

# Valuing intangible assets provides new challenges

The evaluation of intangible assets has long been a vexed issue. In a survey of the Group of 100 companies, **ZOLTAN MATOLCSY**, **DONALD STOKES** and **PETER WELLS** review the treatment of intangible assets and discuss what impact this has on performance and performance evaluation.

**F**inancial reporting has been likened to an information highway that should serve the needs of those who use it. The consequences of failing to satisfy these needs include the inability to raise and/or allocate capital efficiently (Jenkins, 1994).

A major challenge in an environment of globalisation and accelerating technological innovation is ensuring that relevant information is provided, through both internal management reports and external financial reports.

Failure to develop relevant reporting practices will at best make reports irrelevant, at worst misleading. This paper aims, through a survey of major Australian firms, to provide insights into the nature of intangible assets, the management and accounting practices adopted with respect to such assets, and the potential relevance of such information for both internal and external users. Evidence is presented of identifiable intangible assets arising from strategies to develop competitive advantage, and increasingly representing the value created within the firm by management.

Accordingly, information on the development of such assets will be critical internally for evaluating managerial performance and externally for determining the level and persistence of earnings by financial analysts.

## The increasing significance of intangible assets

Whether traditional financial reports, that generally emphasise tangible assets

are maintaining their relevance is the subject of much academic debate. For example, Collins, Maydew and Weiss (1997) investigate the association between market values and earnings and the book value of equity across the years 1953 to 1993.

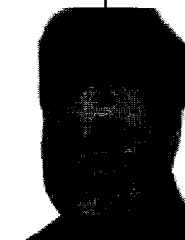
Focussing on the explanatory power, measured as adjusted R2 in regressions of earning, and book value on market value, they find that the value relevance of earnings has declined over time, having been replaced by an increased relevance of book values. On this basis, they conclude that the relevance of financial statement information is being maintained and possibly enhanced. However, this result is counter-intuitive and further consideration of this result is suggested.

Firstly, the decline in the value relevance of (aggregate) earnings could be a consequence of an increase in the incidence of reported losses and transitory items, and the inclusion of these items in operating earnings. This interpretation is consistent with studies by Basu (1997) and Elliott and Hanna (1996), who identify losses and transitory items as reducing the relevance of current period earnings.

Secondly, Collins et. al. give scant consideration to changes in the coefficient on book value, and implications thereof. It is notable that the coefficient on book value of equity is increasing, and in the latest period, 1983 to 1993, is significantly greater than one.

Furthermore, the increase in the coefficient on book value above one is most pronounced for intangible asset

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intensive firms. An alternative interpretation of this result is that unrecognised intangible assets are increasingly relevant, and the apparent improvement in explanatory power in book value is attributable, and limited, to circumstances where unrecognised intangible assets are correlated with tangible assets (i.e., an omitted correlated variable problem).

This interpretation is consistent with evidence provided by Amir and Lev (1996), who focus on the intangible intensive cellular telecommunications industry where tangible assets are relatively insignificant (as evidenced by a mean market value to book value ratio of 12.34 in 1993) and not likely representative of intangible assets.

In this industry, traditional financial information has very little explanatory power for market values. Furthermore, if the gap between market values and book values is increasing, as suggested by Lonergan, Stokes and Wells (2000), reliance on a correlation between recognised tangible assets and unrecognised intangible assets to ensure the continued relevance of accounting reports may be increasingly untenable.

Progress towards resolution in this debate doubtless requires an enhanced understanding of the potential relevance of intangible assets. Insights into the nature of intangible assets are provided in Kaplan and Norton (2001 a and b). They comment that in the later part of the 20th century intangible assets have come to the fore, and strategies for achieving competitive advantage, or creating value, have shifted focus from tangible assets to intangible assets.

Importantly, they identify intangible assets as either developed from, or utilised in, strategies for developing competitive advantage, and reflect the drivers of firm performance. This guides both the identification of appropriate performance measures and the implementation of strategic plans. A natural extension of this is that intangible assets should form an integral component of corporate performance evaluation, both internally and externally.

**TABLE 1 IMPORTANCE OF TYPES OF INTANGIBLE ASSETS**

	Minimum	(n=17) Mean (1-7)	Maximum
<b>Market Access Related Intangible Assets</b>			
Customer Service	1.0	5.2	7.0
Product Quality	2.0	5.5	7.0
Quality Accreditation Programs	2.0	4.8	7.0
Reputation Within Industry	4.0	5.9	7.0
Broad Range of Products	1.0	4.5	7.0
Brand Identification	1.0	6.0	7.0
Advertising	1.0	4.6	7.0
Key Location	1.0	5.0	7.0
<b>Market Access Related Intangible Assets</b>			
Geographic markets	1.0	4.7	7.0
Vertical Integration	2.0	4.0	6.0
<b>Technology Intangible Assets</b>			
Trade Secrets	2.0	5.3	7.0
Trained Personnel	3.0	5.7	7.0
Ability to Manufacture Specialty Products	1.0	3.7	7.0
Innovation in Manufacture	1.0	4.6	6.0
Technological Superiority	2.0	4.9	6.0
Licences	1.0	5.1	7.0
Refining Existing Products	2.0	4.9	7.0
Developing New Products	1.0	5.3	7.0
Research and Development	2.0	4.6	7.0
Patents	1.0	5.4	7.0
Copyrights	1.0	4.6	7.0
<b>Management Intangible Assets</b>			
Management Practices	3.0	5.5	7.0
Management Information Systems	3.0	5.4	7.0

**TABLE 2 RELATIVE IMPORTANCE OF INVESTMENTS IN ASSETS**

	Minimum	(n=17) Mean (1-7)	Maximum
Relative importance of tangible assets compared to 10 years ago	2.0	4.2	7.0
Relative importance of intangible assets compared to 10 years ago	4.0	5.4	7.0
The strategic significance of investments in tangible assets	3.0	5.1	7.0
The strategic significance of investments in intangible assets	3.0	5.5	7.0
Extent to which firm success can be attributed to investments in intangible assets	2.0	5.1	7.0

With the aim of further developing this view of the nature of intangible assets, and the accounting and management practices adopted for such assets, and with the assistance of the Group of 100, a survey was distributed to member companies.

While inducing a large firm sample bias, selection of these firms is justified by the greater propensity for disclosure of identifiable intangible assets by these firms. The survey instrument was developed in conjunction with Lonergan Edwards and Associates and PricewaterhouseCoopers (PwC), and was pre-tested on a sample of PwC clients.

Due to the limited research previously undertaken with respect to intangible assets, the survey is necessarily exploratory. As well, the intended diverse range of target companies dictated general questions concerning intangible assets and management and reporting practices adopted with respect to such assets.

We received responses from 17 companies, which represents a response rate of less than 20%. This greatly limits the extent to which responses can be analysed, and the potential for making inferences. The responses are from firms in a relatively wide range of industries, with the only industry with three (or more) responses being mining.

Where possible, comparisons are made between the responses of firms in the same industry. With respect to questions concerning the nature and perceived importance of intangible assets, there is general correspondence across firms in the same industry. However, across industries there is considerable diversity in the nature of "perceived" intangible assets (i.e., brand names, research and development, licences etc.). This suggests that future, more detailed, studies of intangible assets should control for either industry or particular categories of intangible assets.

A common theme that emerges from answers in the survey is that "acquisition at a cost" and "reliable measurement" represents the necessary criteria to be satisfied before an intangible asset can be recognised in financial reports.

**TABLE 3 EVALUATION OF EXPENDITURES**

(n=17)		
<b>Techniques used to evaluate expenditures on assets</b>		
	Tangible Assets	Intangible Assets
Cost/Benefit Analysis	15	12
Payback	16	14
Net Present Value	16	13
Internal Rate of Return	15	12
Option Pricing Models	1	1

**TABLE 4 CREATION OF INTANGIBLE ASSETS**

(n=17)		
<b>Irrespective of accounting treatment adopted, is an intangible asset created by:</b>		
	Yes	No
Advertising	10	7
Research and Development	6	11
Management Practices and Information Systems	4	13

**TABLE 5 INTERNAL RECOGNITION OF INTANGIBLE ASSETS**

(n=17)		
<b>Recognition of intangible assets in its internal records</b>		
In the accounting systems		10
Separate from accounting records		1
Not at all		6
	<b>Yes</b>	<b>No</b>
Are acquired intangible assets recognised?	14	3
Are internally generated intangible assets recognised?	3	14
<b>How are intangible assets valued for internal reporting?</b>		
Cost		7
Cost less amortisation		14
Discounted cash flow		5

However, these views on recognition need to be contrasted with responses identifying intangibles as critical to firm success assets (e.g., brand names and patents), and responses asking whether certain expenditures create assets (e.g., advertising and R&D). Hence, while there is acceptance of the importance of intangibles to a firm's success, there is reluctance to reveal the value of these assets and to incorporate these assets in performance measures.

As suggested by the above comment, respondents identify significant expenditures being incurred on advertising, research and development. The importance of these expenditures to a firm's success is reflected in responses relating to the perceived importance of the related intangible assets.

For example, the mean response to the perceived importance to the businesses of brand names is 6 (out

**TABLE 6 EXTERNAL RECOGNITION OF INTANGIBLE ASSETS**

(n=17)		
Recognition of intangible assets in its external financial statements.		
Balance Sheet.	15	
Management discussion and analysis.	0	
	Yes	No
Acquired intangible assets are recognised.	15	2 <sup>10</sup>
Internally generated identifiable intangible assets are recognised.	3	14
Acquired intangible assets can be reliably measured.	16	1
Internally generated intangible assets can be reliably measured.	6	11
An active market is required for reliable measurement.	7	10
Separate identification of identifiable intangible assets enhances the information content of financial reports.	12	5

**TABLE 7 ACCOUNTING PRACTICES FOR INTANGIBLE ASSETS**

(n=17)		
	Yes	No
Intangible assets should be amortised.	11	6
Intangible assets should be subject to an impairment of value test.	16	1

of 7), and for patents 5.4 (out of 7). Similarly, significant effort is devoted to the development of management practices and information systems and this is reflected in the perceived importance of management practices and management information systems (respectively 5.5 and 5.4 out of 7). Details of the perceived importance of specific types of intangible assets are presented in Table 1.

For each firm, the mean value of the importance of intangible assets is calculated and compared to perceived competition. The correlation of 0.45 is consistent with intangible assets representing strategies (or the product of strategies) to develop competitive advantages.

Respondents believe intangible assets are more important today than they were 10 years ago, and that they are more critical to developing competitive advantage than expenditures on tangible assets. Whereas 13 respondents identify investments in intangible assets as being more important (equal

or greater than 5 on a 7 point scale) today than 10 years ago, only 6 respondents identify investments in tangible assets as being more important (equal or greater than 5 on a 7 point scale).

Similarly, while 14 respondents believe expenditures on intangible assets are critical (equal or greater than 5 on a 7 point scale) to the firm developing competitive advantage, only 11 firms believe expenditures on tangible assets are critical (equal or greater than 5 on a 7 point scale). These results are summarised in Table 2.

In combination, the results in Table 2 are consistent with depiction by Kaplan and Norton (2001 a and b) of intangible assets resulting from, or being subject to, strategies for developing competitive advantage, and they're becoming increasingly important. It also confirms the appropriateness of incorporating intangible assets into performance evaluation, both internally and externally.

**Management and internal recognition of intangible assets**

A further potential indicator of the nature of intangible assets is provided by the evaluation techniques applied to evaluate investments in such assets. A feature of Table 3 is that firms generally adopt similar practices to evaluating investments in tangible and intangible assets. With respect to investments in intangible assets, the techniques most commonly used to evaluate investments are cost/benefit (12 firms), payback (14 firms), net present value—NPV—(13 firms) and internal rate of return (12 firms). Only 1 firm reported utilising option pricing to evaluate investments in tangible and intangible assets.

Where firms use NPV to evaluate investments, this is commonly undertaken over periods of 3-5 years (6 firms) or 6-10 years (6 firms). Terminal values are generally determined on the basis of EBIT multiples (5 firms) or cash flow multiples (6 firms). The discount rate is generally the weighted average cost of capital for the firm (12 firms).

Notwithstanding the similarity in methods used to evaluate tangible and intangible assets, respondents are reluctant to support recognition of intangible assets. Often critical in the decision to recognise an intangible asset is control of the benefits flowing from the asset, or protection.

A wide range of techniques is used to protect intangible assets (e.g., brand names (15 firms), trademarks (14 firms), patents (13 firms), ownership/vertical integration (13 firms), competitive pricing (12 firms) contracts with distributors (11 firms), litigation (11 firms), quality accreditation (10 firms) and copyright (9 firms)). However, for only 9 firms is the means of protecting the intangible asset included in project evaluation. The cost of protecting the intangible asset is included in project evaluation for only 6 firms.

Reflecting a reluctance to recognise intangible assets, Table 4 reports that 10 respondents recognise advertising as potentially creating an intangible asset, however only six recognise research and development as potentially creating an intangible asset and four

recognise management information systems (MIS) as potentially creating an intangible asset.

Particularly noteworthy in Table 4 is the attitude to management practices and information systems.

Significant resources are devoted to the development of management practices and information systems and, to the extent that it facilitates more effective and efficient management, could give rise to an intangible asset.

For example, of the 11 firms that are perceived as having more integrated operations (equal or greater than 5 on a 7 point scale), 9 standardise management information systems.

This is consistent with management information systems representing an important strategy for co-ordinating and controlling the activities of the firm, and capturing human capital within the firm. However, contrary to expectation, of these same 11 firms, 6 grant significant management autonomy (equal or greater than 5 on a 7 point scale).

Highlighted in Table 5 is the limited propensity for firms to recognise intangible assets in their financial reports. While 10 firms recognised identifiable intangible assets in the internal accounting records, this is generally restricted to acquired assets only.

Internal or management reporting of intangible assets tends to reflect external reporting requirements with the most common basis for recognition being cost, cost less amortisation or discounted cash flow (as a consequence of an impairment in value test).

Consistent with the limited internal reporting of intangible assets, only 6 firms report identifiable intangible assets that are incorporated in performance measures or evaluation.

If intangible assets were capturing information on successful strategies for developing competitive advantage and identifying the performance drivers within the firm, this result would suggest that notwithstanding the promotion of broad based performance evaluation schemes (e.g., Balanced Scorecard), only limited progress has been made in applying these approaches in practice.

### External reporting of intangible assets

Establishing the link between strategies for developing competitive advantage and intangible assets indicates a potential relevance not only to internal users, but also to external users of financial reports. Many Australian firms

discounting the importance of intangible assets, or alternatively, the significance of intangible assets being less understood by share market participants.

For external financial reporting purposes 15 firms (Table 6) recognise identifiable intangible assets in the

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voluntarily disclose such assets with Wyatt, Matolcsy and Stokes (2001) finding that 41% of firms disclose identifiable intangible assets over the period 1993 to 1997. Koh and Godfrey (2001) provide evidence that these disclosures are value relevant for equity investors.

However, there is some scepticism as to whether intangible assets are fully appreciated by equity investors. While 13 respondents believe intangible assets have contributed significantly (equal or greater than 5 on a 7 point scale) to the firm's success, only 8 respondents believe intangible assets contribute significantly (equal or greater than 5 on a 7 point scale) to the firm's share price.

This discord could be attributable to either share market participants

balance sheet, with relevant accounting standards identified as the primary determinant of disclosure. Firms generally recognise acquired identifiable intangible assets (15 firms), and this is supported by claims that for these assets reliable measurement is possible (16 respondents).

In contrast, for internally generated assets, only 6 respondents believe reliable measurement is possible. Seven respondents identify an active market as a prerequisite to the recognition of identifiable intangible assets.

Notwithstanding the reluctance of firms to recognise internally generated identifiable intangible assets in the financial statements, 12 respondents believe that disclosures relating to such assets enhanced the information content of financial reports. One

TABLE 8 IMPACTS OF AMORTISING INTANGIBLE ASSETS

	(n=17)	
	Yes	No
Amortising intangible assets adversely impact your share price.	10	7
<b>Reason for amortising intangible assets adversely impacting share price.</b>		
Institutional shareholders don't understand		1
Small shareholders don't understand		6
Reduced ability to pay dividends		9
Reduced asset value per share		6
<b>Reason for amortising intangible assets not adversely impacting share price.</b>		
Amortisation doesn't impact cash flow		5
Immaterial impact		2
	<b>Yes</b>	<b>No</b>
Amortising intangible assets would reduce the firms' ability to pay dividends	12	5

respondent identifies proprietary costs as a justification for not disclosing such assets.

With respect to the accounting practices adopted for identifiable intangible assets (see Table 7), 11 respondents believe that amortisation is appropriate.

All those not supporting amortisation maintained that it is inappropriate because asset values are not declining. Notwithstanding the attitude to amortisation, respondents agreed that the application of an impairment of value test is appropriate.

A negative adverse share price reaction is an expected consequence of compulsory amortisation by 10 respondents.

The most commonly cited reason is a reduced ability to pay dividends (9 respondents).

Other reasons cited included reduced asset value per share (6 firms), small shareholders don't understand (6 firms) and institutional investors don't understand (1 firm). By comparison, 5 respondents believe that there will be no share price reaction to compulsory amortisation of intangible assets, as

intangibles as being more important in competitive industries where they represent strategies or the product of strategies for developing competitive advantage.

The evaluation of investments in intangible assets largely mirrors that of tangible assets, suggesting that financial reporting practices for these differing classes of assets should not be greatly divergent.

However, a major issue from both a management and financial reporting perspective remains how to ensure exclusivity with respect to asset use, and the associated protection of asset value. This is not necessarily being addressed in project evaluation.

The recognition of intangible assets for internal reporting purposes is not significantly different from that adopted for external reporting purposes. A consequence of this is that intangible assets are typically not recognised in management reports and not included in performance measurement or evaluation.

While the disclosure of identifiable intangible assets is seen as potentially

assets, which is relevant to financial analysts and other external users of financial statements.

Furthermore, the mandatory amortisation of intangibles, rather than impairment of value test, places these accounting practices in conflict with those in the United States. There the FASB has recently mandated the "purchase method" for consolidation (SFAS 141), and imposed an impairment of value test for goodwill and other intangible assets rather than amortisation (SFAS 142).

However it should be noted that interest rates have been falling since SFAS 142 was issued, and intangible asset values will generally have increased, or at least maintained value. In these circumstances impairment of value tests are unlikely to be problematic.

When interest rates rise again, identifiable intangible asset values will fall and impairment of value tests will become highly contentious, especially in a likely environment of poorer operating performance.

The majority of respondents believe that compulsory amortisation would adversely impact share prices. The majority of respondents believe that compulsory amortisation would reduce their ability to pay dividends.

However these responses are difficult to reconcile with findings that sophisticated investors add back amortisation, and share buy backs can effectively overcome dividend constraints.

Some caution must be exercised in interpreting these results. The response rate is very low and this greatly limits the extent to which responses could be analysed, and the potential for making inferences.

Furthermore, to the extent that the survey targeted financial statement preparers, the sample is not representative of all parties involved in the financial reporting process. Finally, variation across industries suggests that future studies of intangible assets should control for either industry or particular categories of intangible assets.

***... the mandatory amortisation of intangibles, rather than impairment of value test, places these accounting practices in conflict with those in the US.***

firm cash flow will not be impacted.

With respect to the ability to pay dividends, 12 respondents state that their firm would have a reduced ability to pay dividends as a consequence of compulsorily amortising intangible assets.

A common theme across these responses is that reliability and economic consequences come to the fore as the determinants of appropriate accounting policies for intangible assets.

This seems to outweigh consideration of the potential value relevance of such information, particularly for performance evaluation.

**CONCLUSIONS**

The survey provides limited evidence of intangible assets having greater significance than 10 years ago. Furthermore, the survey reveals

enhancing the information content of financial reports, such disclosures are limited.

Generally the disclosure of identifiable intangible assets is limited to acquired assets, and these are typically recorded as cost or cost less amortisation, as required by accounting standards AASB 1013 Goodwill, AASB 1015 Accounting for the Acquisition of Assets and AASB 1021 Depreciation.

The majority of firms believe that amortisation is appropriate. Reliable measurement is seen as an impediment to the recognition of internally generated identifiable intangible assets, and potentially to the revaluation of identifiable intangible assets. It is significant that these accounting practices largely ignore the potential to provide information on the value created by management through the development of intangible

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## NOTES

1 Similar results are reported in Francis and Schipper (1999) over the period 1952 to 1994.

2 For example, in an Australian context this has in part arisen as a consequence of amendments to AASB 1008 Profit and Loss that have increasingly required the reporting of losses as part of operating earnings.

3 Within an Australian context a similar situation would probably exist. For example, Singapore Telecommunications Ltd had a market value to book value ratio of 12.1 at 30 November 2001.

4 Loneragan, Stokes and Wells (2000) report an increase in the mean market to book ratio from 1.128 in 1979 to 3.819 in 1997 for a sample of Australian firms.

5 This approach is also suggested by the corporate strategy literature, e.g., Porter (1985).

6 Performance measures may be financial or non-financial depending upon the ability to express the intangible in monetary terms.

7 This reflects the requirements of AASB 1015 Accounting for the Acquisition of Assets.

8 This suggests that respondents are burying intangible assets acquired in goodwill.

9 This is consistent with IAS 38 Accounting for Intangible Assets.

10 This suggests that respondents are burying intangible assets acquired in goodwill. To the extent that the intangible asset is identifiable this is inconsistent with AASB 1015 Accounting for the Acquisition of Assets.

11 Amortisation of intangible assets is consistent with AASB 1021 Depreciation, however respondents may be influenced by recent developments in the United States with respect to goodwill.

12 It is interesting that these beliefs persist, notwithstanding research findings that sophisticated investors add back depreciation.

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