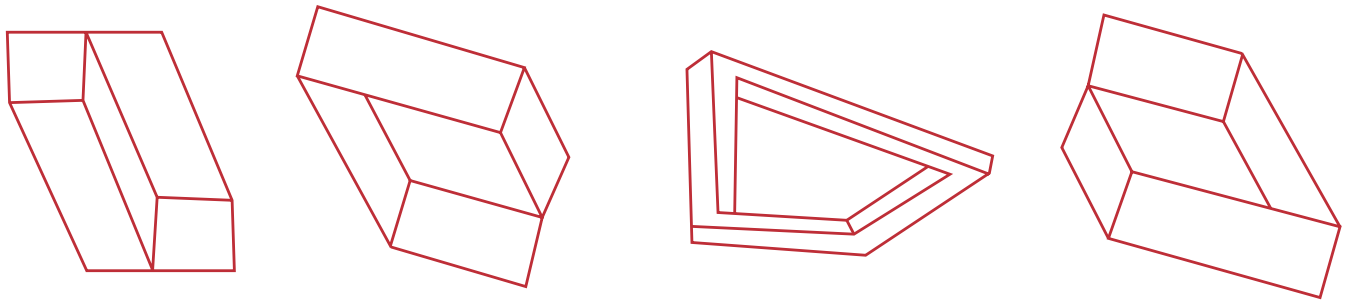
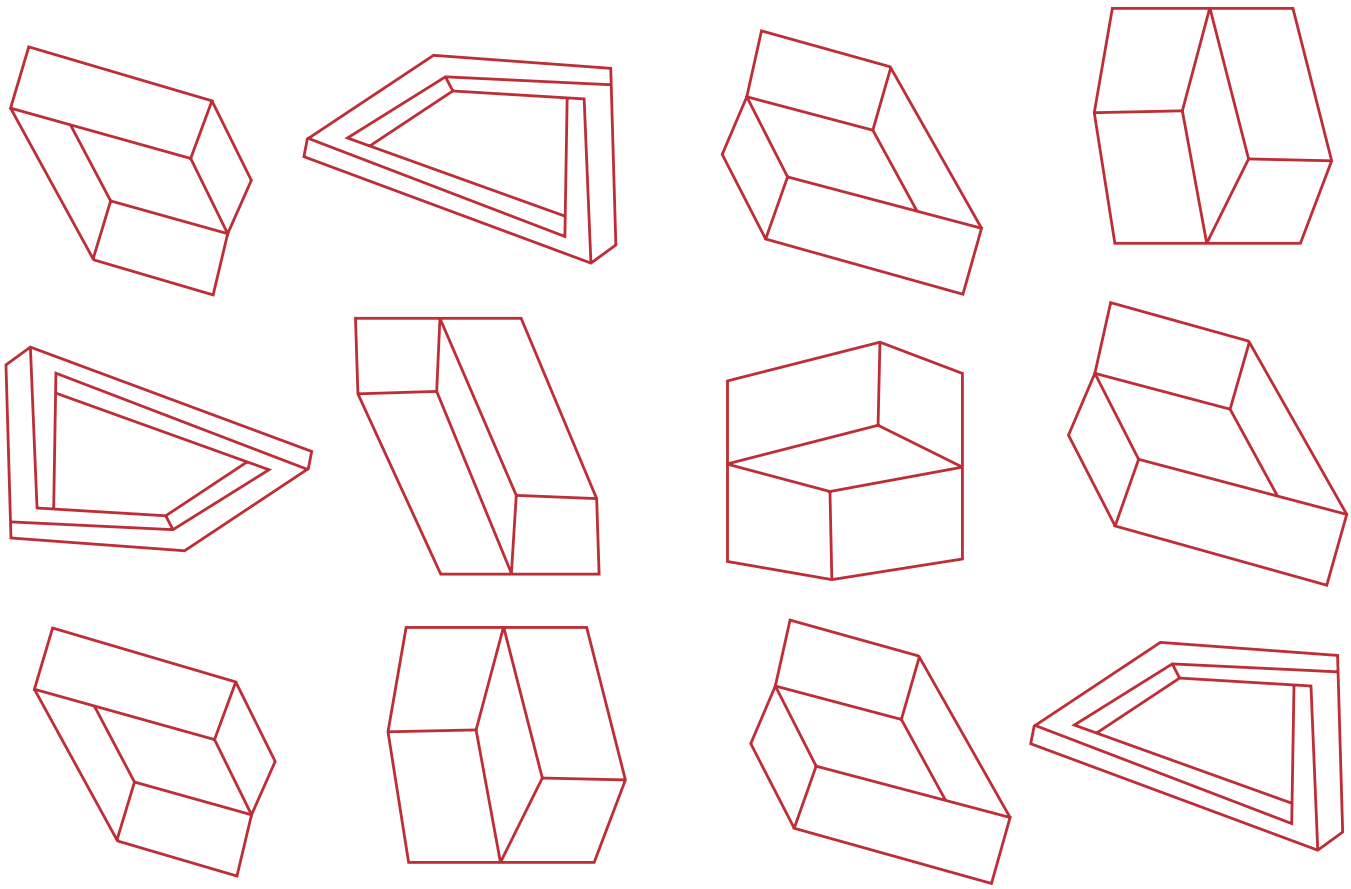
Centre for Business Performance

Thought leadership from the Institute…



Valuing Intangibles

Dr Caroline Vance
A discussion paper summarised from research undertaken by Paul Ormerod, Jeremy Holland and Helen Lucas



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Contents

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Foreword John Coombe Chief Financial Officer, GlaxoSmithKline

Intangibles are important to GlaxoSmithKline because as a research and development-based (R&D) company much of the company's value is tied up in the product pipeline – in the patents we own, over the products that we sell and the value of the intellectual property (IP) that all our scientists represent around the world.

The pharmaceutical industry has a long history of giving information on intangibles. Although we don't value them on the balance sheet, which is one of the popular theories being developed at the moment, the fact is that we publish a huge amount of information on:

- products being developed;
- the phases they have reached in their development; and
- when we expect to lodge filings with the various regulatory agencies.

...so financial analysts, in trying to work out their own value on the company, have a lot of information to go on.

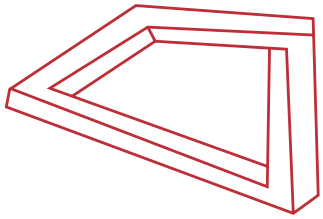
One of the reasons I am interested in creating more focus on intellectual property valuations in company reporting is to try to explain the gap between balance sheet values and market values.

In my own company we have net assets of around £9bn but we have a market capitalisation of around £120bn. This gap represents the market's view of our future earning capability, the value of our employees and essentially, a view of the future value of the work we are putting into our R&D. By applying consistent valuation methodologies to these intangibles, particularly the R&D pipeline, management can develop a better understanding of how they drive the external valuation of the company. And the more of this information we can give to current and potential investors, the better the market will be able to fairly value the company.

That is why work in this field is very valuable. Understanding the attitudes of the different sides in this debate – the corporates, and the investment community – is an important part of bringing consensus to the area. I hope you find the report enjoyable and useful.

John Coombe
Chief Financial Officer, GlaxoSmithKline

Summary



Over the 20th century we have seen the assets of companies become less tangible in line with the emergence of the new digitalised, knowledge and service-oriented economy. The intangible nature of these assets creates tremendous complexity when considering how they can be assessed and managed. Furthermore, lack of information, about companies' assets, leads to volatility in the share price and the market in general – and this volatility in turn leads to difficulty in raising capital. Needless to say there are many parties interested in how we might stabilise this situation by improving the valuing of intangible assets.

Companies in every sector are now being compared to their peers around the globe. In looking at them, we are now obliged to pay more attention to the intangible issues as in today's market, the hottest sectors and the hottest properties tend to be non-asset based companies – telecoms, IT, media field, internet – where their valuation is far greater than their asset base.
Nick Miles, Financial Dynamics, 2000

The share price for companies with large intangible values fluctuates more than other companies. The greater the ratio of intangible to material value in a publicly traded company, the more uncertain the investment.
Karl Sveiby, 1998

CEST, the Centre for Exploitation of Science and Technology, recently picked up on this interest and led a collaborative project to bring some understanding and pointers to this complex issue. CEST created a consortium of parties from the corporate, government and financial world that sponsored and guided this project's evolution.

CEST ran the 'Valuing the New Intangibles' collaborative research project between November 1999 and November 2000. The aim was to investigate the way in which the City thinks of so-called intangible assets and how it values them, and to compare this with the perspective taken by the corporate sector. Interviews were carried out with analysts and fund managers of the City and finance directors of major corporations, the majority of these players being members of the FTSE100 Group.

One key factor to be overcome in the design of the programme was the concern of corporates about discussing the issue in depth without divesting specific, sensitive information or experiences to the City. There was a worry that this might lead to adverse affects on stock prices. CEST therefore used a methodology which allowed a 'Chinese Wall' to be set up between the two groups, to help present the views of one side to the other without unduly prejudicing specific investment behaviour.

This report summarises the findings of these interviews and compares and contrasts the views from both sides of the 'fence' – the 'valuers' and the 'valuees' on various aspects of their thinking. Key insights, which have emerged, include the following:

- Valuation does not (generally) flow from asset value but from the cash flow generating capability of the enterprise as a whole. This is taken from forecasts of future cash flows and discounted to give a net present value. Both sides of the debate regard the balance sheet as a limited tool in the valuation process.

- The corporate world is more interested in the measurement and valuation of intangible assets than the City. Corporate players see that it is in their interest to make the communication of the value of its intangible assets clearer.

- The value of a company to a fund can be considered as having three components: the **strategic fit** with the rest of the fund; the calculated financial **valuation** taken from the net present value of the discounted (future) cash flow; and a subjective **evaluation** of a number of softer factors which represent the likelihood that the company will be able to deliver the forecasts. The **evaluation** element is considered to represent between 20 per cent and 60 per cent of the total market value of a company.

- The softer evaluation element of company value consists of a number of factors including: management strategy and quality; efficiency in the acquisition and use of intangibles; size; staff quality, turnover, and incentivisation; robust management processes; and 'gut feel'.

- There are 'thought leaders' in the City that have influence on the rest of the community.

- Corporate financial officers are generally very interested in intangibles and controlling their contribution to value creation.

Summary

- Intangibles are seen as creating commercial value directly (e.g. brands) or to creating new streams of commercial value (e.g. R&D).

- Around half of the companies interviewed have management systems in place to measure and manage intangibles. Two of the companies interviewed use Economic Value Added™ to directly link performance of intangible-focused business units with shareholder value.

- There is a widespread concern among corporates that any sort of reporting of value creation from intangibles would create a 'rod for our own backs' – leading to unrealistic expectations of year-on-year improvement of any quantity measured and reported.

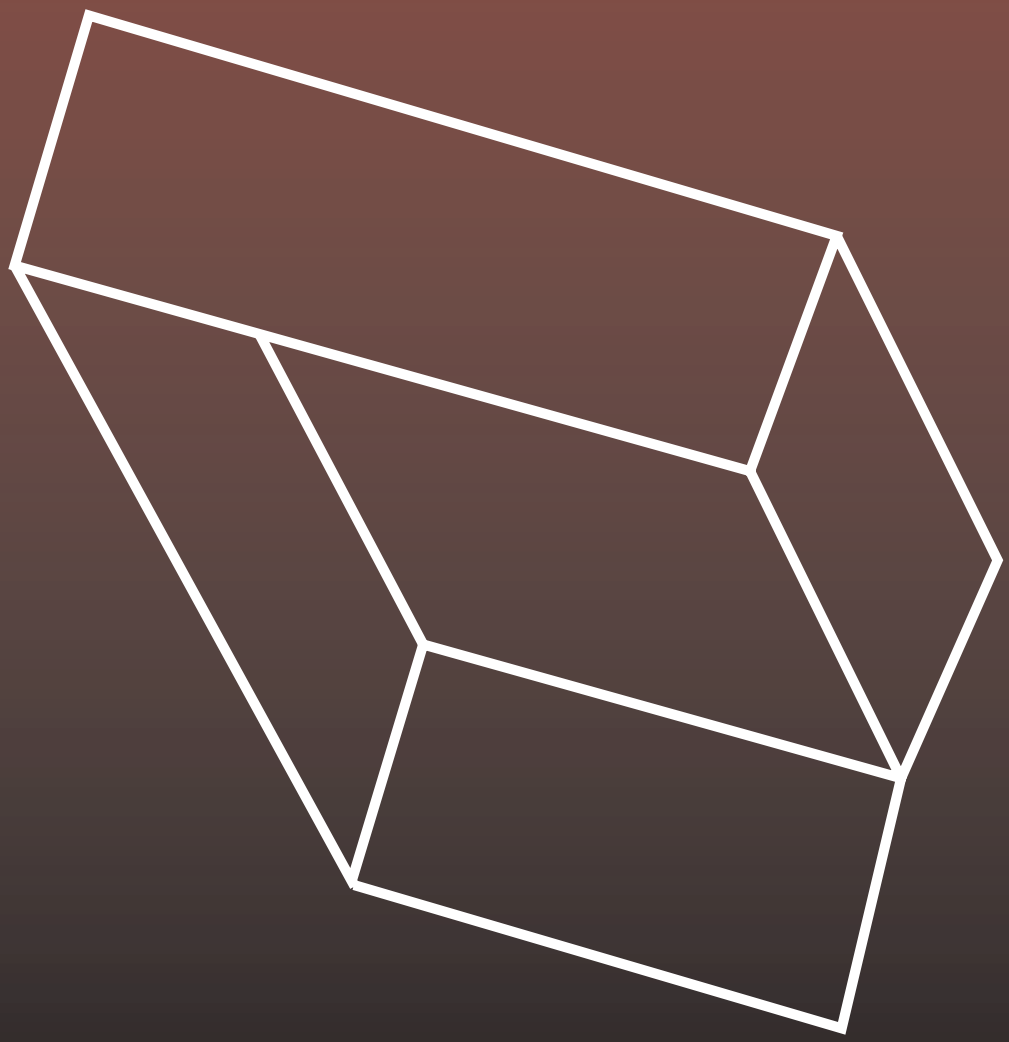
- Both City and corporate interviewees were against the introduction of any statutory formal reporting systems for intangibles.

The next steps recommended by this research are for corporate players to:

- Create, 'test', and use intangibles measurement and reporting systems internally before reporting to the City.

- Focus on the 'thought leaders' in the City who will influence their peers as new types of reporting are released to the City.

Setting the scene



'Intangibles' on the agenda

Despite the recent 'bubble and burst' cycle of events with the information and communication technology (ICT) revolution, it is well recognised that wealth and growth in today's economy are primarily being driven by intangible assets. We have seen how the market's valuation based on intangibles can be taken to extremes in the recent volatile swing and, we have over decades seen this shift being evidenced in many of our large well established players – the commonly quoted examples being GlaxoSmithKline and Microsoft.

Charles Kaufman, in a letter to Business Week *in 1997, noted that $148.5bn would buy Microsoft or five large companies combined – Boeing, McDonalds, Texaco, Time Warner, and Anheuser-Busch, or all 40 companies ranked 961-1000 in the 'Global 1000'.*

The increasing irrelevance of tangible assets is indicated by the fact that by March 1999, the ratio of market value of the Business Week *'nifty-fifty' had reached 12 times book value.*

How can it be that an apparently healthy advertising company (Saatchi and Saatchi in 1987), at least according to its published accounts, is actually in terminal decline?

How can it be that a biotechnology company (British Biotechnology in 1977) that has never sold a product is worth over $2bn?

How can it be that the market value of amazon.com, which has not yet made a profit, is five times that of a profitable bookseller Barnes and Noble, whose revenues are ten times larger?

DJ Skyrme 'New Metrics: Does it All Add Up?' in Despres C & Chauvel D (eds) Knowledge Horizons *(2000).*

It is therefore hardly surprising that intangibles have captured an increasing niche in the mushrooming management literature and central to the issue discussed is the information deficiencies due to the shortcomings of traditional accounting.

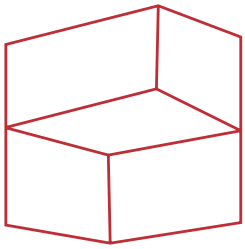
As changes continue to accelerate, it is becoming increasingly hard for the institutional mechanisms that monitor and guide the reporting of value from company to market, to keep up. Recent work has focused on the value of patents, brands, and trademarks. However, with cycle times reducing, the future potential of an organisation becomes more important and less based on these identifiable 'intellectual' assets. Instead such quantities as 'propensity to innovate', 'sustainable human capital', 'ability to learn', and 'inertia of processes' are becoming more important.

Lead thinking and the perceived 'call for change'

Academics, consultants and industrialists alike have been active in trying to develop lead thinking, models and concepts to help improve the transparency of corporate value as viewed by the market: investors, companies, and regulatory authorities.

The identification, if not the measurement and valuation, of intangible assets appears to be reasonably straightforward and generally would be accepted to include:

- *Brands*
- *Purchased goodwill*
- *R&D*
- *Research leadership*
- *Patents*
- *Repeat business percentage*
- *Dominance due to market strategy or monopoly*
- *Image enhancing customers*
- *Ability to execute corporate strategy*
- *Know how*
- *Copyright*
- *Trademarks*
- *Collective expertise*
- *Creative capability*
- *Leadership*
- *Management credibility*
- *Innovativeness*
- *Quality of corporate strategy*
- *Management experience*
- *Organisational vision*
- *CEO leadership style*
- *Goodwill of surrounding community*
- *Methods of managing employees*
- *Ability to attract and retain employees*
- *Market share*
- *Databases of communication*
- *Communication systems*
- *Risk methodologies*
- *Entrepreneurial and management skills*
- *Ability to execute corporate strategy*



However, given the potentially unlimited heterogeneity associated with the types of resources identified as an 'intangible asset', the classification into a few aggregate categories has, not surprisingly, proved to be much more contentious. The following is a simplified example that encompasses most thinking:

- **Human capital** (education, training and skills of the workforce – especially that of the top management and board of directors).

- **Internal structural capital** (internal governance and information systems and management practices, R&D and production systems that support product innovation and quality).

- **External structural capital** (external relationships with suppliers, customers, financial reporting systems and competitive market situation including brands and market share).

Clearly conventional accounting processes do not account for these assets and there has been unease expressed and a call for change from a number of quarters. It was the complexity together with this sense of 'unease' which drove CEST to undertake this research.

Conventional accounting performs poorly with internally generated tangibles such as R&D, brands and employee talent – the very items considered the engine of modern economic growth.
Baruch Lev, 1997

Financial accounting is an anachronism in today's knowledge economy. It is a legacy of the industrial era and of …15th century accounting methods…The argument for intellectual capital accounting is therefore growing strongly:
- *It more truly reflects the actual worth of a company.*
- *Demands are growing for effective governance of intangibles, of which social and environmental reporting is already evident.*
- *What gets measured gets managed – it therefore focuses management attention on protecting and growing assets that reflect value.*
- *It supports a corporate goal of enhancing shareholder value.*
- *It provides more useful information to existing and potential investors.*
- *It makes for more efficient stock markets, in that investors are better informed of the underlying business fundamentals, and thus price fluctuations are minimised and the long-term cost of capital reduced.*

David Skyrme, 'New Metrics: Does it All Add Up?' in Despres C & Chauvel D (eds)* Knowledge Horizons *(2000).

(Traditional) Accounting makes the assumption that value and money are the same thing and they have a very elaborate and very precise system to deal with money in a very correct way. But if you are going to relax that you are going to go to general value accounting. There exists methods and therefore that is an interesting area to pursue.
Goran Roos, Intellectual Capital Services, 2000

Investment dynamics

Before discussing the findings of the project, it is as well to consider the 'territory' we are talking about. What are the underlying information and influence flows which combine to make up the equities market in London? Let us take a look at the situation from the investor point of view.

The ultimate purchaser of a stock is an investor. Although there are many types of investor – the institutional investor, the private investor, the corporate investor etc – in today's market it is predominately the institutional investor that invests the majority of funds in FTSE companies, and more specifically it is the large company and aggregated private pensions which form the largest part of these funds.

Company pensions as well as private pensions are managed by fund managers acting on their behalf. These fund managers buy stock as it is issued (if they think it is a judicious purchase), and sell when they feel the stock is no longer beneficially contributing to the fund's portfolio. In these decisions they are guided by their in-house analysts: the 'buy-side' analysts who work for the fund managing company.

The stock is made available by merchant banks that act to ensure liquidity in the capital markets. Working for these banks are the 'sell-side' analysts. The sell-side analysts provide advice and guidance to the investors who purchase stock from the banks they work for. The idea is that the quality of analysis available from a bank is one of the factors that influences an investor when he or she chooses the bank from which to purchase stock. So-called 'Chinese Walls' are implemented internally within the merchant banks to prevent conflicts of interest interfering with the objectivity of these sell-side analysts. Until a few years ago, the number of sell-side analysts was significantly greater than buy side.

The analysts and fund managers make decisions based on information given out by the companies they are investing in – both formally and informally. Figure 1 on p8 shows how this simplified view of information flow works.

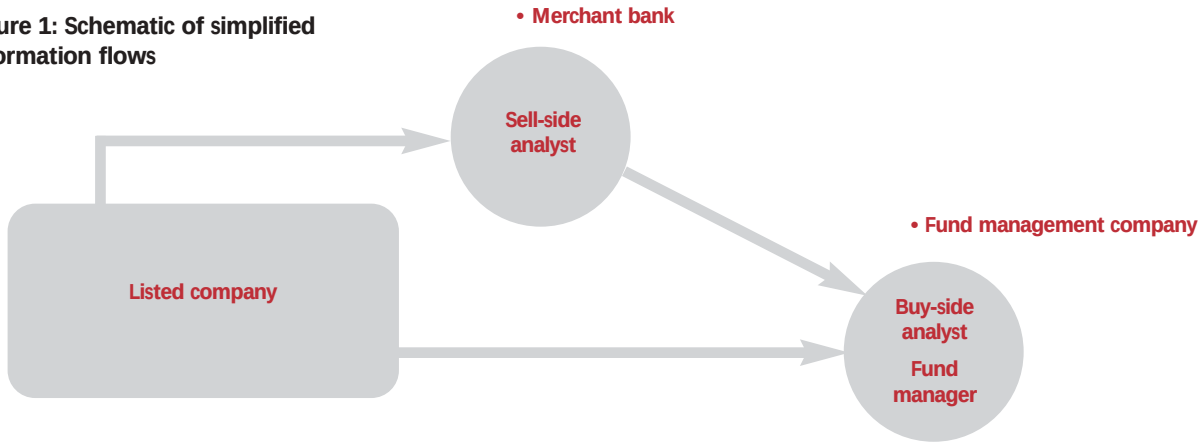
Sell-side and buy-side analysts put a lot of effort into each stock they follow. An analyst can realistically only follow a handful of stocks with any accuracy. Because of this they tend to be clustered around particular industries (utilities, oil and gas, pharmaceuticals, etc).

Stakeholders and influencers include: companies, competitors, sell-side analysts, buy-side analysts, fund managers (and their clients), private investors, the media and other commentators, and of course the 'market' as a whole. All of these take influences from each other as individual peers and as a group and subgroup.

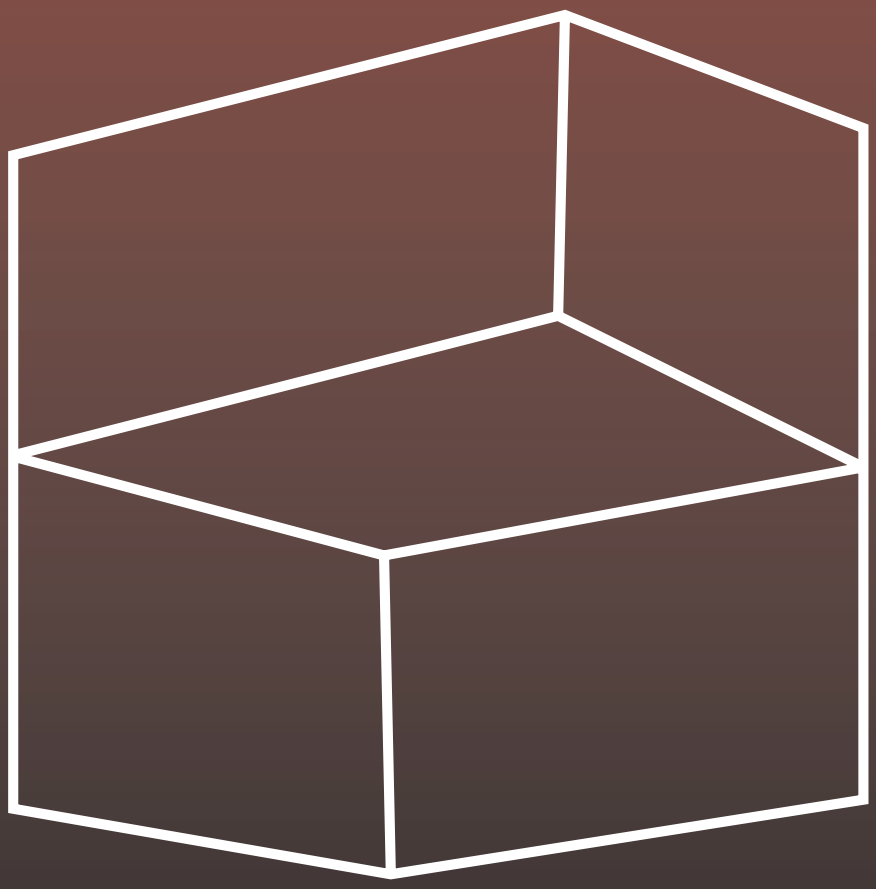
The strengths of the influences are very difficult to determine with any precision: different observers place differing importance on different influences. For example, the technical analysts (and the investors who place more store by these) look on the behaviour of the market as a group with its internal positive feedback loops and try to predict the future based on the past, rather than look at individual companies. On the other hand, value investors look closely at the fundamental long-term cash generative capabilities of individual companies and invest in those that they believe will pay dividends to justify investment.

Each of these 'observers' work in and effect the overall workings of the market. It is because of this 'observer paradox' that understanding (and thus predicting) the market is so difficult.

Figure 1: Schematic of simplified information flows

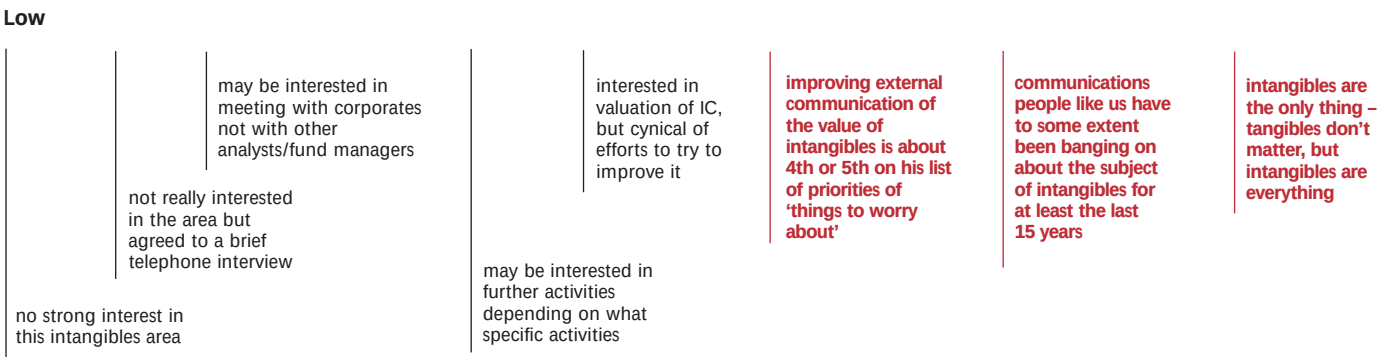


Summary findings from the ‘two sides of the fence’



Summary findings from the 'two sides of the fence'

Figure 2: Level of interest in valuing intangibles in: ● City interviewees ● Corporate interviewees



The view of intangibles from the City

There were varying levels of interest in the subject of valuing intangible assets. While a few subjects who were contacted said they were very interested, an equal number said they had no or little interest. Those who agreed to be interviewed and whose views are captured in this research, however had some level of interest. It is worth noting here that this general 'lukewarm' interest is at variance with the level of academic and policy debate on the subject in many countries, and the high level of interest uncovered by the finance director.

Few City interviewees felt that the difficulties in communicating and measuring value were susceptible to a solution. Many were openly sceptical of the efforts currently underway to improve the measurement and communication of this value. There was certainly marked antipathy to any form of standardised accounting and reporting in this area.

There also seemed to be a low level of awareness of the significant academic, policy level, and leading-edge thinking in the area of measuring and reporting intangible value. For example, few analysts or fund managers claimed to be aware of the work at Skandia, which publishes a parallel balance sheet accounting for intangible assets.

Some analysts and fund managers were openly hostile to the new thoughts about intangibles assets and valuing of ideas and innovation. One utilities analyst said he actively 'marked down innovation' in the companies he was tracking as evidence of management doing interesting rather than important work (the logic here being that investors want to see efficiency and cost control in utilities rather than innovation and new thinking). This perhaps reflects the highly regulated nature of this sector.

But if we compare to the corporates…

Almost all of the corporate players were emphatic in their response to 'Are intangibles important?' saying that intangibles were absolutely central to the success of the business.
We see the comparison of views expressed on the subject in Figure 2 above.

While almost everyone felt that intangibles were of central importance, what the most important intangibles consisted of varied from sector to sector and even within sectors between companies.

- **The food and drink companies** felt that their brands were by far the most important intangibles. One interviewee in this sector said that *'intangibles are essentially brands'* and that *'value is largely created by brands'*. Sophisticated procedures have been created to maximise brand value (equity) and the cash that can be generated on the back of this.

- **The media sector** said that brand was important, and that they were assets that needed to be 'sweated'. Also important was the 'talent' – specifically individuals with great creativity.

- **The software players** also claimed that 'human capital' was of great importance but this was the quality of the programmers and analysts as a whole, the ability to deliver as a team, rather than the creativity of individual 'prima donnas'. Secondly, they also emphasised the importance of its relationship with its customer base, as most of its revenues came from expanding its offering to existing customers rather than acquiring new ones – customers being key because, in a sense, they drive the quality of workers and the quality of the processes.

- **The pharmaceutical sector** spoke of workforce as being important. However, this was predominantly the R&D part of the company. R&D capability is a tight mix of quality of workers and the quality of the processes. Perhaps surprisingly, brand was seen as a significant asset, but only for 'over-the-counter drugs' based companies. This will become increasingly so in future as 'end users' (patients) start exerting greater influence over drug dispensers and prescribers. In short, a strong brand at product level can sometimes protect against generic drugs to an extent when a drug comes off-patent.

- **High technology and telecommunications companies** mentioned brand as an important asset. Telecommunications mentioned R&D as important, emphasising that speed was the key advantage in this sector, with the total lifecycle of a product from idea to death as being as short as 18 months (c.f. the much greater lifetime of pharmaceutical products). Licences are clearly important to telecommunications. The customer base was also mentioned by some of the interviewees, and clearly this is a measure that the City uses in valuing some communications companies, particularly those with a mobile franchise.

- **The financial sector** saw that its relationship with its customers and its customer base as a whole was its most important intangible asset.

- Finally, **the defence sector** saw that its major intangible was accumulated intellectual property; insight and understanding that it could derive on one project which it could then use to increase the quality at a lower cost for other projects. Such accumulated knowledge also played a role in permitting the company to enter non-related areas e.g. encryption knowledge was now useful in the internet space.

While all interviewees stressed the importance of intangible assets, tangibles can still be centrally relevant. Some companies highlighted the importance of their tangible assets. Examples of these were: the oil and gas company which has significant capital tied up in its processing capability as well as the exploration acreage which can be viewed as an effectively physical asset; and one of the telecommunications companies which saw its own physical network as being hugely important and essentially incapable of being replicated easily.

A final point that should be emphasised here is how much more the corporate players were concerned about intangible assets – controlling them, understanding them, and measuring them – than the City players. It is clear that the behaviour and control of intangible sources of value creation is uppermost in many finance directors' minds, as it is in the minds of many other senior functional managers (R&D, marketing, etc).

Figure 3 on p10 gives an indication of the spectrum of views on the potential for practical improvement of valuation processes.

As explained above, intangible assets are generally seen as, if not the fundamental drivers of shareholder value and cash flow, at least contributing strongly towards them. There were three ways in which intangibles were seen by the corporates as contributing to value.

- **As a fundamental source of cash flow and value in itself**. Thus a brand for a food and drink company is an asset that directly generates cash (via the actual product that is being sold). The asset needs to be nurtured so as to increase its value. The brand also has a halo effect in customers minds which draw them to the portfolios of products and sub-brands.

Figure 3: Confidence in improvement of valuation processes in: ● City interviewees ● Corporate interviewees

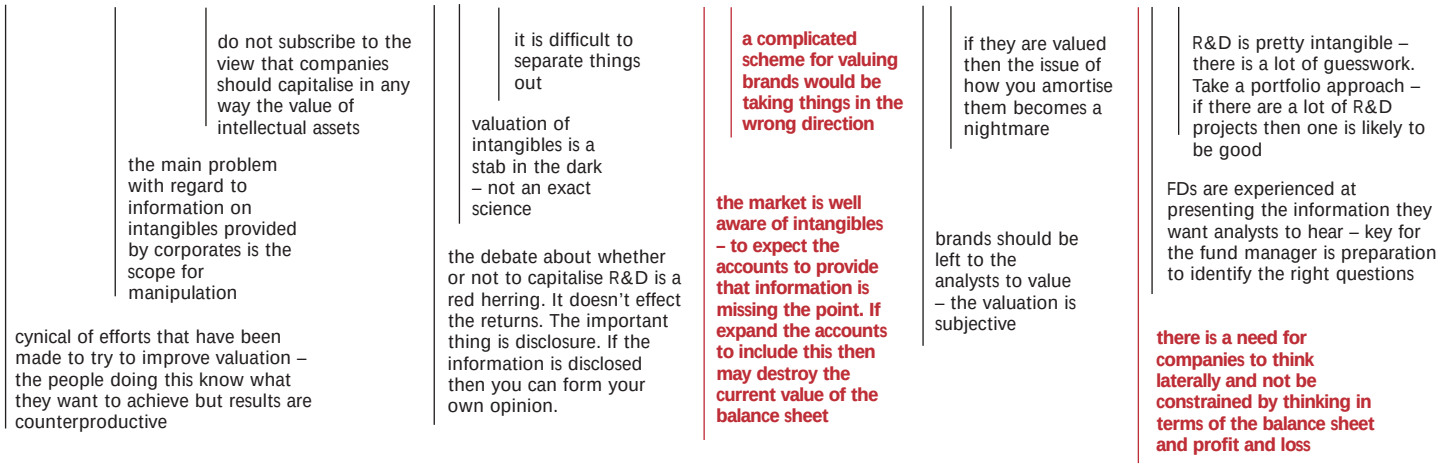
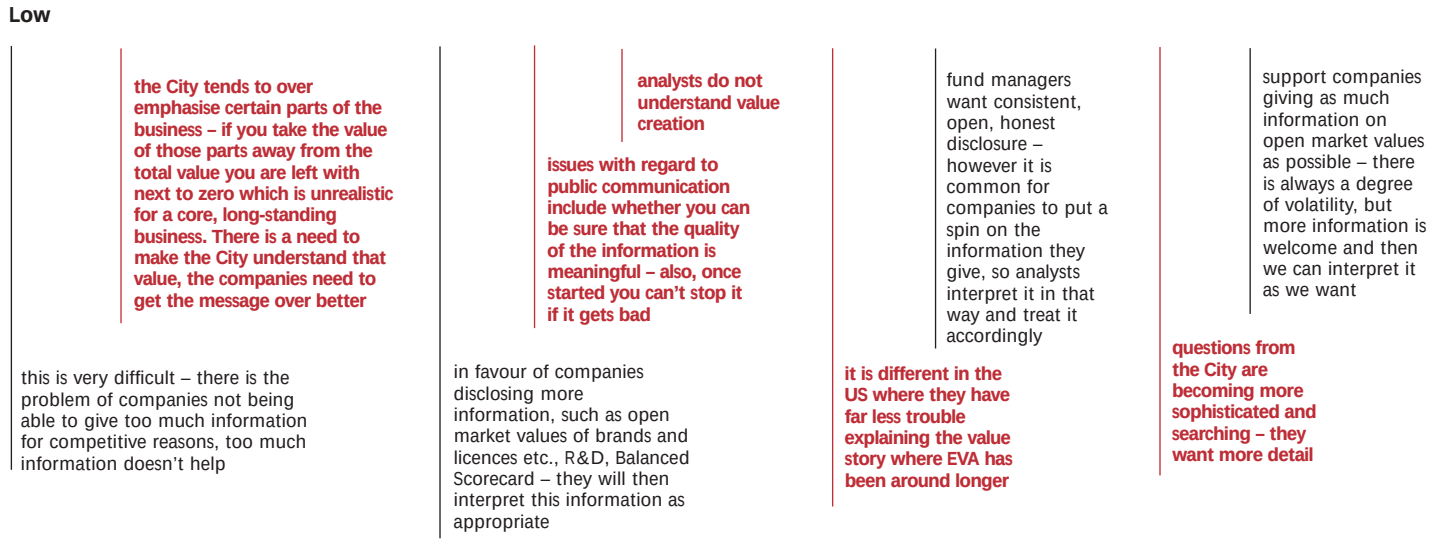


Figure 4: Sense of confidence in communication in: ● City interviewees ● Corporate interviewees



- **As a source of new cash flows.** Thus R&D capability leads to the creation of new product streams that will generate cash in due course. The better the intangible asset (R&D capability), the more efficiently it will generate new products, and the better sources of cash those products will be, through their relative competitiveness. One interviewee stated that *'intangibles will allow us to be first to market with integrated solutions, they enable us to be innovative and create visionary approaches'.*

- Perhaps the most valuable intangible assets are **those that lead directly to revenue –** in the list on pages 10 and 11 the brands of the food and drink companies. It is not surprising perhaps that it was in these companies that we saw the most sophisticated understanding, measurement, codification, and management of intangible assets.

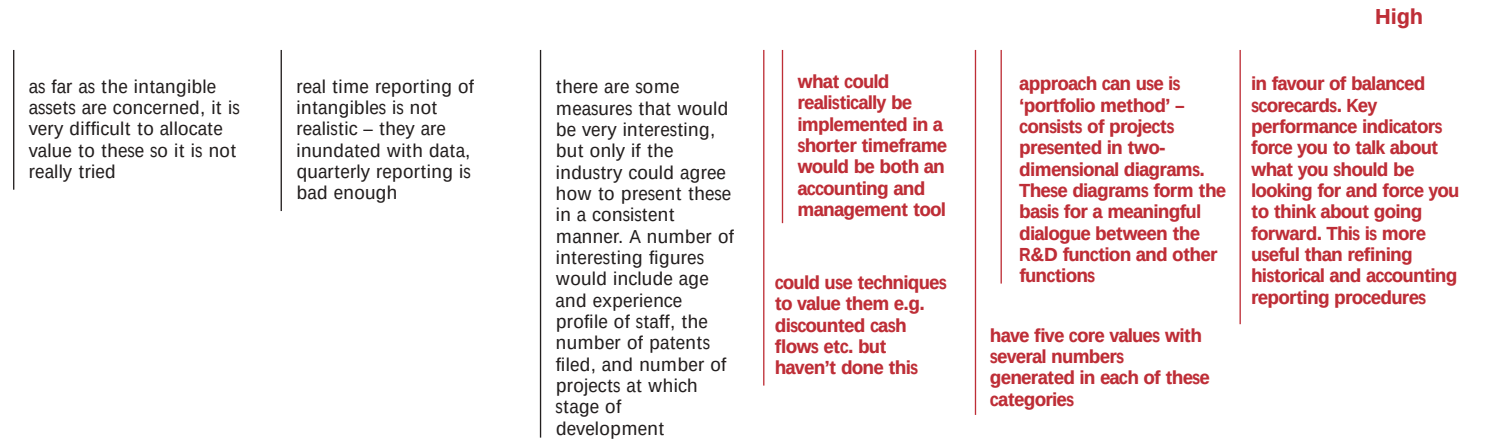
However communicating is a different issue

Most companies interviewed did not formally communicate the value of the intangible drivers of value to the City. Two main reasons for this are:

- **There is no benefit to the company** as only a few current senior analysts understand some of the ways of reporting on the value generated by individual intangibles, such as Economic Value Added™ (EVA).

Indeed, there is a sense that to do so would be dangerous – as one interviewee said: *'We do not communicate our economic value added approach to the City. The communication risks are too high as there is a danger of misunderstanding by the City'*.

- A fear that **formalised reporting of certain indicators would 'make a rod for their own backs'**. In other words, a measure that is reported and used to demonstrate the value creation of an intangible asset would have to appear to continue to



increase, independently of whether it really was showing increased value. As one financial controller said:

'Once you start, you can't stop if it gets bad!'

Figure 4 gives the flavour of how the two communities view the challenge of improving communications on intangibles.

As a result of these concerns, reporting in the financial statements concentrates on historic cash flows. Intangibles where they are dealt with tend to be mentioned in the report of the CEO.

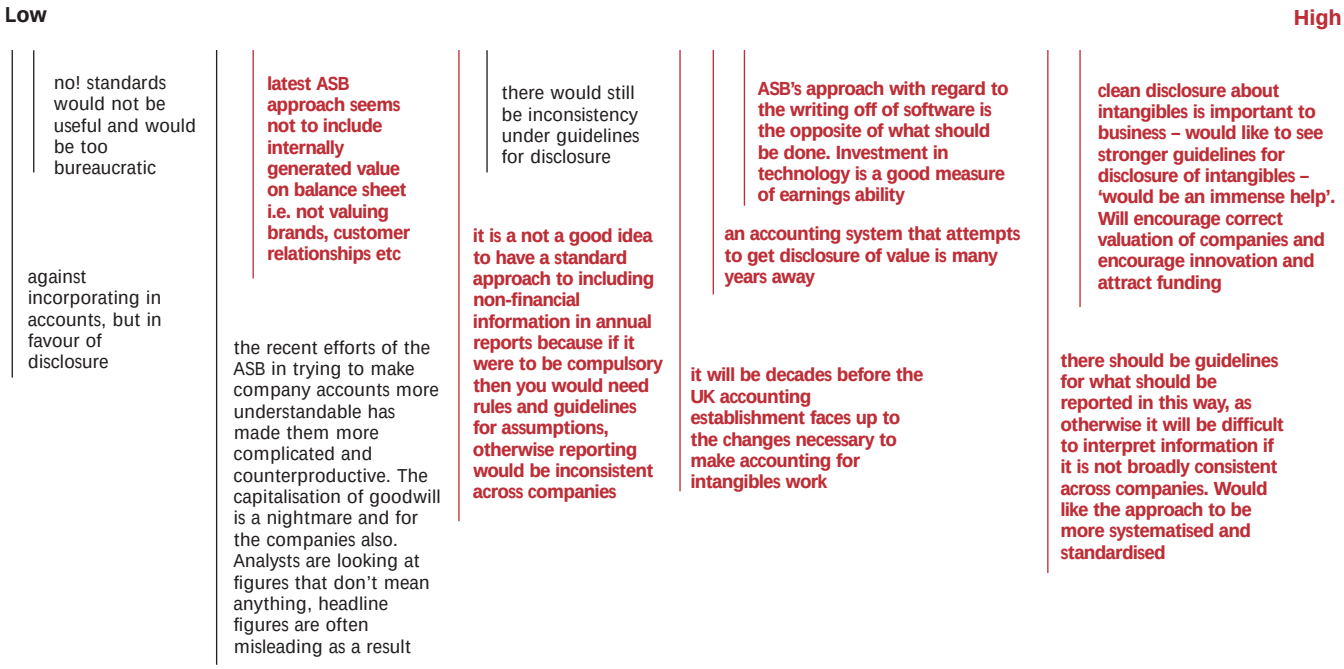
There was recognition however that analysts are becoming more interested in the non-tangible aspects of businesses. Analysts are now asking more probing questions relating to these non-financial and not formally reported aspects. Overall the analysts want to know the effect of intangibles on cash flow. This is being addressed by most of the companies interviewed through their regular investor meetings.

Finally, the question was raised of whether the reporting of intangible assets should be formalised by a statutory body such as the ASB or its US/international equivalent.

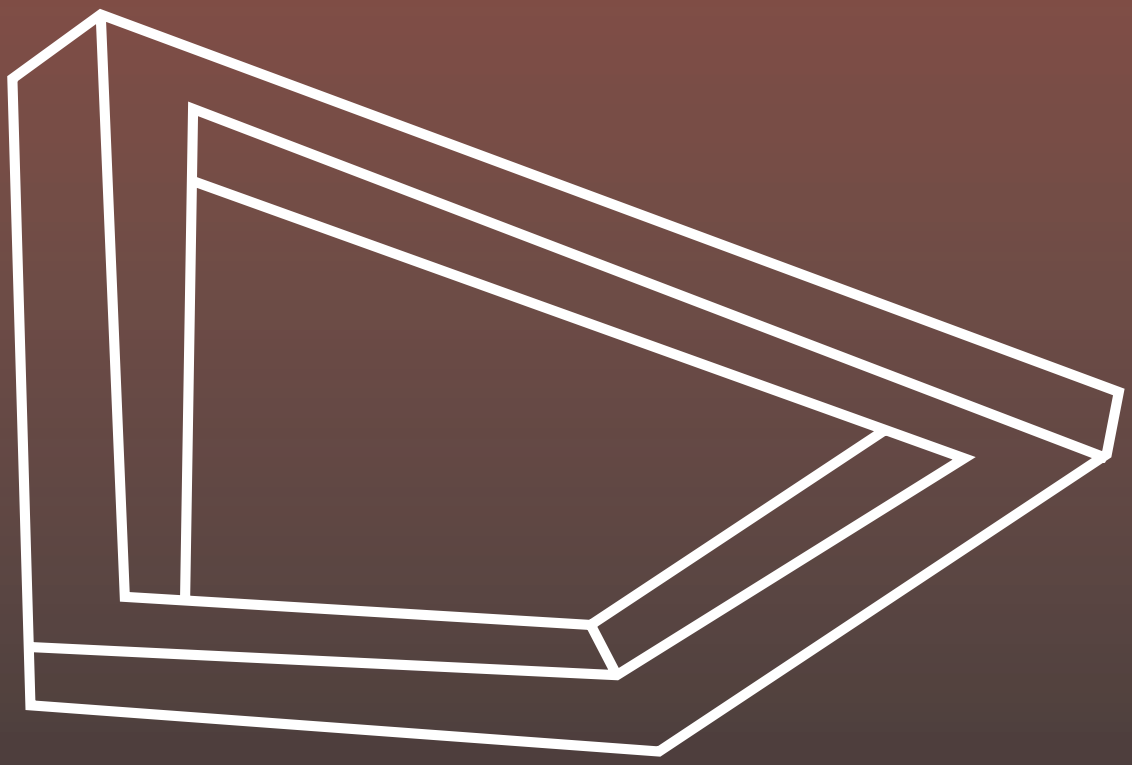
There was a clear message that although formalised reporting (such as recognition on the balance sheet) *'Would be going in totally the wrong direction – instead greater focus should be given to the cash flow'*, there was to some extent a desire to get some guideline and consistency, *'More non-financial reporting would be helpful and guidelines, but not standards, are necessary to achieve consistency!'*

It should be said that more interviewees were in the first camp than the second, and taken with the lack of enthusiasm of the City for formalised reporting, there is not a great desire currently for regulations in this area. Figure 5 on p14 provides an indication of the spectrum of views.

Figure 5: Interest in standardised reporting/regulations in: ● City interviewees ● Corporate interviewees



So how do we evaluate intangibles?



So how do we evaluate intangibles?

Corporate perspective – a range of approaches

While all companies claimed that intangibles were essential to the success of the enterprise, only around half had any positive approach to measuring, reporting and actively managing these assets.

A number of approaches were described for the measurement of intangible assets within companies. With the measurement comes management – and a number of mechanisms were revealed to ensure that the measured quantities improved.

What amounted to essentially three positive approaches were described in the interviews.

- **Not measured (measurement is pointless or even damaging)** While intangible assets are important in the creation of value, today's industries are typically characterised by rapid growth and change which makes the measurement of intangibles difficult. For example, one interviewee said that the introduction of key performance indicators (KPIs) is of minimal use if the basis of the business changes on a rapid basis.

- **Measured but not linked to shareholder value** Intangible assets are important and for that reason we measure these. However, we are not able to, and so do not, explicitly relate these measured quantities to financial quantities such as cash flow or value creation. These companies typically used KPIs or Balanced Scorecard (BSC) approaches along the lines of Skandia, but usually in a somewhat simpler way. Some of these tied management and staff remuneration to their performance against their KPI of BSC targets, and at least one reported the results of the exercise externally.

- **Measured and directly linked to shareholder value** Intangible assets are important and for that reason we measure these and furthermore tie this measurement directly to generation of shareholder value. Typically one of two approaches is used. The first approach is to use the Economic Value Added™ or 'Economic Profit' approaches to calculating shareholder value, for not only the enterprise as a whole but also its constituent parts. The second approach is to measure the net present value (NPV) of particular project arising from especially R&D projects. This is a discipline that exists to a certain degree in the pharmaceutical sector and is starting to be applied in the research-focused part of the high technology sector.

All felt that the existing formal reporting mechanisms left a lot to be desired. Many signalled that the balance sheet was irrelevant, though obligatory. Others pointed out particular anomalies regarding its treatment of intangibles. A particular gripe was the way that acquired intangibles such as brands were explicitly valued (or at least given a price) on the balance sheet in the form of 'goodwill', whereas organically grown assets are not.

The fundamental tenet of the City – 'cash is king'

Many of the analysts interviewed seemed to think that the balance sheet is of little or no use to them in assessing the value of a company. These take the view that cash flow is far more useful, with value consisting of the money that will be generated by the enterprise, rather than the assets and liabilities that the company happens to have.

These analysts thus consider that the value of a company consists purely of the value of future revenues discounted to take account of the time value of money and a small number of other risk factors. This is the net present value of the future discounted cash flows (i.e. NPV of DCF). The enterprise is a cash-generating vehicle, and the value accrues from its efficiency in generating cash.

Of course, it is not possible to accurately account for 100 per cent of an organisation's cash flows over the next five years – far too many unknowns are involved. However analysts are adept at forecasting cash flows with relatively high levels of confidence. The value derived from this calculable NPV accounts for an underlying value of the company as a cash generator. This underlying value is not the total market value of the company but does represent a significant percentage. The difference between the underlying value derived from calculating the NPV and the overall market value of the company is explored further in the next section.

There are varying levels of sophistication in this approach. One of the most sophisticated is in the pharmaceutical sector. Here the cash flows to be expected from individual drugs can be calculated – these are then aggregated to arrive at the value of the company as a whole. Adding the values of the drugs' NPVs together gives a financial NPV of the company. This does not lead to the total value of the organisation as determined by the markets (see the next section), but it provides the financial underpinning of the value and generally amounts to between 60 per cent and 75 per cent of the overall worth of the enterprise.

Pharmaceutical analysts have well recognised and mature ways of predicting the cash flows from particular drugs. The sizes of markets can be estimated from publicly available epidemiology figures, and well founded estimates can similarly be made for the other factors that go into calculating the DCF. Other sectors

Example: Factors used to derive the NPV of a drug (which may not be available on the market for some years):

- **the estimated size of the particular market (i.e. number of prospective customers/patients);**
- **when the drug will be released;**
- **the spending power of the market;**
- **the percentage coverage that the drug will take (will it take 50 per cent of depression control market or 5 per cent?);**
- **the likelihood that the drug will pass all the regulatory hurdles before it gets to the market. Thus a drug that is being tested on animals might be viewed as having a 20 per cent chance of getting to market, whereas a drug that is approaching the end of its final 'phase 2' clinical trials might be viewed as having an 80 per cent chance). These factors are then 'discounted', primarily according to the future date that the revenues will accrue. Other discounting factors that could be used include: where the enterprise is based and where will it be marketing (one analyst used different discounting factors for US, rest of OECD, and Rest of World companies reflecting the relative strength and underlying viability of their economies).**

are more difficult to predict. For example, the value of telecommunications companies is tied up with the likely development and growth of the market. This is much more difficult to gauge than disease profiles – and indeed most estimates that have sought to predict telephony growth or forecast the split between data and voice communications have proven to be inaccurate in the past.

Some analysts who were interviewed expressed a desire for more help to be provided by the companies being analysed in making sensible forecasts of market growth and development. 'They know this stuff far better than we do' was a view held by some who wanted that knowledge to be shared with them so that their analyses could be more accurate.

It is possible that increased credibility of a company's cash flow projections would come from a more reliable understanding of the market's development, and would in turn lead to a higher value for the company. However, this was not explicitly stated.

In none of the discussions on calculating the NPV, and thus the underlying value of the company, are intangible assets explicitly noted or recognised. Equally, neither are tangible assets taken into account for valuation purposes. This is why many analysts and fund managers claim that the balance sheet is not useful in making valuation judgements.

A contrasting but less common view (than basing valuation on NPV) is that the balance sheet can be used to determine value in principle but that in practice it doesn't record the elements that are of prime interest in modern enterprises. This view sees it as the analysts' job to 'repair' the balance sheet and 'add in the things that the accountants have taken out'.

A highly developed form of analysis that attempts to achieve this is CROCI – cash returned on capital invested. The key factor here is the capital invested and the assets that have been created as a result.

The aim of CROCI valuation is to enable the cross-sectoral comparison of very different types of enterprises – those that are largely based on the use of physical assets and those that are knowledge based.

In other words, identified assets are good to assess the fundamental value of a company when future cash flows of all companies become more uncertain, for example in a recession.

Valuation versus evaluation approaches by the City

As noted above, the calculation of the underlying observable NPV accounts for most, but by no means all, of a company's market valuation. Various figures were quoted for the 'accuracy' of purely financially calculated valuations (both based on NPV and CROCI) of between 40 per cent and 80 per cent of overall market value – the other 60 per cent to 20 per cent coming from elsewhere.

One buy-side analyst described the way a typical analyst or investor approaches the task of selecting a company to invest in: the decision as to whether a company is a good investment or not has three elements.

- **Strategy** – does the company fit in with the overall portfolio and investment strategy of the fund at that point?
- **Valuation** – what does the calculated NPV give as the underlying financial value of the company?
- **Evaluation** – how does the analyst rate the company as an efficient engine of revenue generation? The three elements give a picture of how attractive a particular investment is – which can then be compared to alternatives.

The strategic fit, valuation, and evaluation approach seemed to fit with most of the interviews and is a useful framework to use when talking about the findings of the interview process.

The strategic fit dictates whether it is appropriate for the fund in question to invest in a company of the type being investigated. It might be imagined with the large spread of portfolios and funds around that this last part averages out to nothing (i.e. what is a good fit for one fund will be a bad one for another). However, there are clearly overall trends and cycles in the marketplace: some stocks are known to be cyclical in their appeal and others become 'flavour of the month' for a time (such as the recent internet stocks). Over time, given an efficient market, these strategic factors will tend to zero. It is difficult for a company to influence the strategic element – either the sector in which it is placed is in favour or it is not – although it is possible to 'jump on bandwagons' and benefit from this to a certain extent.

The valuation gives around 40 per cent to 80 per cent of market value (the value currently placed on the company by the stock markets it is listed on), derived from the purely financial calculations (predominantly NPV of DCF calculations – on confidently estimated future cash flows). As the valuation is

derived from cash flow forecasts, neither tangibles nor intangibles are relevant (excepting the CROCI methodology which although not uncommon is not the prevalent approach).

The evaluation provides what is essentially the remaining portion of the market value (amounting to 20 per cent to 60 per cent of this value). There are a host of factors behind this part of the value – many of which are related to intangible 'assets' or other forms of knowledge-based value creators. These are discussed in the following section.

Going deeper into 'evaluation'

The evaluation element is not nearly as well structured as the valuation element. It is more difficult to explain and to theorise about. Nevertheless, there are a number of factors that were mentioned repeatedly during the interview process that contribute to the evaluation, and these are laid out in this section. All of these elements are either explicitly intangible assets or are related to them, and in many ways are the major findings of the project.

Management strategy

Management quality and strategy came up repeatedly. This tended not to be regarded explicitly as an asset, but of central importance to the whole enterprise. Indeed, for some analysts, more conventional intangibles are all tied into this one 'management quality' variable. For example, one maintained that the quality of the R&D programme for a research-based company *'would be a reflection of the management team'*.

Not only must the management strategy be sound, but executed and that this must be well communicated to the market. In particular some analysts wanted more than assertions – rather, an explanation as to why the strategy being pursued was better than others, and how it would translate into greater cash flow.

Exceptions to this were quoted – one Scandinavian clothes company was used as a good example of a company that said very little about its strategy, but always gave good results, so they were liked by the market anyway.

Not only must the management strategy lead to increased cash flow in the longer term; it must be seen as promoting the health and value of the company in the longer term. An example was given in one interview of a pharmaceutical company that invested money in sophisticated financial instruments and on the stock market. Although the investments made had been successful yielding good returns, the company was marked down by the analyst, who indicated that pharmaceutical companies are invested in to develop, make and market healthcare products, not to play the stock market!

Management strategy is part of the 'evaluation' element: it is not explicitly factored into the financial value of a company, as it is too subjective. Analysts can and do often make errors in their judgements of the capabilities of a management team. An example given was of a consultancy that was formed and run by a management team with a good track record – in fact the company then performed badly.

Efficiency in use of intangible assets

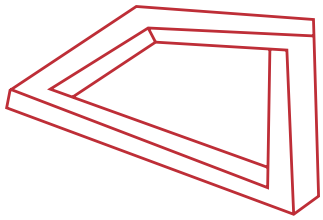
A few analysts and fund managers maintained that although the value generated by individual assets – both intangible and tangible – is not calculated explicitly (i.e. the value is ascribed to the company, not its assets), the costs of intangible assets are relevant. This is clearly important for the CROCI approach where the volume of capital invested in all manner of 'assets' must be known, for the calculations. More generally, the spend on intangibles was seen as a general measure for the efficiency of operation of these elements of value creation.

It is useful for an analyst to see what is being spent in a number of key areas. The analyst can then take a view as to whether this is reasonable, or too high given the expected return. This decision will be highly subjective and related to a great number of other factors (including the industry average, the relation of this spend on intangibles to corporate strategy, past evidence of value generation as a result of spend in this area), but the cost information is needed as a firm figure on which to base this judgement. This area of discussion arose several times – it would seem to be an area of some frustration to a number of analysts that they often cannot access these costs.

A number of areas were quoted as being of particular interest – where the costs of intangibles were wanted. These were:

- research and development;
- licences;
- sales force and marketing function; and
- brand development and maintenance.

The difficulty that came up a number of times was that even if the costs of a particular area of intangible value creation are known, it is very difficult to make comparisons between different companies. What is research for one company is development for another, what is covered by brand development by one



company will be swallowed into non-discriminated corporate overheads in another.

The exception to this is probably the cost of licences that are more transparent than the other intangible assets.

In the absence of common or statutory definitions, companies should at least explain what they themselves mean when they use these terms – and ascribe costs and even value generation to them.

In other words, it should be stated exactly which activities are included under the e.g. research and development heading, to enable inter-company comparisons to be made by analysts.

While costs were seen as the most important factor in the performance of intangible assets, other indicators of efficacy were mentioned. For example, one analyst said he liked to see such things as:

The proportion of people ranking this as a top ten brand, or the proportion of people classifying the goods as high quality: in other words general market research giving information on market perception of the intangibles.

Size
At least one analyst mentioned that size was rewarded in certain sectors (the one being spoken about was pharmaceuticals). In this case, the purely financially calculated value (i.e. NPV of DCF) of companies in a particular sector became a smaller percentage of the market capitalisation as companies got bigger.

One can speculate as to why this is, and it may not be the case in all sectors, but it is interesting to compare this observation with the oft-quoted remark that the majority of mergers destroy shareholder value.

Staff
Staff are clearly an asset in the knowledge economy, and an element of evaluation concerns indicators that reflect on the quality of this asset and how effectively it is used.

Staff-related issues that were mentioned by a number of analysts and fund managers include level of training, age profile, staff turnover, number of PhDs in research departments, performance incentive schemes, and so on.

While such information is useful, it will be interpreted by the analysts on a case-by-case basis. In other words, it is difficult to say whether a particular level of staff turnover is good or bad in general. For example in a consultancy, a level of turnover which might be considered high elsewhere, can be tolerated as it regularly brings in 'fresh blood'. Similarly in some sectors age can be equated with accumulated understanding of the market – in others, for example pharmaceuticals, there is a recognised falling off of the ability to do good quality research with age.

Analysts are thus looking for information in these areas, but maintain that it is up to them to make the judgement as to whether the implications are positive or not.

Management process
A factor that came up a few times that is central to the whole debate of the reporting of the value of intangibles is that management process and reporting ability itself is a powerful indicator of the robustness of the company. In other words, regular reporting of intangible assets shows that the management has a handle on the internal workings of the company and is on top of how and where value is being generated.

While similar views were given or implied in other areas, it was particularly R&D where this 'evidence of sound process' was particularly sought – possibly because the risks are higher here, or possibly because the processes described can be better understood. While knowledge management was not generally regarded explicitly, at least one analyst mentioned it as safeguarding to some degree against all the intellectual capital of the company.

This contrasts with risk management procedures and financial controls. All companies will go to great lengths to describe their risks as well managed and their financial controls as extremely tight, but it is difficult for an analyst to judge the merits of these statements.

So reporting on intangible assets in many cases might be valuable, in that it reflects on the quality of the management team, shows that they know what their key value drivers, and that they are in sufficient control of them that they are able to regularly report on them.

'Gut feel'
At least one fund manager said that most of his judgement of the merit of a company as an investment came from visiting it and getting an idea of the 'look and feel' of the company first hand. This fund manager said that it was important to speak with a number of managers – not just those used to making positive presentations to the City.

On the other hand, others said that they invested in many companies and couldn't possibly speak with them all, choosing instead to rely heavily on analysts' reports and formal corporate presentations to the City.

In fact, a spectrum of approaches is used by different analysts and investors. Some used 'gut feel' and insisted on 'seeing the whites of their eyes' while others prided themselves on their more detached and scientific approaches: deducing and testing hypotheses, 'stress testing' their findings, and so on.

As fund managers and analysts come under increasing pressure to perform and reduce their costs, we might expect the labour intensive and difficult to defend 'gut feel' approach to reduce, and the structured approach to become dominant.

The new economy – very high growth companies

As has been suggested above, the programme took place during an interesting period in the life of the equity markets. January to March 2000 saw high growth of already highly valued technology stocks – the so-called 'dotcom bubble' and how these valuations declined precipitously in the second quarter of the year.

Both this meteoric rise and the equally sudden collapse have had effects on the approaches investors have to valuations. It was clear that some fund managers were uncomfortable with the market as it was at the beginning of the year. They were being forced to invest in dotcom stocks because their clients demanded it and comparison with tracker funds made their performance seem poor.

Two approaches

Some buy-side analysts and fund managers did not try to value high risk internet stocks, but invested in them as if they were a tracker fund for those stocks.

Others used a fundamentally different valuation model for dotcom stocks as compared with stocks in the 'traditional economy'. Asset value can't be used (these companies have very few assets) or NPV of DCF (generally they will have no or negative cash flow). Instead 'real options theory' is used. This is a more sophisticated valuation method based on views of the likely size of the market, and the value of the company as a vehicle for accessing that market for a low initial investment. In short a special valuation method was used for these high risk, potentially high growth stocks.

Now the bubble has burst or at least deflated greatly, a concern was expressed by some that the value of intangibles would be downplayed for a while, and a return to cash observed. The dotcom stocks were being valued as engines of growth rather than creators of value. This has historically been the venture capitalist's view of value rather than the fund manager's – the market as a whole is struggling to come to terms with using the former approach rather than the latter as more very high growth companies emerge in the 'weightless economy'.

Development of metrics

Given the problems identified above, the development of appropriate valuation methods for intangible assets is highly problematic although there does appear to be some broad guidelines that have emerged.

- Although there are some types of intangible assets that are generally recognisable across sectors, **there are also many sector-specific intangible assets**. This suggests that the valuation of intangible assets as a source of added value should be dealt with on a sector-by-sector basis. This is confirmed by the views of many managers and analysts. The consensus viewpoint was that they thought 'universally applied, mandated reporting requirements to be inappropriate and ineffectual. When "one size fits all" it doesn't fit anybody they argue'. However, some standardisation or common framework is also desirable for the purposes of inter-company, cross-sector, or temporal comparisons.

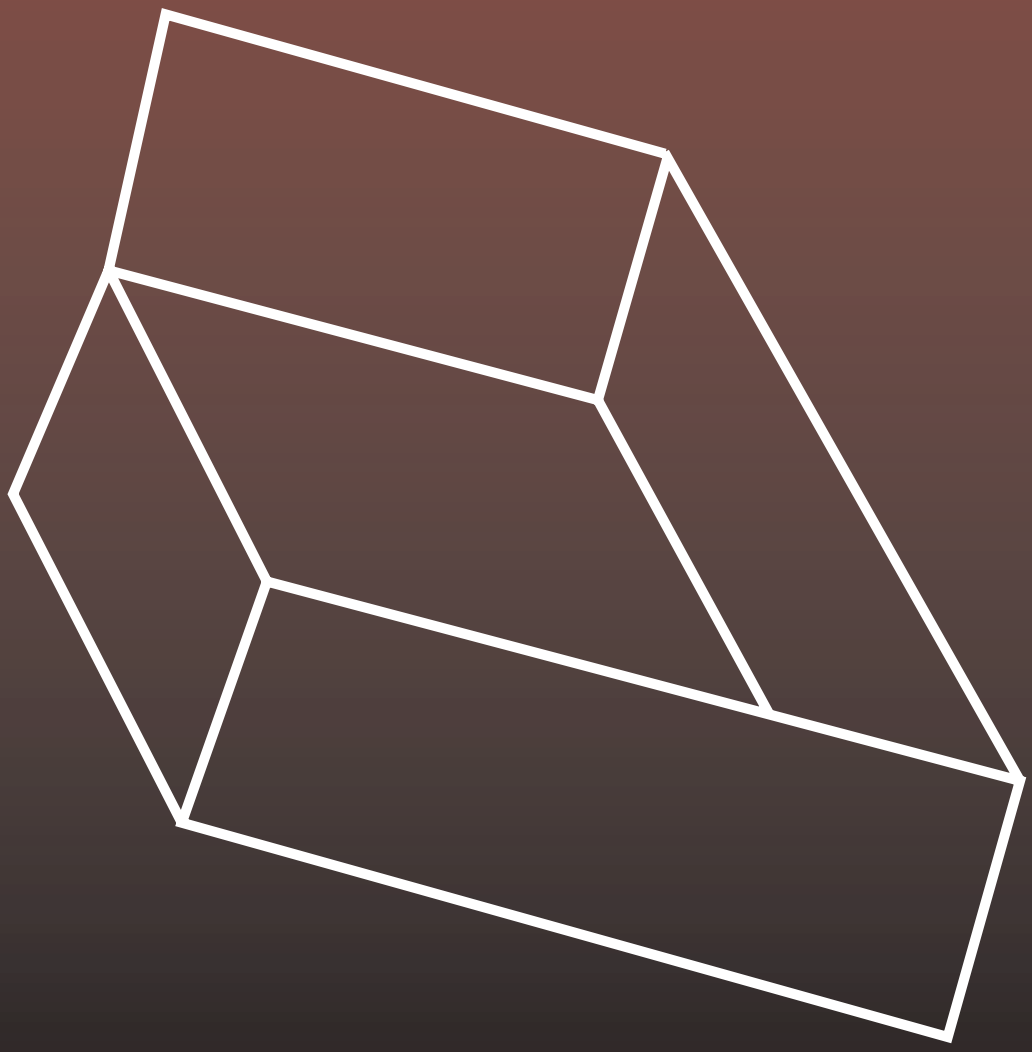
- **Many intangible assets**, especially those based on information, **are highly context specific** and any valuation method must be capable of recognising this characteristic and the accompanying possibility of sudden expiry or escalation of valuations.

- The method of valuing intangible assets will need to be **flexible enough to have a dynamic path** across circumstances/time.

- **Additivity of individual intangible assets is not necessarily a constant returns process.** The valuation may require to be subject to a suitable transformation to capture externalities, spillovers or increasing returns.

There should be a balance between the information requirements of outsider stakeholders (e.g. analysts, potential investors, etc) and the commercial sensitivity of reporting metrics that expose not only strengths but also weakness in the strategic management of intangible assets.

Conclusions and the way ahead?



It is evident that the proportion of an accurate market value of a company which is comprised of the intangible evaluation element will increase in many sectors. This is predominantly due to the speed of change of technology and markets.

It is this proportion that is communicated in a fairly ad hoc manner (although clearly not by and large unsatisfactory to the participants).

This in turn will lead to greater volatility of share prices, an aspect of the current stock market that was commented on negatively by a number of corporate interviewees. In short, intangibles and how they are communicated, are still central to stock market valuations of companies in many sectors.

It is thus in a company's interest to make the communication of the value of its intangible assets clearer (and thus reduce its volatility).

It is clear that there is no great hunger for new forms of reporting on the part of the analysts and investors. For this reason, we feel that pressure for improved reporting of intangible assets must come from the corporate side rather than from the City.

Issues to overcome

There are problems with companies measuring the value creation ability of their own internal assets – it is difficult and **it is not clear what should be measured** (or even observed without formal measurement). It should be noted that a number of companies are explicitly attempting to do this nevertheless.

There are **problems with reporting this to analysts in the round**. Firstly it is commonly considered that a number of **analysts in the UK are not ready for more sophisticated valuation models** based on the contribution to shareholder value from individual intangible assets. Secondly there is a **danger of companies creating 'rods for their own backs'** as the information reported is expected to get continuously better. This is an issue if the measure reported accurately reflects the contribution that asset makes to shareholder value creation. If it turns out to not be a good measure, in some ways that is worse as a company might be punished in spite of pursuing the correct strategy.

Give me more (or less) information

The quality and quantity of information that analysts and fund managers are looking for was difficult to determine from the interviews, in that there were a number of conflicting statements, occasionally in a single interview.

- The messages from some interviews were to the effect **that companies should present the bald facts and leave the market** as a whole (and analysts and fund managers as operators within it) **to come to a decision as to their value**.

- Others said that **they could not estimate the value of a company at all accurately without its help**, and the company needed to explain to the City its market, the spend within that market, and how the market would change and grow in the future.

- Some interviewees welcomed the idea of more information of all sorts – and thought that the idea of **a real-time corporate portal, giving regularly updated information, was an attractive one**. Others said they were overloaded as it was and did not want any more.

One went so far as to say that:

The more information which is made publicly available, the harder the fund manager's job is to do: it is our job to beat the market!

All were united in not wanting any information if it was obfuscated and difficult to understand, or if it was just 'noise' without any readily apparent use.

One interesting factor that emerged was that different parts of the City audience need different types of information. For example, one fund manager lamented that:

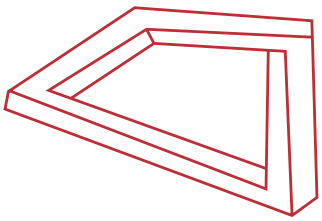
Sometimes it goes over our heads as it is too technical. The technical approach is appropriate for analysts but not fund managers. We explain to the companies that we are investors and not scientists but in many cases the presentations are still too technical.

In other words, different elements of the audience respond to different messages.

Bad news is better than no news

A number of analysts and fund managers asserted that bad news is punished, but many investors will give the management the 'benefit of the doubt' as long as they are kept informed of developments. If bad news is covered up, until it is impossible to hide any longer, the reputation of the management for honesty and integrity will be permanently damaged.

So bad news is bad, but no news followed by bad news that had been covered up is worse. No news makes investors nervous.



There are some exceptions to this last observation. A Scandinavian company was used as an example of one that never communicates with the market other than through annual reports – and is still invested in heavily as it has shown it is a good bet.

While truth is better than falsehood, and promptness with bad news better than tardiness, the right spin is important. Analysts expect all companies to paint a rosy picture of the truth. If a company gives a brutal 'warts and all' picture, analysts are likely to assume that the truth is even worse and mark it down accordingly.

Formalisation of intangible reporting

In general, analysts and fund managers interviewed were sceptical of the value of formalisation and regulating of reporting of intangible assets. As highlighted elsewhere, in general, the City takes a dim view of balance sheets, preferring to calculate value generated by the company as a whole rather than by summating the resale value of the assets.

Adding intangible assets to the balance sheet would not add greatly to its usefulness but would significantly increase its complexity.

Overcoming the sceptics

Furthermore, several interviewees seemed to despair of the amount of 'manipulation' that companies apply to their annual reports. Profit and loss as well as balance sheets are seen as being easy to manipulate which is another reason why they are often avoided. Report of historic cash flows are much more difficult to manipulate – although even this is possible. It was believed that even with guidelines and rules spelt out by regulatory authorities, such as the ASB, it would be extremely easy to manipulate intangible asset values meaning that the resulting figures would be almost worthless.

It might well be that this scepticism would reduce in time as the way in which reporting intangibles becomes more self-evident. In other words – either it is too early for regulated formal reporting of intangibles or else this will never be a useful practice.

This scepticism should be set against the point raised earlier that although formal reporting is not seen as important in itself, it is viewed favourably in as much as it indicates that there are sound management processes in place and that the management is on top of how the company is performing.

Some analysts are opinion influencers

The last significant point that should be raised in this section is that there is much benchmarking and cross-comparison within the analyst community itself. Analysts often spoke not of their own approach, but that of analysts as a whole. They also seemed aware of the different approaches used by different groups ('XXX is the queen of DCF', 'YYY focuses on Economic Value Added™ approaches').

In particular a number of individual names were mentioned by several analysts and fund managers from different institutions. These are key individuals within the City and are watched keenly by others. These lead analysts can be viewed as the main influencers and opinion formers that are tracked by those who have a lower profile.

These opinion formers tend to be individuals rather than institutions and maintain their reputations as they move between banks and stockbrokers (which happens).

One implication of all this is that 'educating' the market to view the reporting of value creation as important from intangible assets can be more easily done by targeting the opinion formers that are pertinent to the sector in question. This is an important point upon which to ponder, as work in this area continues apace.

Too important not to measure and manage

Despite the complexities and challenges in this subject, the majority of corporate players had a concern that they should have a better handle on some of the basics. Their concern was to start a process of understanding, which would enable them to feed understanding of intangibles into investment programmes and be able to prioritise and see real returns against allocation of capital in these areas. The development of more structured communication processes to the city may be a challenge explored in due course.

In this field, because we are all at the beginning of a steep learning curve, it is better to be roughly right rather than precisely wrong. The time is right for organisations and policy bodies to develop their understanding of the knowledge economy, to experiment with new metrics, but above all to enter into constructive dialogue that will guide them more clearly to a prosperous future, however that is gauged. If that means doing and succeeding, but not measuring, then who is to say that it doesn't add up?
David Skyrme, 2000

Sources

The primary source for this research has primarily been an interview programme with City and corporate players.

The following City organisations provided interviews and on several occasions more than one individual was interviewed from each organisation.

Baillie Gifford
Barclays Global Investors
Clerical Medical
CSFB
Deutsche Bank
Edinburgh Fund Managers
Gartmore Asset Management
Goldman Sachs
Hermes Fund Management
HSBC
Lehman Brothers
Morgan Stanley Dean Witter
Phillips and Drew
Prudential Portfolio Managers
Salomon Smith Barney
Singer and Friedlander Investment
SG Asset Management
Warburg Dillon Read

Corporate interviews were held with Finance Directors of FTSE 100 companies from the following sectors:

Pharmaceuticals
Software
Defence
Food and drink
Financial services
Oil and gas
Media

Other sources:

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Sveiby, K.E. (1998) Measuring intangibles and intellectual capital – an emerging first standard. Accessed on 1/24/2000. http://www.sveiby.com/EmergingStandard.html

Skyrme, DJ (2000) New Metrics: Does it All Add Up? in Despres, C & Chauvel, D *Knowledge Horizons* (2000)

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CEST, the Centre for Exploitation of Science and Technology, is a charitable trust promoting the uptake of innovation by industry. Their deliverable is 'collaborative advantage' from assembling consortia of stakeholders around areas of opportunity.

Acknowledgements

CEST would like to acknowledge the support of the following organisations for making this project possible:
BG Technology
DTI
Financial Dynamics
ICAEW
Intellectual Capital Services
Marsh
Nycomed Amersham

CEST is also grateful for the support and guidance of:
The City and corporate players who generously gave of their time in being interviewed in this research project.
Accountants Standards Board
Bank of England
BBC
CBI
GlaxoSmithKline

The views expressed in this discussion paper are those of the authors and are not necessarily those of the Institute of Chartered Accountants or the Centre for Business Performance.

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The Institute of Chartered Accountants in England & Wales
September 2001

ISBN 1 84152 073 X

Job no: 4354