation can be traced back to Bontis (1998) who proposed that 'the quality of the workforce is an enabler and supporter of innovation and strategic renewal'.

Furthermore, HRM's role is also to assist the transformational leaders to communicate with vision, energise and accelerate innovation processes to innovate. Committing employees to innovation and enabling employees to be innovative are also activities that both the innovation leaders and HRM must execute appropriately. The additional HRM role stems out of their responsibility to manage learning and perhaps avoid if not eliminate the

learning gaps. The aim of HRM activities in this case is of course to ensure that innovation proceeds forward and that it is not based on defective learning (learning gaps). Accordingly, innovative HRM should be able to address the five learning gaps which are: problem solving gaps, experimentation gaps, learning from past experience gaps, learning from others gaps, and transferring knowledge gaps.

As mentioned before, there are three types of innovations: product, process and organisational innovation. This means there should be three types of innovation gaps (i.e. defective innovations based on defective learning activities). Each type of innovation gap is usually based on a combination of the three types of innovation gaps. This means the innovative HRM should address the three types of innovation gaps, namely: product innovation gaps, process innovation gaps and organisational innovation gaps. In this regards, it is proposed that:

Proposition 3: Innovative HRM should address the three types of innovation gaps, namely, product innovation gaps, process innovation gaps and organisational innovation gaps.

CONCLUSIONS

Although most managers recognise the importance of efficiency and its relationship to profitability, change in demands require continuous learning and complex analysis that must be based on assumptions, uncertainty and trial and error. This implies that standard learning tools may fall short of achieving desired organisational outcomes. For example, staff learning and competencies may ultimately lead to organisational innovation and in turn sustainable performance.

Although HRM has been widely researched, little has been published about the role of HRM in transforming organisations into innovative organisations. Given that the primary role of HRM in an innovative enterprise is to create a climate for innovation, then it is important that organisations, and in particular HRM and innovation leaders, are made aware of any deficiencies in their organisations including the processes of learning. This is necessary to ensure that learning and creativity would constitute essential foundation for innovation.

This paper highlights the role of HRM in modern organisations. It is shown that modern organisations need to be innovative. However, innovation activities are evolutionary in that activities begin from transformation into knowledge based, then into a learning organisation and finally into innovative enterprises.

The paper also shows that during this evolutionary process both HRM and transformational leaders have significant and critical roles to ensure that their organisations proceed forward with innovation by avoiding or addressing two types of organisational defects, namely learning defects (Learning gaps) and also innovation defects (innovation gaps).

The paper shows that there is a relationship between learning gaps and innovation gaps. This implies that if an organisation has defective learning systems, then it is likely that its innovation processes could also be defective or not delivering outcomes as expected.

Furthermore, the paper also shows that both learning and innovation gaps are also related to knowledge gaps. This is true because good learning requires good knowledge and the reverse is true i.e. defective knowledge or knowledge with *knowledge gaps* could result in unsatisfactory learning outcomes. Similarly, should innovation be based on defective or unsatisfactory learning, the outcome may be defective innovation processes ~~that~~ which could produce innovation that is non-compliant with predetermined attributes such as cost, quality and time. In other words, organisations should pay attention to the existence of any type of innovation gap and/or other types of gaps such as learning gaps.

The learning gaps are shown to comprise five types of gaps, namely: problem solving gaps, experimentation gaps, learning from past experience gaps, learning from others gaps, and transferring knowledge gaps. Similarly, innovation gaps are shown to be one or all of the three types of innovation gaps, namely: product innovation gaps, process innovation gaps and organisational innovation gaps.

Further work is required to analyse the importance of each type of gap on organisational performance and the process of innovation.

The role of the innovation leader is shown to be overlapping with HRM's role in areas such as coaching, motivating and rewarding.

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