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**Embedding human capital analysis in the investment process  
– a human resources challenge****Carol Royal**

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*Human capital analysis has implications beyond the field of human resource management. It is also essential to the work of securities analysts. This paper addresses the proposition that securities analysts, their clients, and their industry can benefit from using human capital analysis alongside financial analysis for the purposes of making more transparent investment recommendations. While qualitative research into human capital is currently not being systematically adopted by securities analysts, it can illuminate the working of an organisation in a way that primary financial data on its own cannot achieve. When assessing which organisations are sustainable, a truly complementary approach requires both qualitative human capital analysis and traditional, financial, quantitative analysis. In essence, an integrated approach is needed for the purpose of making more transparent investment recommendations.*

**Keywords:** human capital analysis, investment research products, qualitative research techniques, securities analysts, sustainable corporation

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The media, investing public, regulatory agencies, and politicians have become increasingly concerned with the credibility problems associated with the independence and objectivity of brokerage houses and their securities analysts' (sell-side) research products. Media debate since 2001, both globally and locally, has been highly sceptical of the independence and quality of securities analysis (Gasparino 2001).

The main argument of this paper is that additional analytical techniques can be adopted by securities analysts to provide a clearer picture of organisations. These techniques are needed in order to analyse human capital, which is linked to future financial performance. Qualitative techniques can be used in conjunction with the current techniques used by securities analysts. Current analytical techniques rely heavily on the analysis of financial data to create models, which then form the basis of earnings estimates and most recommendations. Yet, most models use lag indicators of past performance rather than lead indicators of future performance, more likely to be gleaned from human capital data, such as the Watson Wyatt Human Capital Index (Watson Wyatt Worldwide Research 2002). Watson Wyatt created a human capital index (HCI) as an outcome of surveys of human capital practices in 750 US and European organisations. Fifty-one organisations were surveyed in 1999 and 2001, and were divided into low and high in terms of overall HCI scores using the organisations' five-year total returns to shareholders (RTS). Low HCI averaged a 21% total RTS; medium HCI averaged 39% total RTS; high HCI averaged 64% total RTS. Wyatt compared 1999 HCI scores and 2001 financial results and also 1999 financial results and 2001 HCI scores in an attempt to determine which direction the link between the two ran. The result was a much larger positive correlation between 1999 HCI scores and 2001 financial results, indicating that it is more likely that superior HR practices will improve financial results than that financial results will lead to improved HR practices. HR practices are shown to be a leading indicator of business success. The 47% increase in market value between 1999 and 2001 can be broken down into these HC practices: total rewards and accountability: 16.5%; collegiate and flexible workplace: 9%; recruiting and retention excellence: 7.9%; communications integrity: 7.1%; focused HR service technologies: 6.5%. This and other research noted in this paper indicate that these elements of human capital need closer and more systematic examination by financial analysts in order to more closely estimate future earnings potential of their target firms. In addition, post-Enron, a clearer understanding of the intangible drivers of a firm's value becomes increasingly important. Ittner (2002), a Wharton accounting professor, admits that companies often move beyond the obvious deduction of tangible assets from market value to gain a value of intangible assets. Even so, companies do not have systematic measures for intangible assets. In an attempt to remedy this problem, Wharton researchers have created an index linking firms' market values to a series of characteristics called the Value Creation Index. Innovation is ranked first, followed by management and employee quality. To

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fully access the data available on these characteristics, tools other than traditional financial analysis tools are required.

This process addresses the proposition that securities analysts, their clients, and their industry can benefit from systematically embedding qualitative human capital analysis alongside quantitative financial analysis for the purpose of making more transparent investment recommendations. This paper forms part of a wider study, which examines the nature of work in the turbulence of mergers and acquisitions in investment banking in Australia (see Royal and Althausen 2002). This paper will examine the limitations of the quantitative financial approach to creating equity research products and the forces for changing these research products. An argument for qualitative research in financial analysis is presented in order for the finance industry to capture the best of both research worlds. Research evidence linking human capital to the future financial performance of the firm is presented. A model, based on Royal (2000), is derived to analyse human capital in the finance sector, highlighting a discussion of the current skill base of securities analysts, and predictions on how this skill base may change in the future. Challenges for implementing human capital analysis in the financial markets are noted. Finally, the paper notes that the trend to increased disclosure of intangible drivers of the value of the firm in the post-Enron environment is likely to increase pressures on firms to understand and value these drivers. Human capital analysis is likely to play an important role in future analyses of the intangible drivers of the value of the firm.

For the purposes of this paper, 'human capital' refers to the sustainability of people management systems which are likely to have an impact on the share price of a firm. 'Sustainable' human resource management systems are those which are internally consistent, consistent with the firm's corporate strategy and consistent with the broader context in which the firm is operating.

**<A>What do securities analysts do?**

The ASIC annual report (2000/2001, 60) indicates that there are 2250 securities dealers, inclusive of securities analysts, in Australia. Generally, these securities analysts are employed by a brokerage firm, bank or investment banking institution. However, current organisational structures require securities analysts to meet the needs of diverse stakeholders. Schack (2001) quotes the chief investment officer for large cap value stocks for Putnam Investments, "Our approach to the market generally has been that sell-side analysts are serving so many masters besides us that we increasingly need to rely on our own research".

The analysts' nominal function is to conduct thorough research investigations into all aspects of the current and prospective financial condition of publicly listed companies and to provide an analysis of the findings in the form

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of a research report, which serves as a basis for making an investment recommendation (Royal and Althausser 2002). Recommendations are made on a:

relative basis comparing a company's performance within a sector or industry and examinations should cover all pertinent publicly available information about the company and its business. It is not limited to financial statements, [and includes] research on the company, industry, product or sector, and public statements by and interviews with executives of the company, its customers and suppliers. (Fernandez 2001, cited in Boni and Womack 2002, 1)

In terms of their job characteristics, securities analysts are occupational knowledge-intensive specialists. Their tasks involve more than information dissemination – they are involved in a continual cycle of data collecting on an industry or individual company from customers, suppliers and management. The data is then processed by applying complex theoretical financial models and specialised knowledge, to form earnings estimates and stock recommendations (Royal and Althausser 2002).

The primary source of data for securities analysts is financial data. This is consistent with the prominence of financial models such as the Capital Asset Pricing Model (CAPM) and its variations, as well as the significance of the analysis of the beta (market volatility) of a stock (Mitchell 2001; Rose 2001). Financial analysis is also consistent with the qualifications, experience and skill set of most securities analysts in Australia. Research evidence into the equities division of two local foreign-owned investment banks suggests that securities analysts are seen to be the:

elite of the Equities business in terms of knowledge base and intellect with 93 per cent of people having an undergraduate qualification in Finance, Business [or specialised fields such as Engineering] and over 50 per cent having a postgraduate degree or diploma in Finance, Commerce, or Business Administration. (Royal 2000, 172,173).

### **<A>Forces for changing the research products of securities analysts**

This paper's theme is significant in a post-Enron environment of widespread lack of faith in the ability of securities analysts to accurately predict future financial performance. Waddock (2002) noted that Enron won a spot for three years on the list of the best companies to work for in America. In 2000 it received six environmental awards. It issued a triple bottom-line report. It had great policies on climate change, human rights and anti-corruption. The CEO

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was a guest speaker at ethics conferences. Most importantly, however, is that Enron featured in many social investment funds before it collapsed.

The growth in ethical and social investment funds has been considerable, and may prove a significant force for change in the product and process of securities analysts. This rise has been documented by Rose (2001, 23) who cites the Allen Consulting Group's publication 'Socially responsible investing in Australia', which reveals that; in the US, US\$1.3 trillion is managed in 183 socially screened funds – offered by over 40 different fund managers; in the UK US\$3.65 billion is managed in 41 ethical funds; in Canada US\$3.8 billion is managed in 14 ethical funds; and in Germany US\$2.2 billion is managed in ethical funds. According to the same group (Rose 2001, 22), Australia has about \$1 billion, or less than 1% of all share investments, in managed funds.

Rose (2001, 38, 39) furthermore cites a Social Investment Forum report stating 12 of the 17 socially and environmentally screened mutual funds with US\$100 million or more in assets earned high ratings from either or both of the industry's most respected investment tracking firms, Morningstar and Lipper. In a 1998 US study, in which screened and non-screened funds were compared over one, three, five and ten year periods, ethically screened funds bettered the non-screened funds by up to 2%, depending on the time period. The Domini 400 Social Index of comparative cumulative performance since inception (January 1990 – January 2001) outperformed the Standard and Poors 500 in every quarter in terms of value of \$1 invested. A similar trend can be seen in an Australian context, with the Westpac-Monash Eco Index from 1987 to 1999 outperforming the All Ordinaries over most time periods, up to a peak of 3% difference. Even allowing for some biases through 'survivor effects' and stock size effects, the implications are that an Eco Index is worthy of serious consideration by the ethical investment community. As Rose (2001, 42, 43) comments 'there are profits to be lost in bad ethics'. One Australian example is Amcor, which floated its paper manufacturing division into a separate entity, known as Paperlinx, 'arguably because the consumer and shareholder pressure became too damaging and had become negatively associated with the Amcor brand' (Rose 2001, 43).

Additionally, as noted by Dunphy (2000), some elements in the financial markets are starting to appreciate the limitations of purely financial measures as an indicator of future performance. To compensate, new measures are appearing, which focus on intangible assets, including customer capital, and structural capital. Dunphy argues that stakeholders as varied as stock exchanges, accountants, auditors and shareholders all have a strong interest in better indications of viability and sustainability than are offered by the traditional financial measures. The move to triple bottom-line accounting could be seen as part of this process. Given the primary competencies of securities analysts in financial analysis, traditional financially based analytical practices may be slow to change.

Even so, the concept of complementary analytical techniques is consistent

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with a theory of fundamental analysis, championed by Dodd and Graham (1934) in their classic text *Security analysis* (cited in Mitchell 2001). Mitchell argues that fundamental analysis, in which the firm and its context are considered to be part of the process of share price valuation, has lost favour since the 1970s with the rise of portfolio theory as well as the popularity of the Capital Asset Pricing Model, which has had strong currency since the 1980s on Wall Street.

One effect of this focus has been for securities analysts to rely more on their own, largely mathematical models of earnings forecasts, rather than a broader analysis of the firm and the context in which it operates. Stocks are seen largely through the lens of risk and return, and the beta factor, the volatility compared to the market sector. The uniqueness of each stock is minimised in the mathematical modelling. Bernstein (2001) identifies the recent increase in earnings models, as 'noise', or extraneous data, available to investors, without a concomitant increase in analysis. He notes that business journalists are sometimes indistinguishable from securities analysts, indicating the increasing trend to generating more information on stocks is often more akin to observation or reporting, and less often pure analysis.

The fundamental analysis approach is also consistent with a systems view of organisations, in which a firm is seen in the context of its broader environment, and internal and external connections and interdependencies are made explicit (Senge 2000; Lewin and Regine 1999; Trevelyan and O'Donnell 2001). According to systems theory, most complex systems respond to their environment, adapt and often become even more complex as they continue to evolve. Observers of organisations, including securities analysts, need to be aware of the complexity of the system, whether it is an open or closed system, and the potential ripple effects of changes in structure, strategy and process (Trevelyan and O'Donnell 2001). Standard quantitative financial analysis does not fully account for this increase in complexity, and the potential effects on financial performance.

Open systems theory, as articulated in Flood and Jackson (1991), is also relevant to the concept of the sustainable corporation. Open systems theory attempts to describe how open systems relate to the environment, and how systems contain elements which are interdependent and intradependent. This is congruent with the move towards seeing an organisation as having elements of both closed and open systems (Gebert and Boerner 1999), and as being interdependent with community and the context in which it operates (Blattel-Mink, Kramer, and Mischau 2000; Lewis, Kagan, and Heaton 2000; Glendon 1998).

A similar argument by Ghoshal and Bartlett (1997) is demonstrated in their analysis of the individualised corporation. They quote the experience of Dr Yoshiro Maruta, head of the Kao domestic household cleaning organisation, on his view of the concept of self-renewing capability, a primary element for understanding the sustainable organisation. They note that Kao's capacity for regeneration, self-renewing capability, organisational flexibility and

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strategic challenge, and for managing creative disequilibria are fundamental to its success. Yet, these and similar value-creating capabilities do not appear in traditional financial analysis by securities analysts.

However, complexity, even within open systems, is frequently based on deceptively few simple rules, often focused on distributed rather than central control. Lewin and Regine (1999) note that complexity science focuses on the nature of interactions among individual 'agents' in a complex adaptive system, and monitors their effects. In the context of securities analysts reporting on listed companies, a qualitative analysis of a firm, as noted above in Collins (2001), is more likely to uncover these types of patterns, and their underlying simple rules, and their effects on future organisational performance, than a purely quantitative financial approach used in isolation.

When analysing knowledge-intensive firms, in particular, securities analysts need to be able to understand and value the intellectual capital of the firm in order to provide earnings forecasts. This is significant, as in these types of firms, the workers are the owners of the capital, not necessarily in a strict sense of ownership of stock, but in terms of being owners of the means of production (Drucker, cited in Mitchell 2001). As noted by Stacey (2001), intellectual capital can be divided into two main categories, defined as human capital and invisible assets, or 'non-thinking' capital. These can be represented using apparently valid quantitative financial methods. For instance, human capital can be divided into three main areas: competence (e.g. average duration of employment, hours of training per employee, IT literacy), attitude (e.g. a leadership index, a motivation index) and intellectual agility (e.g. savings from employee suggestions, company diversification index). The second area of human capital is often seen as invisible assets and processes, 'non-thinking' capital, such as relationships (e.g. customer retention, length of supplier relationship); internal efficiency (e.g. revenues from patents, processes completed without error); renewal and development (e.g. percentage of business from new products, new patents filed, training costs per hour per employee).

These types of measures can be combined into a weighted intellectual capital index, which, on the surface, has meaning and rigour. Yet, as Stacey argues, the reality of the intellectual capital of an organisation can be quite different. He notes that measuring knowledge in an organisation is more than numbers of hours in training sessions, or number of patents held, even though these are often mistaken for intellectual property. They are mistaken for knowledge itself but knowledge genuinely exists only when it is used in the context of communication processes between people.

If so, then qualitative human capital tools need to be used in conjunction with quantitative financial tools in order for the observer to understand and see organisational culture as a variable in predicting the future performance of the firms. This requires a high level of understanding of organisations' cultural issues, such as interpersonal communication, both formal and informal

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(Carlopio and O'Donnell 1994), particularly in knowledge-intensive, network organisations.

As the knowledge-intensive proportion of Australian Stock Exchange listed companies increases, people become the 'value creators' of the firm, and, by using their knowledge, skills, values and attitudes, they create the critical differentiating features of the firm (Guthrie and Kramar 2004 [forthcoming]).

The move to the concept of creating more sustainable organisations, as espoused by Dunphy and Griffiths (1998) and Roome (1998), can be seen within the interdependence inherent in open systems. Organisations need not only financially and environmentally sustainable practices, but also socially sustainable practices to prosper in the long term (Glendon 1998; Senge 1992).

A case study on the use of qualitative human capital data to complement traditional financial analysis is seen in Royal and O'Donnell (2002), which examines the human capital of the top 50 Australian Stock Exchange listed companies and creates a five-star rating system, which can be used as a means of fine tuning earnings estimates by potential investors in a firm. Human capital potentially is a risk management tool, used by analysts to gain deeper insights into potential sustainability of the firm.

To verify the effect of superior human capital on the future financial performance of the firm, Watson Wyatt undertook a large survey of 51 organisations in North America and Europe, administered in 1999 and 2001. The researchers divided organisations into three groups based on their overall Human Capital Index (HCI) scores. The HCI was derived from matching survey data to market value, returns to shareholders and Tobin's Q to create an index of human capital. Using the organisations' five-year total returns to shareholders, the researchers found that organisations with a low HCI averaged a 21% five-year return, those with a medium HCI averaged 39% and those with a high HCI averaged 64%. This analysis noted that human capital is the chief resource for innovation in the knowledge-based economy, and, once it can be measured, it can be managed and exploited to increase shareholder value.

Therefore, it is important that securities analysts, who inform the financial markets on stock recommendations, have access to the qualitative human capital tools as well as the quantitative financial tools to analyse these drivers of future growth and change. Securities analysts need to understand and to report on the lead, as well as the lag indicators of future financial performance. The share price sensitive issue of human capital cannot be rigorously measured only in traditional, financial terms. Non-financial data must be accessed, in a valid and systematic manner, in order to fully analyse these important performance indicators in order to make more transparent recommendations.

In a regulatory environment in which Australian companies are compelled to provide continuous disclosure of share price sensitive information, securities analysts find themselves in an increasingly competitive environment. Their ongoing challenge is to develop unique, timely insights for their clients,

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the fund managers. Therefore, the argument for embedding qualitative research techniques, alongside their traditional quantitative financial tools, becomes even more compelling.

**<A>Qualitative research as a complementary analytical tool**

Finance industry sources Brearley and Myers (1984) and Rose (2001) suggest there are several ways of conducting equity research. The securities analyst has some element of choice between quantitative financial data, which is valuable and, most often, is 'hard', objective and rigorous, and that which is qualitative and tends to take a 'soft' approach. Researchers find that quantitative financial research, on its own, can impede true analytical understanding of an organisation's performance as quantitative financial data often show that properties shared by all organisations in a sample or in an industry sector, such as banking, may be superficial, obvious or unimportant. Standard quantitative financial measures applicable to all organisations in an industry sector may ignore or understate the differences between organisations within their sector. Quantitative financial research minimises individual social, ethical and management practices, complexity and variety in organisations.

In essence, this paper argues for new research methods to move securities analysts from focusing on historical data, to seeing patterns which are available in human capital data, to create more dynamic and forward-looking research products. As noted below, this implies non-financial human capital metrics need to be used and accessed by both corporate management and analysts.

**<A>Using qualitative research to analyse human capital**

The competencies of traditional equity research securities analysts rely heavily on making 'quantitative forecasts typically expressed as numeric estimates of future earnings, including point estimates, range estimates and open-ended (maximum or minimum) estimates (Gallery, Gallery and Hsu 2002). These forecasts may reflect human capital features of the firm (Rose 2001), but these are not typically analysed as systematically as financial capital.

Qualitative analyses of human capital adopt a wide range of organisational case study techniques. These techniques include: interviews of management and staff, focus groups, historical analysis, oral histories participant observation, surveys, content analysis, archival and documentary sources. Others are listed as appendix 1. Qualitative research can highlight the complexity of issues surrounding the drivers of the value of the firm. As Hakim (1987) notes, qualitative research can be used in an intellectually rigorous manner, and can offer a richly detailed 'portrait' as a preliminary process to further investigation. A theoretical overview can be seen in the

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discussion of the configurational approach defined by Delery and Doty (1996). In the highly interdependent contemporary organisation, both quantitative, financial data and qualitative, human capital data are essential for understanding drivers of sustainable growth.

Qualitative is different from quantitative financial research in that exploration, description and explanation can be 'illuminating in one context blur our sight in another' (Royal 2000). Securities analysts who adopt multiple sources of evidence increase the transparency of any research products.

One element of the funds management industry which uses qualitative research more frequently is the ethical or social investment funds management element. Rose (2001) notes that these funds perform initial screening processes to screen out undesirable products and services, including tobacco, gambling, alcohol, weapons. Furthermore, in terms of research methodology on a company basis, standard practice in the Australian ethical funds industry is for analysts to focus on one or a number of company reports, media and brokers and analysts reports and questionnaires completed by the company. Fund managers, both ethical and general, often use a recognised index, and weight their funds. He notes that it is rare in Australia for ethical fund researchers to use a variety of stakeholder inputs, such as reports on firms by non-government organisations. As a result, firms such as BHP and Rio Tinto have been included in ethical funds, on the basis of their stated intent to improve their ethical credentials. Rose cites Hunter Hall's investment methodology, which includes primary sources such as financial statements and interviews with industry participants. It notes secondary sources, such as stockbroker reviews or the media are generally being viewed as being of less value. However, no mention is made of other publicly available sources of data, such as human capital information, which may be of value to the potential investor. Hunter Hall do note, however, that, if quantitative evidence suggests a potential investment is of high value and is undervalued, then qualitative research using market research surveys and interviews with customers, competitors, suppliers and management are considered in a matrix of information.

In spite of the innovations of firms such as Hunter Hall, there remains a gap in the systematic analysis of the patterns of human capital which help create lead indicators of the future financial performance of the firm.

For instance, human capital research in the investment banking industry by Royal and Althaus (2002), Royal (2001, 2000), and another qualitatively based study of US human capital, (Kalleberg, Knoke, Marsden and Spaeth 1996) found that sustainable people-centred practices that emphasise long term relationships with their employees, and which view the employment relationship as being more than one party in a straightforward economic exchange and which encourage organisational membership, perform better with regard to product development and innovation, attracting and retaining good staff and ultimately financial performance. These insights, when considered in light of

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the Watson Wyatt research (2002) create a strong case for human capital analysis in the financial markets.

**<A>Research evidence linking human capital to financial performance**

More evidence of the link between human capital and financial performance is seen in a large-scale research project by Hewitt and Associates (2003) which examined philosophies, policies, programs and practices influencing the management of people. Independent judges conducted a blind assessment of data from three instruments to create a list of Best Employers, 2003. The Hewitt Employee Engagement model survey was completed by 139 private sector companies and 25 public sector organisations, and included 28 000 respondents. Statistical samples of employees were surveyed randomly in each company to gain perspective on commitment. The CEO questionnaire asked each company's CEO about philosophies and approaches to managing people. The 'Best Employers' were those companies that performed well, from the employee perspective, and that showed aligned, supportive and inclusive people practices. The winners showed evidence of: a real concern for people; concern that employees' ideas are valued; that employees feel to be an integral part of what is going on; intrinsic motivation is important. . They also indicated the need to get credentials right for the market, consumers and stakeholders. The winners showed the benefits of a productive workforce, with lower staff turnover. Hewitt and Associates found that Best Employers experienced 13% revenue growth between 2000 and 2002 compared with 7% for other companies. Average profit growth was 21% in the same period (2000–02) for Best Employer companies compared with negative 44% for other, non-Best Employer, companies in the survey. This study is part of a wider study that covers over 25 countries, 350 companies and 125 000 employees.

In a Boston Consulting Group study of 100 companies in Germany, covering ten industrial sectors over the seven-year period 1987–94, Bilmes, Wetzker, and Xhonneux (1997) found that those companies which produced a greater total shareholder return than their competitors also scored highly on such measures as: expenditure per employee, contribution of employees as reflected in mission statements, promotion opportunities and flexible work hours, among other innovative human resource management practices. The emphasis in the more successful companies was on building employee capacity, also noted by Dunphy (2000).

In support of these findings, a study by Collins (2001) compared companies in the same industry, which sustained success over many years with those that had not. The methodology used by Collins was an innovative combination of traditional financial analysis, complemented by a selection of qualitative approaches. Collins screened companies using Fortune 500 data, then

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CRSP data, then by industry and was left with 11 companies from which demonstrated long-term sustainability of both financial and human capital. Visionary companies put a greater percentage of year's earnings back into the company, returning less in cash dividends to shareholders. They invested more heavily in management practices and human capital – specifically in training, recruiting and the professional development of staff – and in R&D and property and plant. Visionary companies considerably outperformed their non-visionary counterparts on all key financial measures.

Prior to this, Collins and Porras (1994) had analysed 18 paired comparison 'visionary companies', which have stood the test of time. Companies were chosen based on a survey of Fortune 500 and other CEOs, asking them to nominate the top five visionary companies within their industry. Visionary companies outperformed the US market, by a factor of 15 at the time of the study. They were six times more successful than the comparison companies.

Schuster (1986) also assessed the critical contribution of human capital. He used employee surveys and interviews of 1300 of the largest US industrials and non-industrials to research whether a significant relationship exists between the way in which organisations manage their employees and profitability. His findings included a statistically positive relationship between the use of employee-centred management practices and superior financial performance. An average return on equity of those firms at the time using one or more innovative HR practices was 11% higher than those firms not using any of the practices.

A specific example of the value of human capital is in research by Ranft and Lord (2000), which highlights the fundamental primacy of human capital in mergers, takeovers and alliances in high technology firms. The researchers recognise that strategically significant intellectual property, in some cases, rests within individuals, rather than in the firm itself. Also, Gupta, Iyer, and Aronson (2000) have noted that issues of knowledge management can have an impact on the efficiency and the performance of the firm. These individual intellectual property measures are often not a systematic part of financial analysis by securities analysts.

Dunphy (2000) highlights a 1996 study by the American Management Association indicating a strong correlation between increased training budgets and larger profits and productivity flowing from workforce reductions. The study found that organisations performed better when they were strategically well positioned in the changing environment and pushed the pace of internal organisational change fast enough to match the external pace of change. Securities analysts who fail to include these insights are missing opportunities to add value to their clients' investment choices.

A major study by Turner and Crawford (1998) of 243 case studies in Australia and New Zealand to determine the capabilities that drive corporate renewal found that specific clusters of competencies affect performance, including business technology (operational), market responsiveness (opera-

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tional), performance management (operational/reshaping), engagement and development of employees (reshaping). Quantitative financial analysis, as typically used by securities analysts, would not be able to distinguish these performance-related capabilities.

Kotter and Heskett (1992) conducted a study which looked at corporate culture and its effect on performance. Their findings suggest that corporate culture has a major effect on corporate performance and, although difficult to change, corporate culture can be made more performance enhancing. O'Reilly and Pfeffer (2000) examine successful companies that use ordinary people to achieve extraordinary results and find that an organisation that has well-articulated values, puts culture first, has a strong alignment and consistency in the people-centred practices that express those values, and where senior management maintain these values, are able to compete very successfully. Dunphy and Stace (2001) provide case studies of companies which improved financial performance as a result of appropriate leadership styles and change management strategies.

In terms of predicting future performance, extensive research by Cox and Blake (1991) concluded there are six areas where specific human capital practices are highly related to organisational performance. Abbott, De Cieri, and Iverson (1997) provide an examination of the dollar cost associated with exit of high performing managerial women. Total costs (direct and indirect) associated with separation, replacement and training of these and new employees are considerable.

Researchers such as Royal (2000), Collins (2001), Dunphy (2000), Turner and Crawford (1998), Watson Wyatt Worldwide Research (2002) and Bassi et al. (2001) use rigorous qualitative techniques to provide evidence for their findings on the positive relationship between sophisticated use of human capital and future financial performance of the firm. Examples of these techniques are listed in appendix 1. Few of these of these insights inform the process by which securities analysts calculate earnings forecasts.

Overall, this body of research strongly indicates the value to securities analysts, and their clients, of systematically embedding insights from both qualitative human capital analysis and quantitative financial analysis in making more transparent stock recommendations.

**<A>Deriving a model for analysing human capital**

Studies carried out by Royal (2000, 2002) in the investment banking industry used surveys and interviews across all levels of the organisation, participant observation, archival and business documentation, oral histories and content analysis (see appendix 1) to determine key indicators, and drivers of performance. These studies have lead Royal to develop the model which appears in appendix 2. It indicates the important role of human capital analysis in under-

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standing the drivers of the value of the firm. It illustrates the drivers of sustainable people management systems and the importance of various interrelated features that recur throughout a company's history. These features include changing internal and external pressures, and managerial beliefs and perceptions, all of which interact and shape management strategy, ultimately resulting in the adoption of internalised labour-market structures that are appropriate to a company and within its industry.

As the model indicates, more specifically, internal influences that affect managerial beliefs and perceptions and management strategy include the state of the employment relations, cultural factors, costs associated with the need to secure commitment of employees (such as reward, performance management, career and development systems) and insider–outsider relations.

External influences that affect managerial beliefs and perceptions and management strategy include historical trends, the competitive nature of the economic environment, institutional factors, the nature of the product, technological changes and the costs associated with recruitment. It is crucial to state in any qualitative analysis of this kind that while the internal and external influences are interrelated, they have not evolved in a linear fashion.

By considering a company's development over time, the features discussed in the model should serve only as a guide to what drives sustainable people management systems and not necessarily as a blueprint for the conclusive reasons for their existence in every company, across a variety of industries at any one time. The model cannot explain the exact order of their occurrence, for the simple reason that each company has its own unique history, often with gaps, which over time lends itself to more or less emphasis on one or more features discussed in the model.

However, while it is unlikely that one can simply ascertain the exact causal relationship, the application of this qualitative model (as seen in appendix 2) will provide a level of analysis which would form the basis of a complementary equity research product. Using this model, securities analysts would be able to identify emerging patterns in human capital that ultimately affect financial performance and market valuation. This would go some way to providing the investing public with more accurate and transparent information about the nature of a publicly listed company's current and future financial performance.

### **<A>Skill base of securities analysts: current and future**

The skill base of securities analysts is strongly geared towards quantitative financial analytical techniques, with almost all analysts having an undergraduate qualification in finance or business and a majority having a postgraduate qualification in finance, commerce, or business administration (Royal 2000). Securities analysts require, and currently generally have, the appropriate

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competencies, skills, knowledge and abilities in order to form earnings estimates and investment recommendations – i.e. formal qualifications in finance, accounting, economics and commerce. Yet different competencies, skills and knowledge and abilities are required to meet the demands of the analysis of human capital. These include: qualifications and/or formal training in the fields of sustainable human resource management, organisational change and/or organisational behaviour and their links to corporate performance; and qualifications and/or formal training in qualitative research techniques – i.e. interviews, participant observation, surveys, oral histories, historical/archival and documentary analysis, and content analysis (see appendix 1). Therefore, in order to minimise the risk of miscalculating earnings estimates, as part of the risk management process, securities analysts need to access all relevant sources of information on the potential sustainability of the firm. This would create a complementary equity research product which would allow for more transparent investment recommendations.

In terms of implementation this approach, there are three possible options. First, securities analysts could undertake additional formal degree qualifications to provide the theoretical underpinnings in human capital analysis covering the fields of sustainable human resource management, organisational change and organisational behaviour, while simultaneously undertaking formal qualitative research methodology qualifications. Second, brokerage firms could buy the competencies and skills in from the external labour market. This would complement equity research. Financial markets would benefit from human capital analysts, working alongside quantitative financial analysts, at both the broker and fund manager levels, to provide independent research on relevant human capital practices. Third, brokerage firms could buy a qualitative complementary research product from an independent research services firm.

In addition, as noted above, media coverage has highlighted the perception of conflicts of interest among analysts in investment banks and advisors on corporate finance. It is the view of the authors of this paper that an increased emphasis on human capital analysis will increase the quality of information available to institutional investors, and will help to differentiate investment banking products and services. The *Economist* (13 April 2002: 70) has noted the relevance to this debate of the gullibility of investors. Higher quality information on human capital will give investors more substantial criteria on which to base their investment decisions.

Sophisticated skills in qualitative research will become increasingly important as securities analysts continue to systematically access non-financial data in making earnings forecasts. Specifically, securities analysts will need to access high levels of competency in non-traditional analytical techniques to assess share price sensitive areas such as sustainable human resource management practices, organisational change and organisational behaviour and their links to corporate performance, all of which can be grouped under the general

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term of human capital. Appropriate methodologies for analysing human capital include qualitative case study techniques (see appendix 1), which most securities analysts do not currently utilise in a systematic way (Royal 2000).

### **<A>Conclusion: challenges for implementing human capital analysis in the financial markets**

From a theoretical perspective, human capital analysis needs to be carefully applied. Theorists such as Delery (1998) and Harris and Ogbonna (2001) emphasise the importance of understanding the mediating variables between strategic human resource management and performance. Researchers need to be careful in attempting to define underlying mechanisms through which human resource systems affect financial performance. Some human resource practices are additive (independent, non-overlapping effects on outcomes), some are interactive (depend on other elements in the system), and some may be substitutes for one another. Given this complexity in analysis, securities analysts need to be either comprehensively trained in qualitative techniques, or the analysis should be purchased from relevant experts.

At the same time, in order for human capital analysis to be effective, companies will need to provide access to securities analysts on human resource management practices so they have valid data on which to base their human capital recommendations. This is likely to change the type of relationship typically existing between analyst and company management.

The trend to increased disclosure of intangible drivers of value in the post-Enron environment will increase pressures on firms to understand and to disclose these drivers. The concomitant pressure on the financial markets to report on these intangible drivers is equally likely to increase. This is not to say that major re-regulation is required, but more harnessing of the strength of the existing equity culture by complementing it with valid human capital analysis.

This paper addressed the proposition that securities analysts, their clients, and their industry can benefit from systematically embedding qualitative human capital analysis alongside quantitative financial analysis for the purpose of making more transparent investment recommendations. Many of the researchers noted in this paper concur that this is possible.

Human capital analysis is essential to the work of the securities analyst, their clients and their industry. Evidence indicates that qualitative research is currently not systematically adopted by securities analysts. Such research illuminates the working of an organisation in a way that primary financial data on its own cannot achieve. When assessing which organisations are sustainable, truly transparent stock recommendations require both qualitative human capital analysis and traditional, quantitative financial analysis.

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<APPENDIX 1 APPROX HERE>

<APPENDIX 2 APPROX HERE>

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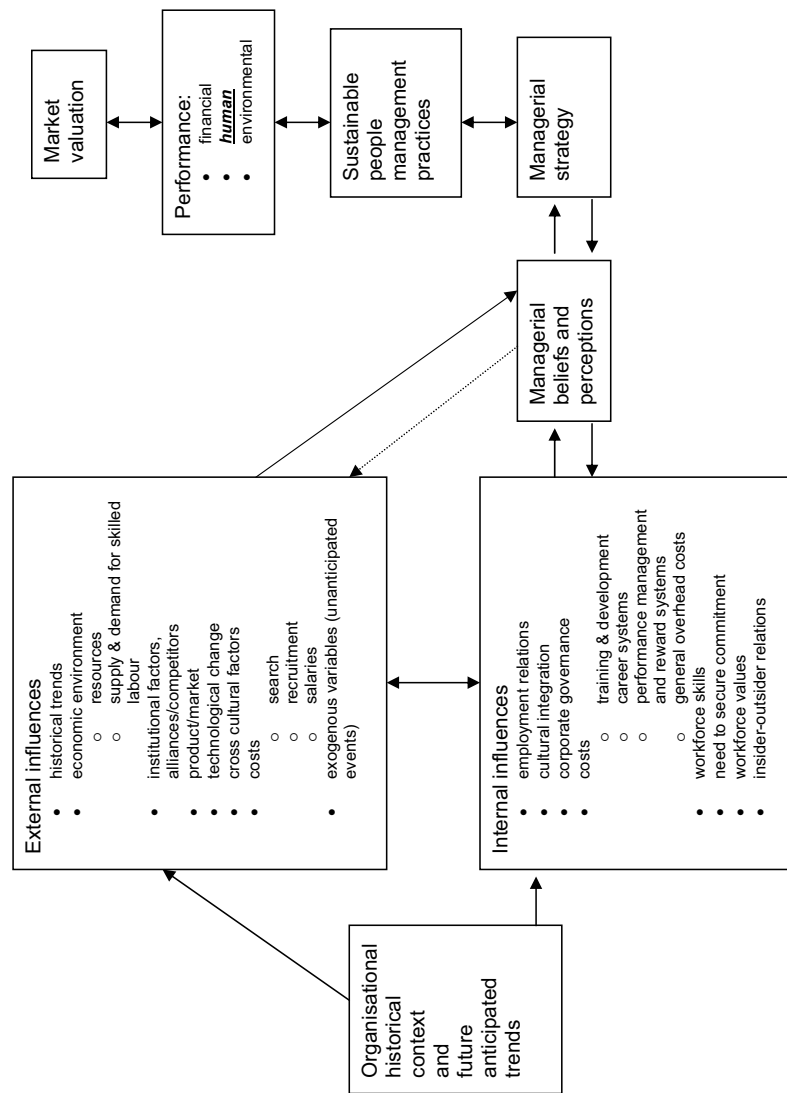
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Appendix 1 'Not just the numbers' – selected examples of qualitative research techniques for human capital analysis

- Structured and semi-structured interviews
- Content analysis of interview data and documentary sources
- Industry performance analysis
- Survey instruments (application of statistical analysis)
- Media analysis
- Archival and historical analysis
- Focus groups
- Oral histories
- Corporate ownership analysis
- Participant observation

Appendix 2 Human capital drivers of the value of the firm



Source: adapted from Royal (2000).