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Market Assessment of Intellectual and Knowledge Company: Through the Lens of Revaluation of Assets

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This paper presents a conceptual analysis and discussion on the premium company's value of intellectual and knowledge assets. The difference between the market value (including the intangible value) and book value (tangible value) has generally been determined as organisation's intellectual or knowledge assets, which have taken a major position in the business and financial performance. This developing study provides a further analysis to the differences between the market value and book value by proposing two scenarios and based on a context whereby market fluctuation is considered and revaluation of assets is allowed.

Field of Research: Management, Finance, Market Value

1. Introduction

In the interactive and knowledge economy, countries are seen positioning themselves as high-tech and business innovation hubs. The fortunes of companies are rising and falling based on their direction and acceptance of the economic growth and how wealth flows. Several authors suggested that the usual traditional financial and economic models to measure performance had no longer offer reliable predictions to capture the intangible assets of a company in the knowledge economy (Bradley, 1997; Germeraad and Morrison, 1998; IFAC, 1998; Godet, 2000; Sharma, 2000; Massie, 2001; Tollington, 2001). A widening gap between accounting book values and market values due to intangible assets, such as brands not being disclosed, is evidenced (Tollington, 2001). Yet, the models have not yet been adjusted to recognise the changing origins of wealth creation.

Wealth flows have been argued not just about financial (Blue, 1998; Teo, 1998; Cariner, 2000; Bernhut, 2001) as well as not merely from owning physical assets as exemplified in the case of Microsoft (Gnuschke, 2001). Society and experts have always placed a premium on knowledge as a key resource of business and its emphasis on creation, enhancement, organisation and leverage will continue to be the power for strategic success, economic growth and performance (Wiig, 1997; Malhotra, 2000; Clarke and Rollo, 2001; Kululanga and McCaffer, 2001), innovations, revenue and competitive advantag (Royster, 1997; Dzinkowski, 2000; Seetharaman, Sooria, and Saravanan, 2002). Therefore, the knowledge-based economic focus is taking more importance in global competition and in learning societies, where information will be of the greatest value and adds new wealth (Tofler, 1991; Drucker, 1993; Fassin, 2000; Ngiam, 2002).

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Globalisation of markets, technologies advances, the unpredictability and volatility of the business environment makes investors increasingly homogeneous. Organisations are responding by looking into their strategic use of information to compete for investor-share and to harness intangible resources at the international, national and corporate levels (OECD, 1996; Booth, 1998; Andrade-Jimenez, 2000). Executive managers are realising that the corporate assets, which provide value-added advantage to a company, are not what they make but what they know (Haapaneimi, 1997; Lewison, 2001).

Intellectual and knowledge assets have thus taken a major position in the repertoire of businesses. The difference between the market value (including the intangible value) and book value (tangible value) has generally been determined as organisation's intellectual or knowledge assets. Australia has not neglected the concern regarding the gap between market value and book value. The country has recognised the importance of intangible values to remain competitive in the knowledge economy. This paper provides a further analysis to the differences between the market value and book value from a context whereby market fluctuation is considered and revaluation of assets is allowed.

2. Literature Review

2.1 Market Value and Book Value

Book values as reported in the financial statements correlate poorly with market capitalisation (Davies and Waddington, 1999; Petty and Guthrie, 1999). The stock market is pricing shares largely above asset value; these values have a lot of unexplained worth (Gottliebsen, 1999; Gradner, 2001). The market value of an average organisation at times could be about three to ten times the balance sheet value. The gap for knowledge-intensive companies or companies with intellectual and service capabilities is even greater, over ten times (Quinn, 1994; Manchester, 1999). Bounfour (1998) stressed the importance of disequilibrium between market and book values for most companies. Physical capital is normally equivalent only to a quarter of the company's market value (McRae, 1996). Dzinkowski (2000) estimated 50% to 90% of the value created by a company is not from the management of traditional physical asset but is derived from the management of intellectual capital. Thus the intellectual capital in a corporation is worth several times its tangible book value (Stewart, 1994).

For some companies with no physical assets, a widening gap of market capitalisation is getting more concerning. Particularly, a huge value gap and distortions exist even in mergers and acquisitions (Seetharaman, Sooria, and Saravanan, 2002). Another concern is also associated with the value the marketplace puts on the company's intellectual compared with its capacity to leverage the value in its marketplace (Sullivan, 1998). Many dot-com and start-up companies' market values were based almost entirely on innovations that investors hoped would generate non-linear returns on investment (Gnuschke, 2001). If the market value is higher than the book value, it may be perceived as an indication that the company is doing a much better job managing the intangible drivers of value in the business.

Some researchers have indicated that the substantial difference or gap between a company's market value and book (balance-sheet) value is implicitly the extra value the market places on the intellectual and service value of the company -- that is, the amount knowledgeable buyers would presumably be willing to pay to reproduce its intangible assets, if they could buy them, or the intellectual capital (Quinn, 1994; Davies and Waddington, 1999; Brennan and Connell, 2000; Dzinkowski, 2000; Howes, 2000; Seetharaman, Sooria, and Saravanan, 2002). Lambert (1999), Malhotra (2000) and Steinberg (2001) asserted that intellectual and knowledge asset has the potential to be the most valuable primary asset of a company. Knowledge has influenced stock prices, competitive advantage, productivity, and creation of new wealth (Keen, 1997; Imparato, 1999; Golub, 1999; Little, 1999; Petty and Guthrie, 2000; Guthrie, 2001). Several authors have suggested that what we buy and sell in the market determines the worth of knowledge (OECD, 1996; Shariq, 1997; Stewart, 1997b; Wiig, 1997, VanDerWall, 1998; Lewison, 2001; Marti, 2001; Groves, 2002). Thus, knowledge will continue to be generated and be valuable for open commercial success (Duffy, 2001; O'Regan, O'Donnell and Heffernan, 2001).

An analysis of 100 global companies with the greatest increase in market capitalisation since 1992 has indicated a growth from $1.6 to $4.7 trillion of which $2.7 trillion (90%) represents an increase in market value over book value. The market-to-book ratios doubled to 4.2 from 2.1 (IFAC, 1998). For example, for America Online and Microsoft, around 90% of their market capitalisation value lies in intellectual assets that underpin the company (Cariner, 2000). The market value of IBM stock grew $24 billion in 1999 and had increased by nearly $170 billion in the previous seven years (Financial Times Services, 2000). Charles Schwab grew its market capitalisation to $50 billion and was seen as more effective than Merrill Lynch with market capitalisation of $21 billion (Sharma, 2000). In 1997 the top ten pharmaceutical companies attributed 34 percent of their revenue to intellectual assets (Torres, 1999). The Pharmaceutical Company Merck had knowledge earnings of more that $5 billion based on its estimated earnings of $5.5 billion and its financial and tangible asset earnings of $371 million (Berry, 2000). The Brookings Institute has reported that the value of intangible assets has grown significantly since 1982, given that the hard assets has dropped from representing 62% of the companies' market value to 38% in 1992 (Dzinkowski, 2000).

Market valuation is volatile and could be inadequate (Lynn, 2000). Many authors have similar ways of relating market value and book value to intellectual or knowledge assets by simply identifying the difference of the market value and book value. Other researchers have added more elements to the equation for this difference. Strassmann (1998) argued that it is impractical to calculate the value of a company's knowledge simply based on the difference of the market value and the book value. Gnuschke (2001) described market capitalisation as the summation of value of a public corporations intellectual capital determined by the free market and the value of its working and fixed capital. Tobin's Q (Quinn, 1994) explained market value as the total replacement value of physical assets and intellectual assets. Dzinkowski (2000) indicated that the principal benefit of calculating market-to-book value is its simplicity but argued that the simpler the calculation, the less likely it is to capture the complexities of the real world. This is because stock prices fluctuate

constantly. Nevertheless, intellectual and knowledge value is subject to variations such as the imperfections that may exist in the market valuations and other regulations imposed by the country for accounting purposes.

2.2 Market Fluctuation

The difference between the market value and the book value tends to be caused by the market fluctuation and in some instances, market speculation. Market fluctuation is perceived as out of the management or executive's control (Pily, 2003). Generally being considered as temporary or short-term effect, market fluctuation can influence near-term spending, such as on research and development and share price (Taylor, 2001). Particularly for technology companies, market fluctuations impact a company's share price (Frucot, Jordan and Lebow, 2004). Actions by pooled investors who have different objectives, risk tolerance and investment horizons add to market fluctuation (Johnson and Collins, 2000). In addition to the uncertainty of market fluctuation, the cognitive overload of investment information also creates an environment in which individuals were highly susceptible to social cues (Shah, 1998, pg. 255). Novicevic, Harvey, Pati, Kuffell and Hench (2002) highlighted how the instability of intangible resource valuation in unusual stock market fluctuations based on the economic theoretical view by Milgrom and Roberts (1990) harmed intangible resource rich firms. Hence, fluctuation in asset prices is not explainable solely by news concerning fundamentals but also the result of shifts in asset preferences (Masson, 1992).

2.3 Revaluation of Assets

In some of the stock market valuations of companies, the values of intangible assets as part of the companies' value are reflected implicitly. In Australia, companies are allowed to revalue their assets. The Australian Accounting Standards Board (AASB) considered revaluation of intangible assets as one of the highest priority (Dixon and Martin, 2001). Gottliebsen (2000) provided some examples of how investors evaluate the value of companies in Australia. Investors put a value on the new BHP chief executive Paul Anderson when he took over for a short time. In the service sector, Commonwealth Bank was rated as having the highest intellectual capital and investors were prepared to pay a higher price for the bank stocks than other banks. In contrast, Westpac intellectual capital was rated poorly for the lack of disclosure of information.

FASB considered expanding the financial reporting requirements to include non-financial measures such as turnover of employees or customers in financial statements (Weiss, 1998). The international accounting community also supports the growing effort to understand the complexities of intellectual and knowledge assets to redress the overemphasis on monetary and physical assets (Dzinkowski, 2000; Roos, Bainbridge and Jacobsen, 2001).

2.4 Projected Value

Value creation in business does not refer solely to selling products or services that customers want. Good business performance is no longer viewed only as the management of tangibles but also the management of intangibles. It requires agility, creativity and ingenuity (Zahra, 1999). More essentially, it depends on the ability of the business to generate the required return to investors. An expanded view of value allows more attention to be paid to other types of value creation including understanding knowledge and intangible benefits as a form of currency (Allee, 2000). Companies are advised to change their business strategies in view of the transformation from physical assets to knowledge assets and from economics of equipment to the economics of information (Sharma, 2000). The changes in a business's structure and strategic focus have also influenced the importance of intangibles (Lev, 2001). Therefore, the bottom line value of business is to create value for shareholders' portfolios through this new direction of value creation.

Projected value may include the intrinsic value such as management and marketing skills. Managers and investors woefully neglect intellectual inputs and outputs. In many cases, these far outweigh the assets that appear on balance sheets (Stewart, 1994; Bontis, 1996). Institutional fund managers are interested in gaining understanding of the many qualitative intellectual and knowledge factors driving corporate performance (Davies and Waddington, 1999; Mand and Whipple III, 2001; Holland, 2001). Thus, projected value can be determined by the intellectual capital of a company and the revaluation of assets in addition to the book value.

2.5 Intellectual and Knowledge Capital

Management of company's intellectual and knowledge capital has become the most crucial ingredient in the pulse of business. Company's performance will be based more on that in their overall business strategy (Bontis, 1996; Business Wire, 2000) as the capabilities of intellectual capital increasingly represent the dominant value for most business success (Aberbathy, 1999; Karrer, 2001). Some popular management models to determine the value gap or change in projected value. Models such as Economic Value Added (EVA), Total Quality Management (TQM) and Business Performance Indicator (BPI). Some accepted ones for associated intellectual capital studies are Balanced Scorecard (BSC) (Kaplan and Norton, 1992; 1996), Intangible Asset Monitor (IAM) (Sveiby, 1988; 1997; Celemi, 1999), Skandia Value Scheme (Edvinsson and Malone, 1997; Edvinsson, 1997) and the Intellectual Accounts (Danish Agency for Trade and Industry, 1998; 1999).

Research studies in this related area have included issues such as the precise definition, creation and valuation of intellectual capital (Bengtsson, Elg, Lind, Blonder, Ben-Dov, Dagan, Willner, Zisman, Wilkins, van Wegen, de Hoog, 1997; Collier, 2001; DeTore, Clare and Weide, 2002; Stahle and Hong, 2002; Volpel, 2002), identifying and integrating the process and methodology (Nickerson and Silverman, 1997; Edvinsson, Kitts and Beding, 2000; Andriessen, 2001; Bowman, 2001; 2001a; Peppard and Rylander, 2001a, 2001b; Williams and Bukowitz, 2001), studying the inter-relationships and interaction of IC (Bontis, Keow and Richardson, 2000; Kalafut and Low, 2001; Pena, 2002; Tayles, Bramley, Ahshead and Farr,

2002; Usoff, Thibodeau and Burnaby, 2002), calculating and measuring intellectual assets (Dekker and de Hoog, 2000; M'pherson & Pike, 2001), and analysing the development of models for reporting intangibles (Guthrie and Petty, 2000; Brennan, 2001; Williams, 2001).

Regularly mentioned adopters of intellectual capital are Leif Edvinsson (former Director of IC for Skandia) and Hubert Saint-Onge (Vice President, Learning Organisation and Leadership Development, Canadian Imperial Bank of Commerce). IC has also been greatly emphasised in Allee (1997), Boisot (1999), Brooking (1996), Burton-Jones (1999), Edvinsson and Malone (1997), Prusak (1997), Klein (1997), Rappaport (1996), Stewart (1997a), Sveiby (1997) and Tissen (1998). Brooking (1996), Danish Agency for Trade and Industry (1998; 1999), Petty and Guthrie (2000) and Society of Management Accountants Canada (1998) have backed the need to better understand intellectual capital.

The recognition of this shift has also led to the development of new corporate roles to be responsible for the development, deployment and managing of the intellectual capital of the company (Stuller, 1998; Eadie, 2000). Companies are beginning to employ more information, knowledge or intellectual capital officers to extract the value and assess the effectiveness of the company's intellectual capital utilization. Major Australian banks and several manufacturers had such officers (Crowe, 1997). Australia and New Zealand Bank has appointed a Head of People Capital to oversee its people agenda and building intellectual capital (Staff Reporter, 2001) and is grappling with the issue of how best to show that knowledge management efforts are benefiting their organisation (Liebowitz and Wright, 1999).

3. Conceptual Analysis and Discussion

The success and value of a business is increasingly determined differently from the old traditional fashion. Consequently, the value and performance of businesses would be greatly affected by the management of intellectual and knowledge assets and the way people look at the differences between the market value and the book value. Intellectual and knowledge assets encompasses the value in such things as brand identity, reputation, corporate style, employee expertise, business models, licensing arrangements, know-how, technology that separates a company from its competitors, customer and supplier relationships. Though the value of intellectual and knowledge asset has been significant to the market value, other factors such as revaluation of assets and market fluctuation should be taken into account, as illustrated in Figure 1.

In the case of scenario MV1, the market value may be lower than projected value due to market fluctuation which depends on investors' perceptions. This could be due to two reasons. Firstly, the market values of the company's intellectual capital below that which the company has projected. Secondly, it could be due to a shortage of scripts or the scripts that have been tightly held and cause a drop in the market value. Therefore, in this situation, there is no relationship of the company's market value to the intellectual capital value.

In scenario MV2, investors place a higher value on intellectual capita than the company might. Thus it can create a high value and causes the value in the market to fluctuate depending on the perceived value for such assets. For example, in the dot.com related industries, the true value of the company in the market does not necessarily reveal the real value of the company. Investors are willing to gamble with a high value in consideration of the company's other valuable assets such as its human capital and customer capital.

Intellectual or knowledge assets = *Market Value (MV) – (Book value + Revaluation of assets + Market fluctuation)*

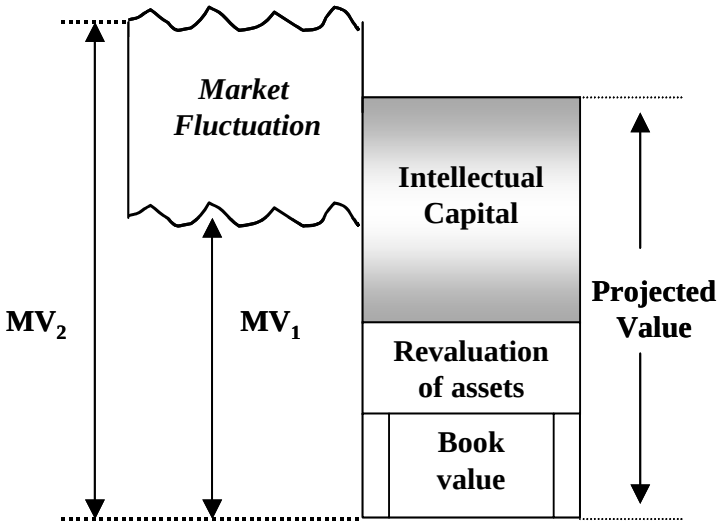

Figure 1: *Market Value of Intellectual and Knowledge Company*

Intellectual and knowledge assets will be imperative for Australia and will become the dominant source of wealth in the economy. The Australian Government and other government bodies believe the necessity to exploit the huge resources of IC of Australia in the 21st century (Brenchley, 1999; Centenera, 2000; Trinca and Pawle, 2002). In Australia, most of its achievements are a direct result of the value placed upon recognising the intellectual resources of the people and businesses in innovative sectors. Australia was also recommended by the General Electric to spend more time and money developing its intellectual and knowledge resources in order to attract more foreign investments and in view of its limited attractiveness to multinational companies (GE Chief, 2000). A research conducted by Ernst and Young concluded that 81% of Australia's top 500 companies rated business knowledge as equally or more important than tangible assets such as cash, labour and equipment (Crowe, 1997). The study also showed that two-thirds of businesses do not measure their intellectual and knowledge assets.

4. Conclusion

The main driving force of corporations is to generate economic benefit for shareholders. Capital markets are knowledgeable and quick to exploit even the

smallest difference in expected rates of return among competing investments. The economy is becoming more reliant on intellectual assets management, particularly for competitive advantage (Robinson and Kleiner, 1996; Bratic and McLane, 1998; Roos, Bainbridge and Jacobsen, 2001). Globalisation is prompting skills and knowledge to act like capital, the real value, and not as the fixed assets in the knowledge industries (Macken, 1999; Skyrme, 2002). As the economy is changing and focusing more on services, there will be a need for associated regulations related to intangible assets to become more defined. The value and performance of businesses is greatly affected by the management of intellectual capital and the way people look at the differences between the market value and the book value. Companies are beginning to value themselves by factors other than their tangible assets.

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