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INTELLECTUAL CAPITAL: THE MISSING ASSET

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ABSTRACT

In the Information Age, merely accounting for hard assets such as machinery no longer seems appropriate. Intellectual capital or soft assets, such as knowledge and skills, are playing an increasingly important role in the current global economy. However, this paper argues that the recording of these soft assets on balance sheets will only be possible if a universally accepted method of measuring them can be created. Some suggestions for such measurement are explored and arguments both for and against accounting for intellectual capital are investigated. The paper concludes by arguing in favour of more research.

INTRODUCTION

Since the 1970s, a revolution has occurred as society has moved into the post-industrial era. Economies are no longer dominated by industrial machinery and are more concerned with exploiting the new information technology available to ensure that business entities retain a competitive advantage over their rivals. This Information Age is far more volatile than previous economic eras and companies need to develop increasingly more sophisticated and innovative products via the creative thinking and brainpower of their employees. They must also ensure that they retain customer loyalty. Knowledge has become the company's chief resource and it is the ability of a company to create, transform and capitalise on that knowledge that will deliver competitive advantage. King and Henry (1999) reported that bankers today are making loans using intellectual capital (IC) as collateral and, as millions of euro are sunk into 'dot.coms' (Internet-based companies) and the high-tech sector of the economy, it is essential that lenders and other users are provided with relevant information about

the underlying assets.

These changes in the economy have important implications for accounting.

> The old world was obsessed with counting stuff – nuclear warheads, battleships, armoured divisions, military personnel, durable goods purchases and machine tool orders. The networked economy is driven not by what you can count, but by what you know. The traditional reliance on hard assets has been replaced with a new premium on soft ones. (May, 1997, p. 91)

Oppenheim (1998) outlined the results of a survey carried out by Reuters, which reported on the results of 500 telephone interviews with senior managers in UK companies. The main conclusions were that one in four UK companies stated that information was its most important asset; 50 per cent said that it was more important than trade names and registered trade marks; and one in 10 valued it more highly than its staff. The report also concluded that companies wanted to capitalise their information expenditure but, at present, only one in six actually did so. Twenty five per cent of respondents said that they were unable to capitalise information assets, because they found it too hard to identify their value. However, financial accounting has so far failed to generate a sufficiently reliable measurement base for such assets to enable them to be recorded on balance sheet.

The International Federation of Accountants (IFAC) took up the issue in October 1998 by publishing an introductory study of the subject, albeit with an emphasis on its management accounting implications. As it reports (IFAC, 1998), the accounting challenge is to invent better tools for managing investment in people skills, information bases etc. and to create some form of accounting measurement that can differentiate between those entities in which IC is appreciating and those in which it is depreciating.

The main purpose of this paper is to investigate the financial reporting of this missing asset, both on and off balance sheet. The paper will also highlight some of the suggested IC measurement bases to date and discuss the experiments of several entities in publicly disclosing information about these assets, albeit in supplementary form. In addition, it looks at the roles of both the financial and management accountant with regard to IC assets and concludes by suggesting that, although without an accounting standard on the topic it is unlikely that these assets will appear on traditional

financial statements, there is much work that can be done by accountants in this area.

INTELLECTUAL CAPITAL DEFINED

Before investigating the various accounting issues that IC raises, it is important to clarify exactly what is meant by the term. IC is often confused with intellectual property, which is legally-based and reflects property rights in items such as patents, trademarks and copyrights. Often, these are already recorded at cost on the balance sheet. However, such cost figures do not always reflect the true value of these assets, often understating them. Intellectual property encompasses no more than a fraction of what is understood by the broader term of IC. Larry Prusak of Ernst & Young has defined IC as 'intellectual material that has been formalised, captured and leveraged to produce a higher-valued asset' (Stewart, 1994, p. 68). The Society of Management Accountants of Canada (SMAC, 1998, p.4) attempted a definition of intellectual assets as follows:

> In balance sheet terms, intellectual assets are those knowledge-based items, which the company owns which will produce a future stream of benefits for the company.

This definition would therefore incorporate information technology, management and people's skills as well as extending to patented intellectual property. It also means a complete rethink for management, requiring it to view the company, not from an industrial management perspective, but from one based on knowledge transformation. IFAC (1998) identifies the differences in approach. It believes that the organisation should see its people as revenue generators, whose primary task is to convert knowledge into intangible assets rather than simply as costs or factors of production. In addition, the knowledge-based organisation will be ideas- rather than machine-driven and, instead of the law of diminishing returns applying, there will be increasing returns to acquiring knowledge.

The literature (Edwards, 1997; Atrill, 1998; IFAC, 1998) generally identifies three types of IC:

Human capital

This incorporates factors such as know-how, education, vocational qualifications, work related competencies and entrepreneurial innovation.

Customer capital

This includes assets such as brands, customer loyalty, licensing agreements, franchising arrangements and distribution channels. It is sometimes referred to as relational capital.

Organisational capital

This represents the organisational capabilities developed to meet market requirements, such as patents. It also represents the knowledge that has been captured within the structures and culture of the organisation. It is sometimes referred to as structural capital and could include items such as manufacturing processes, standard operating procedures and databases.

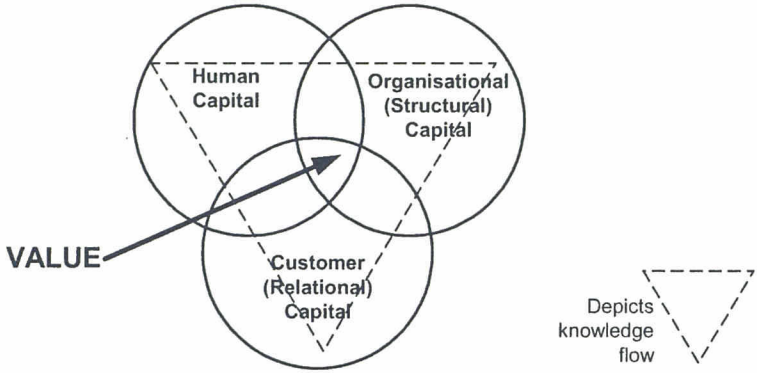
Considerable literature on human capital was developed in the 1970s – human asset accounting was one of the most topical academic subjects of that era. Many writers (Likert, 1967; Lev and Schwartz, 1971; Flamholtz, 1972) attempted to place a value on the human assets in the organisation and some companies even incorporated the values on the balance sheet. However, this accounting approach basically foundered on the difficult issue of obtaining reliable measures of those assets and of ensuring that organisations did indeed have control over the future economic benefits deriving from their employees' efforts. Edwards (1997) argued that human resource accounting never caught on because valuations were being placed on employees without any clear idea of how they would fit into the traditional accounting system (numbers in search of a use). What were needed instead were uses in search of numbers. The only real success in these islands was the capitalisation of football registration fees as a surrogate for the value of a player in some of the larger football clubs (Morrow, 1995). It could also be argued that the writers of the 1970s were ahead of their time and that the Information Age had only started to emerge in that decade. However, the objective of isolating purely human capital was too narrow an outlook. Hope and Hope (1998) argue that human assets are the mainspring of new ideas and innovation but it will be other forms of IC that will provide the systems and channels to ensure that value is created.

There has also been extensive research on brands (Tollington, 1998) and patents, trademarks and copyrights (Williams, 1986), but again these research areas tend to ignore organisational structures, such as management philosophy and corporate culture, which enable value to be derived from these assets. Nevertheless, Sveiby (1997) argues that accountants must play a role in evaluating IC assets. Accountants have the skills to evaluate and integrate knowledge within their organisations, to direct and control the knowledge transformation process and to evaluate, report and audit the results of these processes on an ongoing basis. Extensive work has already been carried out in some countries to develop systems that can record and measure organisational IC assets within an overall IC framework (see Bontis, 1996; Lynn, 1998a, 1998b, 2000a; Brennan and Connell, 2000; Stewart, 2001).

THE INTELLECTUAL CAPITAL FRAMEWORK

A number of companies are currently attempting to experiment with IC frameworks. One of these frameworks, the 'value platform' (illustrated in **Figure 1**), was developed by financial executives from a group of companies as diverse as Skandia AFS in Sweden, the Canadian Imperial Bank of Commerce (CIBC), and Armstrong World Industries and the Dow Chemical company from the US. The model recognises three main types of IC and argues that human capital acts as the building block from which one can construct the organisational capital of the firm and that both human and organisational capital then go on to interact and create customer capital. At the centre of the three forms of capital lies the financial capital or value created by the interaction of these three components. The greater the interaction, the higher the value that can be placed on the financial capital created.

Figure 1: The Value Platform



Source: Adapted from Edvinsson and Malone (1997)

Human capital refers to the knowledge and know-how developed by the members of the organisation. This will incorporate the skills and expertise that they have acquired. Accountants need to develop an inventory of employee competencies, determine what future competencies should be acquired and develop a system that will deliver the required knowledge and skill. The development of an appropriate evaluation and reward system would also be necessary to align individual objectives with the overall strategic objectives of the entity. Organisational capital can be captured in the form of legal rights (such as patents and copyrights). However, the end product will also consist of improvements in organisation efficiency and will need to be measured in terms of cost savings, revenue growth or improved innovative capabilities as measured by a variety of individual and team based performance indicators. Customer capital includes links with outside organisations and will encompass customer loyalty, goodwill and good supplier relations. Petrash (1996) argues that the key to customer capital is the perception of value obtained by a customer from doing business with a supplier of goods or services.

ACCOUNTING FOR INTELLECTUAL CAPITAL

Having defined IC and how it has developed from the interaction of three separate elements, the issue of accounting for this missing asset can now

be explored. There is widespread agreement that the objective of financial reporting is to satisfy the information needs of users. Chapter 1 of the *Statement of Principles* (SOP) (ASB, 1999) clearly requires financial accountants to provide investors with information that is useful for decision-making purposes. Chapter 2 requires information to be relevant, but how can a dot.com or high-tech company provide such information if it cannot incorporate its intangible assets on the balance sheet? A business reporting expectations gap appears to have developed. There have been several attempts to measure IC assets but, at present, such forms of measurement are still in an embryonic stage. Under the existing accounting framework (ASB, 1999, para. 4.6), an asset may only be recorded on the balance sheet if it could result in the reporting entity obtaining 'rights or other access to future economic benefits controlled by the entity as a result of past transactions or events'. The three key components of this definition are now investigated further.

Future Economic Benefits

These are described as the capacity to provide benefits to the entities that use them. Grundy and Dobinson (1980), looking at one aspect of IC, human capital, felt that expenditure on the recruitment, development, training and maintenance of staff must have a future benefit component. They argued that should a company have to replace the entire workforce at the same time it would take several years to return to normal levels of productivity.

Control

The entity controlling an asset can, depending on the nature of the asset, exchange it, use it to provide goods or services, charge others for using it, use it to settle liabilities, hold it or distribute it to owners. By controlling future economic benefits, the entity can enjoy these benefits and deny, or at least regulate, the access of others to those benefits. Obviously, a company can never control its human capital, as employees, having worked an appropriate period of notice, are free to leave whenever they like and, in the modern labour market, loyalty to the firm is an almost alien concept. However, once human capital interacts and creates structural capital/customer capital, then a company has a legal right to economic benefits generated by the skills or brainpower of its current employees. Examples would include enhanced reputation and market penetration.

Past Transactions and Events

The transaction or event that gives the entity control over the future economic benefits must have already occurred at the time of measurement. It could be successfully argued that the transactions and events leading to the creation of human capital, organisational capital and customer capital must have already occurred. Customer loyalty, for example, must be a result of good service hitherto provided.

Provided the value created in the interrelationship of the three types of capital does result in the creation of an asset, the next problem is to ensure that the asset passes the two recognition criteria set out in chapter 5 of the SOP, namely:

i) Is there sufficient evidence of future economic benefits? and
ii) Can the asset be reliably measured?

The first test could be answered by arguing that the value of the IC is the enhanced share value of the organisation. However, the real difficulty lies in attempting to measure IC reliably, particularly its components. To date, no generally acceptable method of valuation has been devised. At present, the only accounting standard in the UK and Ireland that covers intangible fixed assets is FRS 10 *Goodwill and Intangible Assets* (ASB, 1997). That standard follows the principles laid down in the SOP and insists that only if a reliable market exists for a particular intangible asset may that asset be recorded on a balance sheet. According to the standard, an asset may be created only in the case of those intangible assets for which the market value can be reliably measured and which are separable from goodwill. Effectively, this results in all purchased IC being recorded as part of goodwill, with no value being placed on inherent or home-grown IC. There is therefore a need for much more experimentation to take place before an acceptable measurement base can be found. Since the interest in IC began at the beginning of the 1990s, there have been many suggestions as to how companies should measure intangible assets; however, for the purposes of this paper only some of the better-known suggestions are considered. For an appreciation of other frameworks and proposals, see also Brennan and Connell (2000), Upton (2001) and the website of the International Center for Applied Studies In Information Technology (ICASIT, 2002).

MEASUREMENT OF INTELLECTUAL CAPITAL

Market or Value based approach

One simple approach is to argue that the value of IC is reflected in the difference between the market value of a company and the balance sheet value of its net assets. In many cases, the market value of a company is considerably higher than the book value of net assets on the balance sheet. However, there are considerable problems in adopting this approach, not the least of which is the fact that many of the tangible assets are valued on the balance sheet well below their current market values. In addition, share prices fluctuate on a daily basis but this does not necessarily reflect a similar change in the value of IC. An example of this would be the over-valuations of some of the earliest dot.coms to go public and the subsequent and dramatic drop in their share values. In the case of lastminute.com, the share price fell by 90 per cent in less than 18 months, yet in the same period there was little change to the company's intellectual assets. The approach also values IC as one asset and no attempt is made to value the separate elements therein. Furthermore, the current financial accounting model does not attempt to value a firm in its entirety. Instead, it records each of its severable assets at an amount in accordance with extant legislation and the financial accounting standards. The market, however, would value a company in its entirety as a going concern. So the figure for IC would differ simply by the adoption of different accounting policies across national boundaries. For example, a company that capitalised development costs would have a lower IC value than a company that has written off development costs directly to profit and loss.

Tobin's Q

This approach, originally developed to predict investment behaviour, uses the value of the replacement cost of a company's assets to predict the investment decisions of the firm, independent of interest rates. The 'q' is the ratio of the market value of the firm (share price x number of shares) to the replacement cost of its assets. If the replacement cost is lower than its market value, then a company is earning monopoly profits. Technology and human assets are typically associated with high 'q' values. Stewart (1997) argues that, as a measure of IC, Tobin's 'q' identifies a company's ability to get unusually high profits because it has something that no other company has. However, this method still suffers from the same problems as the market-based approach and is subject to the same exogenous variables.

Value Chain Analysis

This method identifies the elements of organisational processes and activities, and links them to the creation of value by the firm. Processes are structured and measured and sets of activities designed to produce a specific output for a particular customer or market. Identifying the firm's value-creating process – the way in which knowledge is created, integrated, transformed and utilised – will require a horizontal view of the organisation and the cross-functional relationships that exist within it. A model is first established using process analysis and the activities within each process are subsequently analysed. In this way, management can begin to assess the flows of information and knowledge and characteristics of knowledge transformation between departments, within divisions and throughout the organisation. In some cases, the end product of the knowledge management process can then be identified and valued as:

- A patent, consulting process or trademark
- An improvement in organisational efficiency as measured by cost savings, profits, revenue growth and return on investment
- Improved innovative capabilities of the firm, measured by a variety of individual and team-based performance criteria.

Robinson and Kleiner (1996), however, pointed out that the impact of less tangible forms of IC, such as improved internal communication, shows up not on the balance sheet but at other points in the value chain. As a result, values are not attributed to individual aspects of IC on the balance sheet.

The Asset Value of Skills Method

Sheedy-Gohil (1996) proposed a method by which the asset value of skills could be calculated. The formula for this is as follows:

> Skill asset value =
> Cost of skills x average years of service x retention rate

The cost of skills is determined by salary, not training. This method takes a fairly narrow view of IC, as it cannot be equated fully with the skills and knowledge attained. However, it does take into account the mobility in the labour market of those workers who have sought-after competencies. The prevalence of head-hunting in the finance industry is an example of the value companies place on the knowledge of certain individuals. Nevertheless, this method completely ignores both customer and structural capital, focussing solely on human capital.

Calculated Intangible Value (CIV)

This method has been developed by NCI Research to calculate the fair market value of the firm. It calculates the excess return on hard assets, then uses this figure as a basis for determining the proportion of return attributable to intangible assets. The calculation is demonstrated in **Table 1** using Stewart's (1997) example from Merck & Co. There are three problems with this approach. Firstly, it adopts the industry average Return on Assets (ROA) as a basis for determining excess returns, and, as averages tend to suffer from outlier problems, excessively high or low ROAs may result. Secondly, the company's cost of capital will dictate the Net Present Value (NPV) of intangible assets. Using the industry average to counter this will result in the same problems as emerged with the adoption of an average industry ROA. Thirdly, it is not possible to separate out IC from goodwill using the resulting value; therefore this method fails to evaluate the individual components of IC.

Skandia approach

One of the pioneers of reporting the hidden IC asset of its business has been Skandia, a large Swedish financial services group. Its approach is closely related to the balanced scorecard developed by Kaplan and Norton (1992). Skandia has developed a model, referred to as the Skandia Navigator (Skandia, 1994). The model reflects four key dimensions of the business: Financial Focus, Customer Focus, Process Focus and Renewal and Development Focus. At the heart of all four is a further dimension, the Human Focus. Each of the five dimensions then has critical success factors that are quantified in order to measure change over time. The indicators used for the financial focus are largely represented in monetary terms. Customer focus concentrates on assessing the value of customer capital to the organisation and makes use of both financial and non-financial indicators. The measures used for the process focus emphasise the effective use of technology within the organisation. They tend to monitor quality and quality management systems, but also include some financial ratios. The renewal and development focus attempts to capture the innovative capabilities of the organisation, measuring the effectiveness of its investment in training and its expenditure on research and development (R&D). Finally, the fifth dimension includes measurements that reflect the human capital of the organisation and how those resources are being enhanced and developed. Skandia has applied the process to a number of individual units within the group. One example is Skandia Real Estate, one of Sweden's largest property companies, and this is illustrated in **Table 2.**

Table 1: How to Calculate CIV

	Merck and Co
Stage One	Calculate average pre-tax earnings for three years – $3.694 billion.
Stage Two	Go to the balance sheet and get the average year-end tangible assets for three years – $12.953 billion.
Stage Three	Divide earnings by assets to get the return on assets – 29 per cent.
Stage Four	For the same three years, find the industry's average ROA (this method will not work if a company's ROA is below average). The average ROA for pharmaceuticals is 10 per cent.
Stage Five	Calculate the "excess return". Multiply the industry's average ROA by the company's average tangible assets – 10 per cent x $12.953 billion. This is what the average drug company would earn from that amount of tangible assets. Subtract that from the company's pre-tax earnings, which in the case of Merck would give an excess of $2.4 billion. This is how much more that company earns from its assets than the average drug company.
Stage Six	Calculate the three-year-average income tax rate, and multiply this by the excess return. Subtract the result from the excess return to get an after-tax figure. This is the premium attributable to intangible assets. The premium for Merck, with an average tax rate of 31 per cent, is $1.65 billion.
Stage Seven	Calculate the NPV of the premium. This is achieved by dividing the premium by an appropriate percentage, such as the company's cost of capital. Using an arbitrarily chosen 15 per cent rate, the calculation yields a figure of $11 billion for Merck. This is the CIV of Merck's intangible assets – the missing asset that doesn't appear on the balance sheet.

Source: Adapted from Stewart (1997)

Table 2: Intellectual Capital Report – Skandia Real Estate

	1996	1995	1994
Financial Focus			
Direct yield (%)	6.15	6.00	6.64
Net operating income in millions of Swedish Krona (MSEK)	1,215	1,258	1,399
Market value (MSEK)	20,092	20,702	21,504
Net yield (%)	–0.62	5.06	4.44
Customer Focus			
Satisfied customer index (max. value = 100)	58	56	n/a
Average period of renting out property (years)	8.6	8.5	n/a
Average rent (Swedish Krona per square metre)	960	970	1,041
Telephone accessibility (%)	71	60	n/a
Human Focus			
Employee turnover (%)	10.1	7.9	7.7
Average years of service with company	10.0	10.1	10.2
College graduates as a percentage of total office staff	32	31	31
Process Focus			
Occupancy rate measured by area (%)	91.8	89.7	89.3
Occupancy rate measured by financial value (%)	94.9	93.0	91.2
Net operating income per square metre (SEK)	569	590	657
Renewal and Development Focus			
Property turnover: purchases (%)	3.1	3.2	0.8
Property turnover: sales (%)	1.1	6.1	0.4
Change and development of existing holdings (MSEK)	311	333	313
Training expense/administrative expense (%)	1.0	1.5	1.0

Source: Skandia Group (1999a)

Once the key measures of success in all five dimensions have been identified, they are weighted according to their importance and a total score, out of 100, is obtained for each dimension. All five scores are combined, and an average figure is calculated in order to obtain a single, summary IC index, which will be a number between 1 and 100. This final number then provides a measure of the efficiency of intellectual assets that can be related to traditional measures of efficiency and monitored on an annual basis. The choice of measures will be specific to the company and can be designed for each segment of the business.

Although the Navigator is widely regarded as one of the pioneering IC measurement models, it is not without its critics and Bontis (2001) highlighted some of its perceived shortcomings. These were the inclusion of computers in the structural capital variables, implying that a computer automatically adds value whereas that would depend on the quality of both the information being input and the software, and also the fact that Skandia's approach does not demonstrate the dynamic flows of information within the organisation, as the measurements are mainly static in nature.

Skandia's Navigator is an example of the Direct Intellectual Capital (DIC) method which measures these assets by first identifying their various components. Two other Swedish companies, Celemi (consultancy services) and Ericsson (telecommunications), have created their own DIC methods – the Intangible Assets Monitor (Celemi, 1999) and the Cockpit Communicator (Ericsson, 2001) respectively. Another Nordic consultancy company, Ramboll from Denmark, has developed its own DIC method – the Holistic Company Model (Ramboll, 2001). Petty and Guthrie (1999) found that the Nordic nations stand out as pioneers in this field.

THE REPORTING OF INTELLECTUAL CAPITAL

Despite the various different methods proposed for measuring IC, there seems to be no movement in the financial reporting of these assets within the balance sheet. Skandia is often cited as the leading exponents of accounting for IC, but a quick look at their financial statements shows that they differ little from those of any other company. Indeed, it was stated in the 1993 Skandia Supplemental Annual Report that it did not see an absolute need to integrate exact numbers on the balance sheet for IC items (Skandia, 1993). What it has done, however, is to make its measurements

of IC 'publicly available in an annual Intellectual Capital Report which complements the Annual Report and Accounts' (Tapsell, 1998, p. 41). Skandia is currently working on a project called Universal Networking Intellectual Capital (UNIC), one of the purposes of which is to move into the third generation of IC by the capitalising of what they call 'thoughtware'. Their intention is to move from the current position of evaluating the importance of IC and the development of an IC index to capitalising it on balance sheet (Skandia, 1999b). According to Lynn (1998a), 42 other Swedish companies were providing similar information in their 1996 reports, although this would appear to be, as with Skandia, in a mainly narrative format.

Lynn (1998a, p. 11) suggested one method by which accountants could approach the matter of including IC assets on balance sheet when she attempted to categorise different types of IC into debits and credits:

> Data which has been given structure constitutes information, while purposeful consumption and use of information comprises knowledge. By definition IC represents knowledge transformed into something of value to the organisation. Intellectual assets or knowledge assets are interchangeable terms for the individual products of this knowledge transformation. Thus in accounting terms, intellectual assets are the "debits" – the individual assets such as patents or intellectual property, whereas IC is the "credit" balance – or total organisational wealth (equity) invested in all intellectual assets. The key enablers of this dynamic knowledge transformation process are the people, technologies, and structures of the organisation.

She goes on to say (p. 12) that the skills and competencies of employees are treated as an expense (salaries and wages) rather than being treated as assets and capitalised. However, as these employees 'represent future benefits for the organisation' they 'should be amortised over time. The amortisation cost is not necessarily equal to employee cost, since salary and training in the early years may reap large benefits in later years'. In other words, unlike traditional assets, IC assets can appreciate over time. Parkes (1997, pp. 30–31) also feels that it is this continuity capability that makes accounting for IC so essential. 'Having the necessary resources, skills, information, and operational infrastructure available and in suitable condition for the entity to continue to operate' is a crucial issue. He feels 'it may be necessary to account for appreciation, as well as depreciation, in future'.

However, not everyone agrees that financial statements need to reflect IC. Brown (1997, p. 45) states that Microsoft, 'America's brainiest company', is against accounting rules being changed to reflect IC. This is from a company that, in 1997, had physical assets of '$10 billion, while its market value was $87 billion' (Tapsell, 1998, p. 36). Rutledge (1997, pp. 43–44) makes two criticisms of the principle of including IC assets on the balance sheet. The first is that 'knowledge was not invented in our lifetimes'. The second point challenges the proposition that IC is becoming so valuable that it renders balance sheets obsolete as a measure of a company's value. Rutledge claims that

> balance sheets were never intended to measure the value of a company, and they are not used for that purpose by serious investors. At best, balance sheet measures give an investor a rough idea of the value that can be realised by killing a company, breaking it up, and selling it in pieces, and then only after careful scrutiny. It's like saying the value of a human being is $2.89, because that's all the component chemicals in our body would fetch in the marketplace. The value of a business as a going concern is determined by its cash flows or profits, not by its assets.

Booth (1998, p. 27) agrees with this second point, and argues that the balance sheet should 'remain a record of the amounts invested in the company, with the difference between the firm's value and the invested capital being the market value added'.

Stewart (1994, p. 74) raises the important issue of guidance from the regulators, claiming that

> managers said they use and treasure information about customer satisfaction, R&D productivity, and product and process quality, but they do not want to disclose it to parade their IC, as on a balance sheet, fearing they would give away competitive secrets or attract litigation from disgruntled investors.

Financial analysts and investors reported that they want the information too, but fear being misled. 'In the absence of reporting standards, they worry that it might be subjective or that data compiled by GM would not be comparable with figures from Ford' (Stewart, 1994, p. 74). On the subject of standards, Burnett (1988, p. 159) felt that SSAP 13 *Accounting*

for Research and Development (ASC, 1977, revised 1989) should be revised again.

> It should state specifically that the development of IC falls within the scope of the standard and can be reflected in the balance sheet at the lower of depreciated cost and recoverable amount.

Without more specific guidance on the subject, there is a danger that companies will adopt an accounting solution that avoids the creation of large amounts of goodwill.

A two-day public meeting was held in April 1996 at the Securities and Exchange Commission (SEC) to discuss financial accounting and the reporting of intangible assets. However, there was no consensus about what needed to be done, although there was general agreement that financial statements do not do a good job of reflecting IC (Barlas, 1996). Under traditional historical cost accounting, the Accounting Standards Board (ASB) will have considerable difficulty in developing an accounting standard on the topic, as clearly IC will fail one or both of the recognition criteria under the SOP. The current value approach to fixed assets is more reliant on activities than transactions, and therefore would overcome some of the limitations placed on measuring IC by the historical cost method. Financial reporting would need to move away from its current dilemma in promoting a choice between historical costs and current values and embrace wholeheartedly a current value approach. Only then will it be possible to start to develop a reliable measure of IC and, until that time, it will be necessary to use other methods of reporting IC in the annual report. The paper now looks at some of the suggestions of how this can be done and also at the challenges that IC poses for management accountants.

THE ROLE OF ACCOUNTANTS WITH REGARD TO INTELLECTUAL CAPITAL

If, following the arguments outlined in the previous section, the notion of intellectual assets appearing on financial statements is set aside, there are still a number of challenges left for both financial and management accountants. As far as the external reporting of IC assets is concerned, Wallman (1995, p. 85) argues that the balance sheet could become a

> limited-purpose, almost anachronistic statement. By consigning the balance sheet to the status of an antique, we are ignoring the needs of a broad array of financial statement users, including users such as creditors, who increasingly are lending on soft assets.

However, he is one of several writers who think that this entire debate is too narrow. He considers that the whole issue of financial reporting needs to be reassessed, as it is not just a matter of what goes on the balance sheet (see also Beattie, 2000). He proposed (1996, p. 144)

> a move away from a model that primarily relies on black and white recognition in the financial statements. What is required is a move towards a model where financial statements and related disclosures are viewed more as different layers of information – just as a finely textured colour picture can provide more information than a black and white representation. Under this approach, instead of starting with the question of whether an item must be recognised in the financial statements, the first question would be whether an item should be part of the firm's financial disclosure, with a progression then to a discussion of the appropriate layer in which the item should be reported. Such a framework will be useful in progressing beyond the current recognition versus non-recognition debates.

Roslender and Fincham (2001) suggested a method by which information about certain IC assets could be communicated to stakeholders via a yearbook. This yearbook would contain a series of self-appraisals by the employees of a company, from the most senior levels of management to the newest recruits, which would consist of accounts of the education, training and development they have received throughout the year and how they feel it has benefited them and the organisation. Skandia has continued to communicate details of its IC assets, both externally and internally, through a series of imaginative IC supplements (Mouritsen, Larsen and Bukh, 2001). Similarly creative methods of communication are also taking place in Denmark (Mouritsen, Bukh, Larsen and Johansen, 2002) and once again in this area the Scandinavian countries are taking the lead. Elsewhere, the reporting of IC is not so comprehensive; for example, it is more piecemeal in Australia (Guthrie and Petty, 2000) and very limited in Ireland (Brennan, 2001).

Roslender (2000, p. 37) also feels that the dispute about whether IC should appear on the balance sheet is too limited and that there is 'broader strategic management significance' that requires a management accounting perspective. There are therefore a number of challenges for the management accountant. Having classified, identified and used some method to measure intellectual capital, it will also be the role of the management accountant to ensure that management is aware of how best to use these assets to their maximum levels of efficiency, thereby adding maximum value to the organisation.

Lynn (1998a, p. 12) does not see a problem in accountants taking on these new challenges:

> Management accountants are professional knowledge workers. They manage and develop the information systems for organisations, helping to set and translate strategies into operational objectives and applications. They also participate in establishing and using structures (performance evaluation schemes) to evaluate system outcomes. Thus, by its nature, management accounting should be factored into the design of strategies to manage intellectual capital, from identifying and auditing the inventory of intellectual capital, through to the evaluation of the value added by intellectual capital.

Lev believes that, to date, 'accounting hasn't kept pace with the rise of intangibles' (quoted in Gross, 2001, p. 30D). Accounting is always slower to react than the market, which responds immediately to new company initiatives. He goes on to state that 'what's required is new accounting, a new measurement system, which should be instituted internally within organisations'. Lev also feels (quoted in Bernhut, 2001) that the fact that there are difficulties in valuing intangible assets should not be used as an excuse to ignore them altogether. Many measurements can be carried out – for example, tracking investment in training and seeing whether, as a result of training, employee turnover decreases or productivity increases. Booth (1998) concurs with this last point. He points out (p. 28) that training departments 'tend to be viewed as overheads and a target for cost reduction. A performance model, linking financial performance to investment in intangibles, can help the departmental manager argue the case for the necessary investment'. Lynn (2000b) suggests that, in the absence of hard measurements, proxy indicators (e.g., customer complaints and satisfaction surveys) should be used. She states that use of such

indicators is better than ignoring intellectual capital altogether.

According to the final report of the Measuring Intangibles to Understand and Improve Innovation Management (MERITUM) project (2001), companies cannot simply implement a system to manage IC without thorough groundwork, such as educating and motivating the workforce. 'This will demand time and requires continuous missionary effort throughout the project' (p. 42). Other key findings of MERITUM (a 30-month project involving six European countries) were that there is no 'one size fits all' system of measurement and that firms must adopt frameworks to suit their own circumstances, that the identification and measurement of intangibles must be followed up by action and that the external reporting of intangibles is essential if there are to be improvements in the efficiency of the allocation of resources.

CONCLUSION

Undoubtedly, accounting for IC will never be an easy issue to resolve. Whether or not the balance sheet is the right vehicle to convey how valuable an asset IC is remains unclear, and until a relevant standard is issued this method cannot be attempted. However, it is clear that management accountants have the expertise and skills to measure and manage IC. Perhaps financial accountants in other countries could follow the example of Skandia and others by publishing a separate report on the subject, so that stakeholders can be made aware of all the elements contributing to the overall market value of the company.

One would not like to see this issue become the dead-end that human resource accounting became in the 1970s. Human resource accounting failed to develop, primarily because it never managed to advance beyond unresolvable debates over methods of measurement and disclosure. In the end, this led to widespread loss of interest in the topic. One way to avoid this happening with the debate over IC is to conduct much more theoretical work and experimentation before attempting to devise a universally acceptable measurement base. Only then can this whole issue be moved forward, with all companies using similar reporting practices for IC.

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