Stern Stewart & Co.
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Introduction to the **Wealth Added Index** (WAI™)

A New Performance Measurement and Strategic Planning Platform

Simple, Robust, and Comprehensive

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- Improves upon Total Shareholder Return (TSR)
  1. Includes a benchmark for the required return on equity
  2. Includes all shareholders over period measured
  3. A number not a percentage
- Balances four key criteria in performance and planning
  1. Current **Value of Profits**
  2. Expected **Value of Prospects**
  3. **Financing**, new debt and equity
  4. **Required Return** on equity invested
- Builds on discounted free cash flow analysis
- Consistent with corporate finance theory
- Supplements equity incentives or performance tests

2001 Global Ranking Inside

PERSPECTIVES ON BUSINESS

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Executive Summary

This document introduces a new strategic planning platform based on a performance metric, the Wealth Added Index (WAI™), or Wealth Added, which was introduced globally in *The Economist* and separately in Denmark, Sweden, the Netherlands, and Spain[1]. Wealth Added is the excess wealth generated above expectations based on the perceived risk of the shares. It is important to recognise that Wealth Added reflects returns for all equity investors, no matter when they bought their shares.

From a shareholder standpoint, the objective is to earn the required rate of return over time. But wealth maximisation may very well be achieved by earning superior returns above what shareholders expect. Thus for the market as a whole the Wealth Added is expected to be zero, but such a conclusion opens the real possibility that many firms will create positive Wealth Added while others generate negative Wealth Added.

Wealth Added provides a platform for strategic planning, which discourages several value-reducing practices recently exposed in many organisations: earnings management, share price guidance, and free capital spending. The framework allows managers to match current operating performance and future expectations (from their competitive and organisational strategies) with financing needs (financial and treasury strategy) and the shareholder required return (corporate governance).

Wealth Added consists of four elements:

- the perpetuity value of the current cash generated, which we call **the value of profitability**
- the market's expectations for future improvement in returns, which we call **the value of prospects**
- funding of the business through debt and equity, which we call **financing**, and
- shareholders' expected return on the equity they invested, which we call the **investors' required return**.

Elegantly, all four together cover each of the six factors which, in modern corporate finance theory, account for the value of a company. The first four factors are, in simple terms, how a company is constructed, spends money, performs, and is expected to perform in future – all of which senior managers can directly influence. Add to these investors' expectations of a certain return, given the risk, and the time over which investors expect a return (the period of comparative advantage).

Manage for Wealth Added, and you manage for every aspect of value. All the 'levers' of value are contained within Wealth Added. Hence, Wealth Added is powerful, not just as a way of benchmarking company performance against other companies (a ranking), but as a financial and strategic tool.

The aim of the top managers in a company is to create growth opportunities or prospects and then convert those prospects into profitability, over time providing at least a competitive return for their investors. They must continue to attract further funding and invest in opportunities, which build the business and thus expectations of future performance, and so on, in a virtuous, value-creating circle. At each stage further funding should be easier to raise, because managers have proved they can convert investor expectations into current profitability.

Furthermore, it is a given nowadays that senior managers influence share price. When they are rewarded for Wealth Added, they are rewarded not only for delivering profitability and for creating prospects but also for balancing them against financing and investors' required return; they are motivated to create true value. Paying for success by another metric may cover only one aspect of wealth creation.

[1] In Børsen, Svenska Dagbladet, FEM / DeWeek, and El Mundo respectively.

Part I: Foundations of the Wealth Added Index

Business context – bridging the credibility gap

Thanks to creative accounting, analysts' overconfidence, and false promises of continuous over-achievement, corporate financial statements and forecasts are facing strong scrutiny from sceptical investors. More recently, such scrutiny has triggered share price volatility and collapse. Arthur Andersen and US corporations have been the focus of high-profile scandals. But in Europe too, as well as globally, we have experienced the lure of rocketing TMT (telecom, media, technology) shares, over-ambitious leverage using expensive debt, profligate 'buy' recommendations, pro-forma promises, and reporting of stock options that was anything but transparent. Some European and global executives may face as uncomfortable a questioning of their integrity as their US counterparts.

Bridging this credibility gap, or overcoming the 'governance discount' now built into the share prices of most companies, will take time, and when it happens it will come from improvements in business processes, transparency, and accountability. Investors need to believe that their agents are acting in their interests, that management processes are effective, that the incentive systems in place reward value-increasing behaviour, and that financial reports are accurate. They must also believe that the board exercises effective oversight and that annual meetings are organised in such a way as to allow investors to exert their rights. None of this should surprise, or dismay. Periods of slowdown or recession force management to reinvigorate internal procedures and controls that were largely forgotten during the era of boom-time complacency.

Take value-based management and strategy or other shareholder value programmes. During the boom, almost all companies paid lip service to these ideas in their annual reports. Many claimed to embrace the principles, but flouted the disciplines that are fundamental to delivering upon those principles. An opportunity exists to plug the credibility gap through true value maximisation and corporate governance. This paper will later show that the Wealth Added strategic planning platform allows management to improve their internal decision processes and underline their commitment to stringent governance principles.

Measuring company performance

The importance of living up to shareholder expectations when measuring and disclosing company performance now appears greater than ever. Enron, Tyco International, WorldCom and other scandals have placed corporate governance and the way performance is measured under the microscope. Every metric is under scrutiny. As the *Financial Times* put it:

> *The WorldCom fraud, after the collapse of Enron last year, will further dent confidence in company accounts and forecasts. Investors said they would now put a premium on reliable and credible management, and take more time to scrutinise accounts*[2].

The performance of a company is of compelling interest to two groups: those who invest in the company, and those who manage the company. The first group wants to measure how well the company is performing compared to other potential or actual investments. The second wants to measure its performance, in order to justify its claim to part at least of the wealth generated, through incentive schemes linked to performance. To the extent that they can prove superior performance, then they may claim to merit superior rewards.

Both groups scrutinise or justify company performance with a variety of metrics. They cover different periods – quarterly, annual, and several years. Many are accounting-based. Since the rise of the balanced scorecard, non-financial indicators have become as important as

[2] 'Investor fears raise danger of credit crunch', *FT*, June 27, 2002

financial ones. Companies usually focus on those figures that play a significant role in their annual budgeting exercise or multi-year planning process. The box below lists some of the metrics favoured by the FTSE 100. Many are drivers of value in that they only tell part of the story of value creation. Some, like EBITDA, leave out key criteria in assessing performance. Few are comprehensive. Those that assess share performance have gained in prominence in part because most executive incentive plans include shares and share options.

Key Issue No. 1: How do FTSE 100 companies currently measure performance?

- Growth in Earnings Per Share (EPS)
- Total Shareholder Return (TSR)
- Earnings Before Interest and Tax (EBIT)
- Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA)
- Economic Value Added (EVA), or Economic Profit (EP)
- Net Operating Profit After Tax (NOPAT)
- Return On Capital Employed (ROCE)
- EBIT or revenue growth
- Strategic targets
- Cash flow
- Cost or capital management
- Market share
- Brand or people development
- Generation of forward orders

Share price: at the heart of the value metric

Clearly executives cannot fix or control the share price of their company. But they can, to some extent, influence it through their activities. Investors make a judgement of managerial effectiveness. This is reflected, along with many other variables, in the share price.

Because the share price of a company best demonstrates its real value, it will always be the single most important factor in any metric that attempts to measure value. This is why share price based metrics have been widespread for some time, and have become an acceptable, indeed the preferred, way to reward the superior performance of senior managers. Doubtless pragmatic reasons such as tax advantages and exclusion of costs from the income statement have also contributed to this development.

Share prices are certainly at the heart of Wealth Added. Measuring company performance using a market-based metric would be a mistake if managers had no influence on share price. Most finance theorists today believe that, despite the undeniable importance of market- and industry-wide factors, top managers too have make an important contribution to share price development. To be sure, many investors choose certain markets and industries for their growth prospects. But investors also recognise that there are important differences between good and bad managers. Good managers use the opportunities available to generate high rates of return. Good governance commands a premium[3].

Managers individually can influence how their company is organised, uses capital and operates - and thus how investors can expect it to perform in future. In practice this means that when the rewards of chief executives and senior managers are linked to share price – using a metric such as TSR (share price changes plus dividends reinvested), or through share options - then a direct link is forged between their rewards and share price.

[3] 'Three surveys on corporate governance', Paul Coombes and Mark Watson, *The McKinsey Quarterly*, 2000 Number 4. Investors say that they would pay 18 percent more for the shares of a well-governed UK or US company than for the shares of a company with similar financial performance but poorer governance practices. A copy of the article can be viewed at http://www.mckinseyquarterly.com/article_page.asp?ar=965&L2=18&L3=28.

Key Issue No. 2: What influence do managers wield on share price?

The Nobel Laureates Merton Miller and Franco Modigliani anatomised the influence of managers on share price. They argued that six factors constitute a company's market value. Two of these are largely beyond managers' influence: the cost of capital for business risk – in other words, the required returns expected by equity investors, assuming the firm has no debt – and the time over which investors expect to see excess returns (the period of comparative advantage). Both are almost exclusively determined by the market, although the ability of a company or management team to revitalize or even reinvent the business can extend the period of comparative advantage.

That leaves managers individually able to influence only the remaining four of the factors:

- target capital structure - essentially, how much debt a company uses;
- capital expenditure;
- net operating profit after taxes, and;
- rates of return on new investment.

The last in particular, combined with the level of new capital expenditure, generates the expected future performance of the company.

Placing performance in context

The challenge was to find a measure which improved on the benefits of TSR. Our first attempt launched from the assumption that 'reliable and credible' management teams (as the *FT* might describe them) would want to be benchmarked against their competitors in the same industry, and the stock market of which they are a member – in other words, industry and national indices. Benchmarking against an industry index demonstrates how much better or worse the company is performing than its competitors. Benchmarking against a country index demonstrates how much of the company's performance is attributable to the efforts of the managers of the company – it 'strips out' the effect of the rising (and, indeed, falling) market. In short, we aimed to contextualise performance.

Without this context, a chief executive might lead his firm through a bull market with a rising – and acclaimed – share price, even though he performs worse than his company's peers. Conversely, the chief executive of a company in a cyclical industry might steer it skilfully through a downturn, but despite this, gets no credit for a share, which performs better than those of the company's competitors. This problem was reviewed in an article published in the *FT*[4]. The article described an analysis using 'benchmarked total shareholder return (TSR)' for the top 1,000 companies by market value (in US dollars) as of five years ago, worldwide, of which about 800 remained at the time of the study. (The rest were absorbed by competitors, or excluded because they had been listed for less than the five years.)

The most logical benchmark for the TSR generated by each company was the required rate of return, or cost of equity – by far the most relevant measure for shareholders. In other words, did the TSR generated by a company meet shareholders' expectations for their return? We also compared the TSR performance of companies against that of a peer group in each industry and country, using Morgan Stanley Capital International indices. These benchmarks were adequate, but not perfect.

The exercise enabled us to sort the companies into eight categories. First, the stellar performers, those companies that beat all three benchmarks: the cost of equity for their sector, their industry peers, and their country index. Second, the worst companies, which fell short of all three benchmarks. Falling between were the companies that beat various combinations of the three benchmarks. For a global company, beating your industry is more important than beating your country, because you compete for resources, staff and customers with your competitors, and because 'country' is increasingly less relevant to global companies.

[4] 'Putting the boss's achievements in context', *FT*, March 6, 2001

A soaring share price did not guarantee an 'over-achieving' TSR. In many cases, investors could have invested for a better return in companies' competitors. Conversely, some companies in commodity industries underperformed their required rate of return and country, but beat their industry – a considerable achievement in the face of given conditions. Judged this way, a clearer light was shone on companies' performance.

Key Issue No. 3: What are the limits of Total Shareholder Return?

How is Company X performing? Until now, the key market-based metric used to answer that question has been Total Shareholder Return, or share price change plus dividends reinvested. TSR is simple to understand, and simple to calculate. Understandably the measure is widely used. TSR has been an informative measure for many years, and we have built Wealth Added on it. However, there are limits to its effectiveness.

Perhaps most important, TSR does not reflect the relationship between the equity injected into a company, and the returns for shareholders which result. This is because TSR does not take into account the cash invested in a company *throughout the period measured*, only the money put into the company at the beginning and end of the period. Two companies could have consumed vastly different quantities of shareholders' money, and yet register the same TSR.

Second, TSR does not take into account investors' required rate of return: in other words, does not use the cost of equity capital as a benchmark. This means that managers who turn in a 'good' TSR may not have delivered on a company's most important challenge: to provide an acceptable return to its shareholders. Connected with this is the question, what is a good TSR? Obviously, if you are going to invest in a high-risk enterprise, you want a high return to compensate. For a company in one industry, or country, TSR may be high because of the high risk involved for investors.

Contribution of Wealth Added

However, there was still something missing. The main problem with the exercise was that it still relied on TSR, albeit benchmarked TSR (see Key Issue No. 3). The new metric had to:

- consistently reflect the relationship between the money injected into a company, and the returns for shareholders which result,
- take into account investors' required return,
- be a number – in other words, a cash figure, not a percentage, and
- reflect the risks taken by an investor, in the form of the required return.

So the challenge was to come up with a benchmarked number which was a measure of performance. Specifically, we wanted to explain the Vodafone Paradox.

Key Issue No. 4: What is the Vodafone Paradox?

Vodafone chalked up a high TSR over five years – a whopping 248 per cent – even though it overpaid for acquisitions and licences. However, over parts of the period, many shareholders experienced *negative* TSR – their shares were worth less than when they bought them.

As mentioned earlier, one valuable metric for measuring the internal value creation of a company at any one point in time is EVA, or the economic profit left after subtracting a cost for capital. Vodafone's EVA kept falling, even as its EBITDA (earnings before interest, tax, depreciation and amortisation) rose. In other words, how could a company which does so badly in terms of value creation turn in such a great TSR? What measure would truly reflect its value-destroying performance? The answer: one that included all investors' shareholdings over the period and benchmarked against the cost of equity.

Wealth Added analysis, taking into account those who bought during the period as well as those who held throughout, revealed startling wealth destruction. Most of the $145 billion or so lost between 1996 and 2001 was sacrificed to Vodafone's bids for third-generation (3G) licences and to acquire its German counterpart, Mannesmann.

Importance of the cost of equity

Central to the Wealth Added metric is the idea that companies create value for shareholders only if their returns to investors – from share-price rises and dividends – exceed their cost of equity. The cost of equity is the average expected return, otherwise known as the required rate of return, that investors require for putting their money in shares with that risk profile.

Clearly, the cost of equity will be greater than the return from an alternative without risk, such as government bonds. And the greater the risk investors bear, the greater the returns they require. If a company's returns do not exceed the cost of its equity, shareholders' capital could have been better invested elsewhere. Hence, companies which return more over time to the investor than the required return are creating value, and those which return less over time are destroying it.

This is important to managers, as well as investors. If managers fail to meet their required return, it understandably makes it harder for them to raise further capital in the future: a credibility gap has opened up with current and potential investors. For the same reason, when managers insist that their cost of capital should be lower, they do not endear themselves to investors. Fulfilling investors' expectations builds trust; without which, further investment may be slow in coming.

For Wealth Added, the required return is the cost of equity, calculated using the widely accepted Capital Asset Pricing Model. Calculate the required return of a company over the desired period, and its actual return, and the difference is the Wealth Added gained or lost. To summarise, Wealth Added Index is a period measure that reflects the wealth created for all equity shareholders over and above their risk-adjusted required return.

Benefits and drawbacks of Wealth Added

Wealth Added takes the perspective of all shareholders. While TSR inherently assumes that one share has been held from the beginning to the end of a particular period, Wealth Added measures wealth creation for *all* shareholders, including purchasers of new issues.

Wealth Added also avoids the pitfalls of those benchmarks that are relative measures within an industry. These can be misleading, since they always produce some winners, even if every company in the industry – think airlines – does badly for its shareholders. However, Wealth Added can and should be benchmarked against industry competitors, in order to learn best practices, understand what actions influence share price in the industry, or pull out exogenous industry and macroeconomic factors.

Secondly, because Wealth Added is calculated using only market data and does not depend on reported profits, it does not require access to the full company accounts and avoids cross-border accounting anomalies.

Wealth Added does have drawbacks. It is based on the share price, which can be volatile. The estimate of the cost of equity will always be debatable. And it suffers from a similar problem to TSR, in that the number will change depending on which starting and ending date you choose. By its nature, Wealth Added figures are expected to be around zero, and so can appear very volatile with positive and negative numbers depending on how a business is doing. Intrinsically, the volatility is similar to that of TSR.

Wealth Added 101 – Calculation methodology

There are two methods of calculating Wealth Added. Both are intuitive and easy to understand. The two methods are equivalent.

Method 1

WAI = Δ Market Cap – Required Return + Dividends – Shares Issued

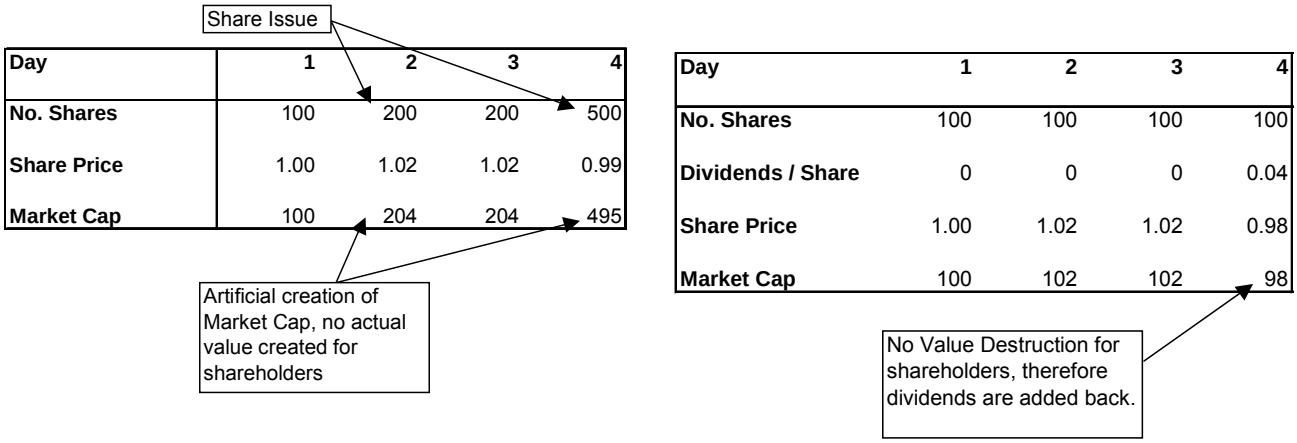
Where: Δ Market Cap = Market Cap of Period – Market Cap Beginning of Period

Required Return = Market Cap Beginning × Cost of Equity

Shares Issued = New shares x Cost of Equity (time adjusted)

Wealth Added is adjusted for dividends, shares issued, spin-offs, stock splits and any other corporate actions and the following simple examples demonstrate the need for this:

Figure 1: Example of Wealth Added adjustments



If a company issues shares during the period, perhaps to fund an acquisition, we recognise that these new shareholders have a required return and calculate that from the date of the issue.

The cost of equity calculation is based on the Capital Asset Pricing Model, for which Stern Stewart compiled a customised Business Risk Index of industry betas (beta being a measure of the risk of a particular investment). The industry beta is subsequently levered according to the company's actual capital structure.

There is a timing adjustment for dividends, share issues etc. This is made using the cost of equity and/or the inflation rate. Technical issues relating are discussed in the appendix.

Method 2

The second method requires less data input, but must be calculated on a daily basis or all the necessary corporate actions will not be taken into account. Formulaically,

$$WAI = (TSR - CoE) \times \text{Market Cap}_{\text{Beginning of Day}}$$

This calculation could be done on an annual basis, but this is just an approximation to Wealth Added as it would not take account of the required return on new equity issues.

Having calculated the daily WAI figures a timing adjustment must be made before they are accumulated. This is made using the cost of equity and/or the inflation rate. Technical issues relating to the definition are discussed in the Appendix.

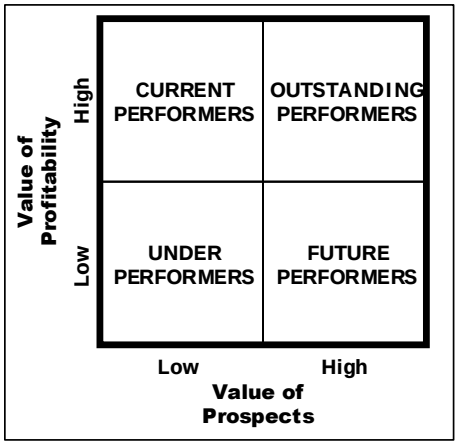
Part II: Applications of the Wealth Added Index

Wealth Added operational framework and valuation

Wealth Added is comprehensive. It takes into account the four main components of wealth generation: profitability, prospects, financing, and the required return. The building blocks with which we use to construct Wealth Added are readily available.

Let us take the first two: the value of profitability, and of prospects. The enterprise value of the firm is equal to the market value of the equity and the market value of the debt or the present value (value today) of all future free cash flow. We can split this cash generated into the perpetuity value of the current amount, and the value of the expected change, whether an increase or a decrease over time, from the current level. The first, we refer to as the value of profitability. The second, we refer to as the value of prospects. The aim of any company should be to convert prospects into profitability, while generating further prospects over time. Companies which generate positive prospects and positive profitability are outstanding performers; companies which can only muster negative prospects and negative profitability are underperformers.

Exhibit 1: Relationship between Profitability and Prospects



The third element is financing. Issued equity and debt, plus retained cash, provide the funds for a business; dividends, capital expenditure, share repurchases and working capital management tell where the cash went. Accounting technicalities like depreciation can make this narrative rather opaque, but essentially, what better way is there to measure the success of a business than to compare the 'cash in' with the 'cash out'? The failure to manage funding has humbled many businesses, forced many a rights issue, and caused other companies to declare, or at the very least flirt with, insolvency. What managers should have been asking was whether the expectations of future profitability, and future profitability itself, were enough to match the funding demanded to raise one and deliver the other.

The fourth is investors' required return. As stated before, this is the key challenge for all companies. We believe strongly that any metric that omits the investors' required return is seriously flawed. In many cases, a rising share price has been bought by mortgaging – in other words, failing to meet – investors' current required returns.

		1		2		3		4
WAI	**=**	**[Value of Profitability**	**+**	**Value of Prospects**	**-**	**financing]**	**-**	**Required Return**

Balancing these four aspects of Wealth Added has the potential to reap enormous benefits, and it has never been more important. It may be easy to boost profitability over a given period by concentrating on the drivers of profitability like sales or margin, but in doing so, prospects may be sacrificed. Alternatively, a company may spend so much to purchase profitability and/or prospects – to get the share price up – that financing on a grand scale is required from

investors. The cost of this must be factored in to the equation. It is very easy to make acquisitions and focus the world on profitability and prospects without asking if the extra funds pumped into a company will earn the investors' required return.

Wealth Added articulates respected finance theory into a new framework. When managers weigh the four main factors over the period in which they hold a comparative advantage, they may turn the essentially historic performance metric of Wealth Added into a planning template: a financial balanced scorecard. What happens when a company makes an acquisition? Capital expenditure increases. If the market does not expect the combination of current profitability and the change in the company's prospects to cover the investment or purchase price and the required return, then Wealth Added will be negative. Most acquisitions destroy value for the buyer precisely because current and future profitability of the combined entity have not covered and are not expected to cover the purchase price and the required return.

A Wealth Added approach does not contradict the idea that a firm's value is equal to the present value of its Free Cash Flow, or present value of EVA and its economic capital, with the first being a stock measure, and the second a flow measure. But just as discounted EVA provides greater insight on an annual basis, linking the profit and capital requirements in any given period, so Wealth Added highlights the growth prospects a company needs to generate in addition to the current level of EVA in any given period. It also separates what funding comes from internal and external sources. The four factors of Wealth Added cover one or more of Miller and Modigliani's features contributing to the creation of value, as the following exhibit demonstrates.

Exhibit 2: Relation of Wealth Added to the factors contributing to value creation

	Δ Value of Profitability	Δ Value of Prospects	Financing	Required Return
NOPAT	×			
Cost of Capital for Business Risk	×	×		×
Returns on Future Investment		×		
Capital Expenditure			×	
CAP - Period of Comparative Advantage		×		
Capital Structure			×	×

Competitive and organisational decisions affect the value of profitability and prospects. Financial strategy dictates financing. Corporate governance naturally rests on returning the cost of equity to all shareholders. Companies currently focus on each of these factors separately, but it is focusing on all of them together which makes Wealth Added so powerful.

In summary, the aim for a company is (continuously, in a virtuous, value-creating circle) to:

- create expectations about the prospects for superior future performance,
- convert those expectations into profitability,
- deliver investors' required returns, attract further financing,
- invest in opportunities, build the business, and thus expectations for future performance.

The outstanding performers will find funding easier to raise than the underperformers. At each stage, at least in principle, further financing should be easier to raise, because of the proven record of converting investors' expectations into profitability. Wealth Added is the benchmark that shows whether a management has been successful for all investors.

Wealth Added 202 – Practical platform

In the main body of the text of this Introduction to Wealth Added we refer to the value of profitability and the value of prospects. For the purposes of the theory, we have dubbed these Current Operations Value (COV) and Future Growth Value (FGV). Initially, we define Enterprise Value in two ways:

A. Enterprise Value = Market Value of Equity + Market Value of Debt

Where: Market Value of Equity = Shares x Share Price
Market Value of Debt = Value of total net debt

B. Enterprise Value = Current Operations Value + Future Growth Value

Where: Current Operations Value = Net Operating Profit After Tax / WACC
Future Growth Value = PV ∑ **Δ** (NOPAT – WACC x Capital)

Since Wealth Added is the excess change in market value over the expected increase in equity value, a few adjustments to the value equation are required. First, we subtract debt to arrive at market value of equity. Second, we find the change in market value of equity over a specified period and then subtract out (or add) any shares issued (or repurchased, and/or dividends), which have nothing to do with either COV or FGV. Third, we subtract out the required return on beginning market value of equity. The steps look like this:

C. MVE = COV + FGV - Market Value of Debt

D.Δ MVE = Δ COV + Δ FGV - Δ Debt

E. WAI = Δ COV + Δ FGV - [Δ Debt + New Equity - Dividend] – MVE_{beg} x Ce

Wealth Added is the change in profitability of a company combined with the change in the debt and equity. With a few adjustments, the change in the debt and equity equals the change in the capital expenditures of the firm. As explained above, the COV is the profitability in perpetuity, such that Δ COV is the change in the profitability level assumed in perpetuity. The Δ FGV is the change in the market's expectations for growth in the current level. Here is a practical example for a company:

WAI	= Δ COV + Δ FGV	– [Δ D + New E – Div]	– MVE_B x Ce
1000	= (+1500) + (–200)	– (+1800)	– (+500)

All else being equal, if the above company can raise its FGV to 800, it will achieve a Wealth Added of zero, meeting its investors' expectations:

WAI	= Δ COV	+ Δ FGV	– [Δ D + New E - Div]	– MVE_B x Ce
0	= (+1500)	+ (+800)	– (+1800)	– (+500)

We can dig deeper. Changes in profitability or the market's expectations for greater future profitability must be greater than the capital expenditures to achieve them and the required improvement in equity. This means that a firm balances current profitability, building future capability, and the investments necessary against a required return for shareholders on their equity investment. In other words, profitability and capital gains are benchmarked against investment and the minimum requirements of investors. The following reworking of the equation may clarify.

WA = [Value of Profitability + Value of Prospects - financing] - Required Return

2001 Global WAI Ranking

Top 50	Years	WAI	= Δ Value of pofitability	+ Δ Value of prospects	− Financing	− Required Return
Wal-Mart	5	149,662	45,809	168,482	2,616	62,013
Microsoft	5	93,780	42,822	188,267	11,875	125,435
IBM	5	93,092	16,034	109,261	-34,090	66,294
General Electric	5	91,857	109,881	242,896	96,949	163,971
Citigroup	5	82,682	n/a	n/a	n/a	n/a
Nokia	5	82,156	27,103	78,373	-9,494	32,814
Home Depot	5	59,378	22,814	70,566	4,732	29,269
Johnson & Johnson	5	56,017	30,396	77,377	5,048	46,708
Dell Computer	5	35,352	11,539	47,954	-1,788	25,929
Nestlé	5	34,609	25,050	32,684	3,418	19,707
Pfizer	5	30,712	74,097	123,125	105,149	61,362
Royal Bank of Scotland	5	29,114	51,542	10,987	21,831	11,585
Amgen	5	29,082	7,105	35,927	-520	14,470
Sanofi-Synthélabo	5	27,399	10,587	32,309	6,727	8,770
Abbott Laboratories	5	26,627	8,683	43,232	-407	25,694
Shell	5	24,792	52,199	-3,311	-25,581	49,678
Oracle	5	23,806	16,148	28,092	-10,101	30,535
Siemens	5	23,066	-6,041	53,333	5,533	18,693
Bristol Myers Squibb	5	21,768	23,397	20,686	-19,720	42,035
Lowe's	5	21,494	8,608	23,420	4,216	6,318
Wyeth	5	21,152	13,059	33,194	-1,338	26,439
Philips	5	20,858	-20,190	50,820	-1,689	11,462
HSBC	5	20,765	23,938	35,870	16,714	22,330
Eli Lilley	5	20,728	13,673	31,293	-6,786	31,025
Medtronic	5	20,389	6,016	41,925	11,672	15,880
Target	5	19,479	9,974	21,890	3,540	8,846
Barclays	5	19,031	30,387	2,397	-1,364	15,117
L'Oreal	5	18,810	8,288	22,492	-719	12,689
Total Fina Elf	5	18,803	97,128	-3,195	54,649	20,480
Telecom Italia	5	18,136	-461	55,816	16,503	20,715
Taiwan Semiconductor Manufacturing	5	17,406	-1,081	39,621	10,845	10,289
Samsung Electronics	5	17,158	9,478	24,149	6,711	9,759
Takeda Chemical Industries	5	16,100	16,323	5,348	-3,106	8,677
PepsiCo	5	16,089	15,973	19,431	-4,170	23,484
Novartis	5	15,362	9,768	30,181	-6,340	30,927
Kohls	5	15,330	5,116	16,078	1,722	4,142
Ford	5	14,921	-68,288	77,309	-29,829	23,929
Walgreen	5	14,756	5,335	19,878	1,117	9,340
Anheuser Busch	5	14,346	9,647	12,789	-3,974	12,064
British American Tobacco	5	14,164	17,619	-17,560	-20,984	6,878
Baxter International	5	13,547	3,311	17,553	-753	8,071
Intel	5	13,476	-11,963	112,394	-409	87,364
Automatic Data Processing	5	13,440	n/a	n/a	n/a	n/a
Fannie Mae	5	12,577	26,239	12,254	-10,582	36,498
BG Group	5	11,847	-645	-2,127	-20,882	6,263
Best Buy	5	11,733	6,666	7,612	7	2,537
BellSouth	5	11,533	10,807	33,120	688	31,706
Colgate-Palmolive	5	11,493	4,879	12,500	-4,716	10,602
NTT DoCoMo	5	11,134	-328	57,398	14,031	31,904
eBay	5	9,792	834	15,162	1,363	4,840

All figures in millions of US$

- Primary data source for share data: Thomson Financial Datastream.
- Primary source for accounting data: value of profitability from Company Analysis.

- Wealth Added calculation, consolidation & methodology: Ewelina Stachnik, John Pigott.
- Data analysis: Ricardo Camara, Caroline Boudergue, Katinka Gertz.
- Support: Eugenia Rillman, CK Cheng, Geoffroy Pacault, Fredrik Gustavsson.

Bottom 50	Years	WAI	= Δ Value of pofitability	+ Δ Value of prospects	− Financing	− Required Return
Fujitsu	5	-12,013	14,536	-13,681	3,565	9,302
HCA	5	-12,023	-3,435	-4,725	-5,818	9,681
Seibu Railway	5	-12,071	-303	-9,667	-387	2,488
AutoNation	5	-12,434	3,758	-7,179	5,007	4,007
New World Development Company	5	-12,552	n/a	n/a	n/a	n/a
Matsushita	5	-12,709	-59,531	61,643	4,510	10,312
Computer Associates International	5	-12,958	-7,122	9,838	-332	16,006
Cendant	5	-13,704	5,636	19,633	31,584	7,390
NTL	5	-13,793	-11,064	26,669	26,744	2,654
Marconi	5	-14,226	-33,227	24,898	-3,064	8,961
Alcatel	5	-15,633	-32,421	43,679	14,156	12,735
Sun Hung Kai Properties	5	-16,029	n/a	n/a	n/a	n/a
Yahoo!	5	-16,571	63	8,759	13,415	11,978
Honeywell	5	-16,769	13,938	-1,465	16,674	12,568
Mitsubishi Heavy Industries	5	-17,548	-9,423	1,088	5,466	3,747
KDDI	5	-17,876	8,773	-5,050	17,683	3,916
Singapore Telecommunications	5	-17,939	2,098	-4,738	6,455	8,844
Waste Management	5	-18,043	20,941	1,439	32,419	8,003
Roche Holding	5	-18,284	7,871	-1,796	-3,621	27,979
Bank of America	5	-18,383	35,640	35,303	41,469	47,857
Cable & Wireless	5	-18,820	-10,753	4,760	1,903	10,924
Pharmacia	5	-19,222	10,665	20,495	32,954	17,429
Xerox	5	-19,514	-5,208	-4,184	-422	10,543
Verizon Communications	5	-20,072	49,141	97,670	122,114	44,768
Corning	5	-20,804	-1,524	610	10,126	9,765
DuPont	5	-20,869	-26,581	8,970	-22,589	25,846
BT	5	-21,214	-17,828	32,936	9,847	26,475
Bank One	5	-21,716	35,492	-8,335	24,329	24,544
Asahi Bank	5	-22,022	-46,506	30,028	1,653	3,892
The Gillette Co	5	-22,309	-96	-6,736	-4,139	19,616
Eastman Kodak	5	-22,457	-4,234	-10,606	-1,820	9,437
AOL Time Warner	5	-23,120	80,054	81,419	150,434	34,160
Toyota	5	-23,353	51,063	-74,914	-27,566	27,068
Cisco Systems	5	-24,092	-7,979	93,635	41,851	67,897
Pacific Century Cyberworks	5	-28,860	6,977	4,385	37,432	2,789
Compaq	5	-29,561	-6,011	4,573	11,969	16,154
The Walt Disney Company	5	-31,515	11,128	-16,627	-1,695	27,710
Boeing	5	-32,651	22,055	-17,179	16,995	20,531
SBC Communications	5	-34,160	48,638	65,317	97,565	50,550
Deutsche Telekom	5	-39,868	-16,253	69,336	51,213	41,739
Motorola	5	-40,781	-13,737	12,335	16,233	23,146
Nortel Networks	5	-48,011	-47,636	58,761	29,180	29,956
Sumitomo Banking	5	-50,190	-47,900	32,062	21,001	13,351
WorldCom	5	-67,827	51,683	-940	81,712	36,859
The Coca-Cola Company	5	-68,211	9,670	-23,250	-8,161	62,793
JDS Uniphase	5	-71,483	-170	10,918	73,210	9,021
AT&T	5	-77,653	-69,731	99,949	53,403	54,468
Lucent Technologies	5	-86,594	-93,280	87,371	38,614	42,072
NTT	5	-90,861	72,338	-123,667	281	39,252
Vodafone Group	5	-104,574	57,588	126,717	241,671	47,207

All figures in millions of US$

1. Preference shares not included unless they have equity characteristics.
2. In general no distinction is made between acquisitions and mergers. The calculation is based on the shares of the acquiring company or in the case of a merger the main company (as determined by Datastream).
3. In some cases data for certain (typically unlisted) shares was estimated.
4. Data for Shell based on both Royal Dutch Petroleum and Shell Transport & Trading Company.
5. Insurance and financial holding companies are excluded.
6. Wealth Added calculated to 31.12.2001.
7. Numbers are shown in US$ millions, but were first calculated in local currency.
8. Companies were selected based on their Wealth Added to include the 50 best performers and the 50 poorest performers over this period. New companies were included if they fell in the top 50 (NTT DoCoMo and eBay), but not if they fell in the bottom as the rise and fall of the markets creates a bias against new companies. Preliminary analysis for selection was based on the top 1000 companies by Market Value of Equity.
9. In some cases where companies have non-calendar year ends the latest data is not available. In this case "n/a" is shown.

Extending Wealth Added to strategic and financial planning

Wealth Added is not only a metric for assessing historic performance. It has many more uses. Wealth Added as previously outlined can be developed into a forward-looking template for planning, by linking it to established measures of operational performance. Managing for Wealth Added objectively and transparently encourages executives to keep on the straight and narrow path of financial and operational discipline.

Using Wealth Added for planning enables executives to plot where the path should lead. Rather than have executives focus on either particular drivers of profit, financing needs, or strategic capital investments in isolation, Wealth Added encourages more collaboration among managers and a greater link between normally discrete and disparate choices. It is too easy to allow the budget to compel executives narrowly to concentrate on the short term, or for equity-type incentives to persuade executives to make acquisitions and take on excess risk, rather than pursue profitable and sustained organic expansion. Too often, executives prepare for immediate and direct consequences, but they do not satisfactorily plan for indirect and long-term outcomes of their decisions. Wealth Added encourages a broader outlook. As stated previously, the platform requires managers to balance short-term profitability with long-term prospects, and both with financing and investors' required return.

Planning period

The Wealth Added approach starts with determining the planning period. If executives start with their estimate of their businesses' comparative advantage period (CAP), they automatically ground two assumptions:

- Wealth Added equals zero for the period
- All of the current prospects will be converted into profitability – by definition.

Strategies that extend the CAP add real value for investors. If a company can keep pushing back the competitive horizon – the point at which there is no competitive advantage – this will keep replenishing the prospects of the company. It is fundamental to effective strategy to seek do this, but very challenging in practice, and has often led to ill-judged diversification.

When executives engage in planning for other periods, such as for three-five years, or for the annual budget, it is recommended to start with a Wealth Added of zero but then to try alternatives when performing sensitivity analysis. Forecasting for periods other than the CAP necessitates that executives annually estimate the value of the prospects they aim to build. Adding the estimate of prospects to each year of the planning period, which the Wealth Added process demands, introduces clarity to assumptions made for profitability and financing. In cyclical concerns, managers will predict negative growth prospects when they are experiencing the top of the cycle. The market price of the shares will already include an expected fall in profitability. Thus, combining the value of profitability, prospects and funding increases the number of variables to consider. Planning profits may prove relatively simple. Capital expenditures required may additionally be straightforward. But then managers must predict their prospects and balance them against the financing needed. Competitive and finance strategies are married. Portfolio analysis becomes significant.

Role of financial strategy in planning

Managers need to determine the financing requirements. They affect the required return in each year and the profitability or prospects that managers must deliver to cover the expected cost. Consider the effect of financing for the Comparative Advantage Period. Issuing new equity or debt would require an increase in cash flow to cover the financing costs, whereas repaying loans or returning cash to shareholders by way of dividends or repurchases will reduce the required return. It is natural that mature businesses will pay higher dividends and, whilst this is not the only route, mature businesses that follow other strategies need to be especially convincing to investors.

Mixing and matching financing and prospects make planning for other periods more complex. But they bring reality to a major capital investment in research and development, or to a strategic but expensive acquisition. Do the prospects and the financing align? When share

prices fall on the announcement of an acquisition, the market is indicating that the future profitability, or the prospects, will not pay for the financing of the investment. The Wealth Added framework allows managers to view the trade-off clearly.

Benefits of drilling down the model

Naturally, specific assumptions such as sales growth and margin, as well as the requirement for working capital and fixed assets, come next. This is where drilling down becomes important – to see whether corporate goals and divisional opportunities match. The process of drilling down forces management to value each business and determine what each one provides to the total enterprise value of the firm.

Benchmarking and sensitivity analysis

Benchmarking against an industry peer group will encourage managers to ask the following questions and to ground some key assumptions:

- Do some competitors have different CAP or do they have the same? What may each player do in order to convert prospects into profitability over this period?
- Who is 'best in class' for various value drivers?
- How does each company fund itself? (Debt, equity, dividend policy.)
- How does comparative advantage translate into strategy and financing?
- Are sales and other projections for the entire group, over the period, realistic?

The last step is sensitivity analysis. Look at different Comparative Advantage Periods, financing alternatives, potentials for sales growth and margin, and the financing. This base case assumes that the market price of the shares is accurate. Stretch goals look at higher share prices. Planning for stretch goals encourages managers to consider Wealth Added above zero. What needs to happen over the period for WAI to be higher, for the share price to double in three years? If this happens, what does this mean for future plans? Can the company sustain its growth? Grounding stretch goals, Wealth Added, prospects, and financing as well as the profitability after the period under scrutiny discourages overconfidence.

Sensitivity Analysis (Examples)

• CAP		< 5 > years		
	Industry Peers	v		Own
• Financing	Retained Cash	v		External Financing
	Debt	v		Equity
	Dividend Policy			
• Profitability	Sales Growth	v		Margin Improvements
• Value Drivers	Average	v		Best in Class
• Organisational Strategy	Acquired	v		Organic
• Portfolio Strategy	Buy v	Keep	v	Sell
• GDP Growth		< 3% >		
• Industry Growth		< 5% >		
• WAI	ZERO	v		Stretch

None of the ideas stated here should surprise. None are revolutionary. All are based on the principles of modern corporate finance theory. Wealth Added adds further clarity to existing planning procedures because the prospects are highlighted in each year. Investments, including acquisitions and long term expenditures in research and development, can be viewed in this light. Investment and consequences for the period and the future are in front and centre. The Wealth Added approach is the big picture. Applying the concept grounds managers in reality. All drivers of share price are included. Nothing is left out. All parts of the process happen together, not in isolation. The idea is simple, robust, and comprehensive.

Wealth Added and incentive architecture

Wealth Added can be used to motivate managers to make better decisions. FTSE 100 companies regularly claim a commitment to the creation of shareholder value. However, Stern Stewart research shows that more than half (53 per cent) of the companies surveyed did not identify the link between value creation and incentive plans that align manager and shareholder interests[5].

Reward executives for creating Wealth Added, balancing all four of its factors – the value of profitability, the value of prospects, financing, and investors' required return – and you reward them for creating true value. By contrast, paying for performance to achieve success on just one of the traditional metrics may cover one aspect of wealth creation, but not others.

For instance, any metric which focuses on profit, focuses on current profitability alone. A single-minded focus on that – because that is what an executive is being paid to do – may compromise future profitability, and hence expectations of that profitability. Any incentive scheme based on options which has no comprehensive test of operating performance, financing and required return, as Wealth Added requires, means that in the short term, financing may be ignored, as well as the required return. It has been in the recent past. It is easier to dream without the anchor of financing parameters and the required return.

Of course, like other market-based metrics, Wealth Added inevitably depends on share price, but the Wealth Added framework highlights the financing demanded to create that share price, and encourages managers to concentrate not just on share price, but to convert the expectations reflected in it into current profitability. Wealth Added includes the short term and the long term, as well as all sales, margins, costs, capital expenditure and the required return. In some respects, Wealth Added is a fully marked-to-market EVA.

It is also possible to index Wealth Added and its main drivers against peer companies. This is valuable not only for benchmarking a company's performance, but also for creating incentive compensation schemes.

Although Wealth Added is more of a top-level, strategic planning tool, it can be 'drilled down' to supplement other value-based management tools. By indexing against peers in the share market, or depending on the industry, the commodity market, management can remove exogenous factors and render Wealth Added available for divisional and unit managers. Like EVA, it can become an incentive compensation tool or performance test for lower-level as well as senior management and employees. Since many employees receive share options now anyway, using Wealth Added would add no more market-related factors than already exist, and the drivers would be closer and more meaningful.

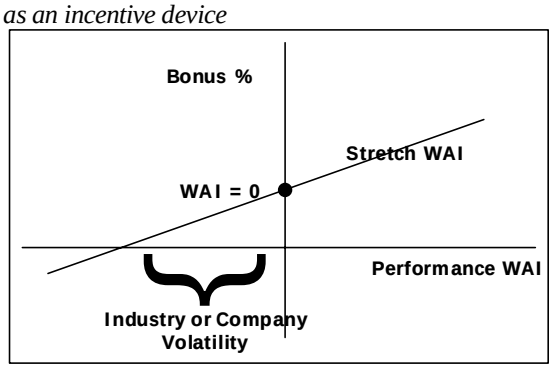
[5] Although 47 per cent of the companies surveyed claimed in their remuneration reports that their incentive policies aligned the interests of their managers and owners, the corollary is that 53 per cent did not.

Wealth Added 303 – Motivating managers

Motivating managers to focus on Wealth Added through incentives would reinforce executive commitment to the principles of managing for value. This does not cannibalise an EVA-based incentive programme but builds heavily on similar foundations. If executives prefer shares or options, then Wealth Added can provide a powerful performance test. In either case, Wealth Added can be adapted to company requirements.

Since Wealth Added includes a required return for equity investors and all investors owning shares within the period measured, holding management accountable for Wealth Added comprehensively aligns owners and executives. During any period, companies should attempt to have a positive and high Wealth Added, but in order to achieve a target level of performance, zero Wealth Added should suffice. Company or industry volatility should determine the range of outcomes between zero and twice bonus. Volatility depends on the period, but history should act as a guide.

Exhibit 3: Wealth Added as an incentive device



Indexing against a set of industry peers would reduce the impact of exogenous industry and macroeconomic factors on Wealth Added. This lessens the volatility resulting from decisions outside management influence. The result is similar to when companies index their share price against a peer set in order to isolate their performance against the peer group, yet companies almost never adjust for financial risk (caused by leverage) in these calculations. Wealth Added does, via the cost of equity. Remuneration committees may prefer a mix of indexed and pure Wealth Added.

An incentive programme based on Wealth Added will raise several issues:

Some will disagree with the peers or the cost of capital. Discuss with investors. Find out what they believe the peer list and cost of capital are. Look at peers chosen by analysts. Good academic studies provide clues into cost of capital. Few would cheer the recent reduction in the market risk premium. Choose a number and stick with it. Choose peers and accept them too. Adjustments can be made to the incentives based on their history and the company.

Managers have an incentive to use debt rather than equity to reduce the required return. The cost of equity calculation, based on the Modigliani – Miller principles, increases the required rate of return on equity if leverage is increased.

Much depends on the value of prospects. Managers could exude overconfidence and try to manage their share price upwards. Institutional investors should use their models to perform sensitivity analyses. Look at peers. Ask whether industry or company can actually perform. A business may have great prospects, but good analysis should help determine true growth.

The timing of the programme could be manipulated. A good look at the history will illustrate which adjustments can assure a robust programme.

A target of zero Wealth Added is only one choice. Stretch targets can tie to larger wealth creation targets, equivalent to doubling share price or other goals. It is important to tie the incentive architecture to the planning architecture, but the parameters should be objectively and transparently chosen. Mixing with shares and options is acceptable, but using too many metrics and incentives will undermine the overall effect. Consistency improves acceptance internally and externally.

EVA and Wealth Added

If correctly implemented, EVA is the best internal measure of performance within a company. EVA starts with profits and subtracts an opportunity cost for the use of all capital, equity as well as debt. It is a number (in $$, €€, or whatever), not a percentage[6]. It is also the spread between a company's return on and cost of capital, multiplied by the invested capital[7]. EVA improved on Earnings per Share in that it includes equity capital, not only debt. It covers the income statement and the balance sheet. Adjustments are made to the accounting framework to build an economic model of performance that allows discounted EVA to equal discounted cash flow. Hence, raise EVA, and you should raise the share price. It is the one measure that properly accounts for all the complex trade-offs faced by a manager.

Key Issue No. 5: Why do we need two measures?

An incentive system based on Wealth Added rewards senior managers for using the influence that they wield on share price wisely. EVA holds managers, and indeed all employees under the system, accountable for how they spend the capital provided to the company by investors.

EVA motivates managers to deliver today and, in a well-designed incentive scheme, over the medium term. Wealth Added encourages them to balance performance today and building capabilities for the medium and longer term. The measures complement each other.

If a manager has 'clear line of sight' to the share price, then Wealth Added is appropriate. But even if not, and in almost all cases where managers are paid using shares, or share options, Wealth Added is the best way of understanding the share price. In cases where the share price seems remote and beyond influence then EVA will be the most appropriate measure. EVA enables managers to see whether they are earning an adequate return on the capital they employ. Where returns are lower than might reasonably be expected, for investments of similar risk (i.e. they are below the cost of capital), EVA is negative, and the firm faces the flight of capital and a lower share price.

EVA has the benefit that it can be 'drilled down', or used to measure, motivate and reward performance at any level throughout an organisation without, as with Wealth Added, having to value divisions and units. However, despite this, there are limitations to the market-based aspects of EVA. For instance, it does not recognise (and hence reward) the benefits of building prospects – in other words, building investors' expectations of future growth. A simple example will suffice. If a company invests in R&D, its prospects and hence its share price may go up, but its EVA will not – not until that investment bears fruit in terms of profits. A chief executive paid in share options might receive a reward for that investment almost immediately. One paid for EVA improvement would have to wait: one reason why EVA and other incentive plans based on current financial performance require careful design and integration into the overall compensation and motivational systems.

EVA rewards for delivering on investors' expectations of future growth, not necessarily for raising those expectations and the share price, as such. Wealth Added gives managers credit for balancing current performance and improving medium and long-term prospects. Together, EVA and WAI encourage the building of prospects and then delivering them. Senior executives, and possibly divisional managers, focus on medium and longer term strategic planning, business development, and financing. Junior managers concentrate on delivering. Hence, for senior managers, a mix of Wealth Added and EVA is preferable to EVA alone, implemented in tandem with EVA for more junior managers, and other employees, to encourage pervasive value creation.

[6] Whilst percentage measures are useful for comparisons they are not generally a good basis for decision making. For example, if a business has a high percentage return on assets, managers can be discouraged from making investments that would dilute the return on assets, even if the investments create value.

[7] For example, a €1000 investment in a market stall returns five per cent, where investments of similar risk elsewhere can earn 15 per cent. EVA here would be (5% - 15%) x €1000 = - €100

Conclusion

Consider the strategic planning exercise and its attendant financial forecasts, whether over three or five years, rolling or static. Taken together with the annual budget exercise, they constitute the most significant set of business processes in which an organisation engages. They are the blueprint for enacting the vision, mission and strategy of the organisation from the executive suite to the shop floor, across product and service lines, across divisions and geographies, for allocating capital, and for outlining to what extent growth will be organic or acquired. Financial strategy – how the business is financed – emanates from or is beholden to this blueprint. All other activities, investments and decisions, whether large or small, follow.

How a business develops and manages this process, and how individuals enact it, defines the culture of the organisation. Many of the recent business scandals derive from the fact that this process was dishonest. If the process is robust, with the right metrics and incentives, aligned with investors, the result is good internal governance. Without it, no matter how good its corporate governance, a company will be in bad shape.

Management and investors should analyse how companies performed during a period in question, and how their activities affect their Wealth Added. But what that means to a company's business plan going forward matters even more. Past choices matter. What investors should ask now is whether managers grasp the implications – particularly in terms of accountability - and potential of the Wealth Added framework.

Before the current crisis of credibility in company management, executives managed earnings growth, what we have called profitability. Over time, they added management of share price, including that element that we have called prospects, to their responsibilities.

In itself, this may not be a bad thing, if management is creating real opportunities, for which they are ready to be held accountable. However, the earnings game – relying on aggressive accounting to raise earnings quarter after quarter – and the management of share price were two of the defining, and unfortunate, aspects of the bull market of the late 20th century. The spectacular turn of that rising market, following the collapse of the US's Nasdaq technology index, left executives on the beach.

It is tempting to believe that investors understood that managers were playing the earnings game, and accepted it because they did not realise the extreme behaviour, including fraud and mis-representation that would result. Many in the financial community turned a blind eye to or even encouraged 'aggressive earning management'. Inconsistency, and any massaging of figures, results in a corporate governance discount in the share price.

For those who played the earnings game and have suffered the consequences, Wealth Added provides the opportunity to reform, and closes the credibility gap perceived by wary investors. Even those companies which were neither disciplined by the markets for fraud nor which had massive investments gone awry will most probably have used the coupling of their budget processes and incentive systems to guide both earnings and share price, following accepted wisdom among senior managers. Those that have been castigated unfairly have an opportunity in Wealth Added to prove that they consistently create value.

If they do grasp the implications and potential of Wealth Added, consistently and comprehensively, then we will be on the way to bridging the credibility gap between managers and investors, and providing a plausible answer to one of the key business questions of the 21st century.

APPENDIX: Wealth Added Definition Issues

Introduction

Conceptually Wealth Added is straightforward – it is the difference between the actual equity return from a company and the expected return. Inevitably there are certain technical issues with the definition. This appendix discusses some of the main issues in the context of two alternative definitions, the first of which has been used for ranking purposes.

Definition 1: "Continuous Wealth Added"

We calculate the Wealth Added created each day and accumulate these "one-day Wealth Addeds" to create the one-year and five-year measures. When we accumulate we adjust for inflation so that the value of the Wealth Added in different periods is comparable.

Definition 2: "Present Value Wealth Added"

We calculate the Wealth Added created for the entire period (say five years) and discount[8] it at the cost of equity to the beginning. An alternative calculation, which is mathematically equivalent, is to calculate for shorter periods (a year or daily periods) and discount these back to the start date and then accumulate.

Advantages and disadvantages of each definition

The advantage of the first definition is that the Wealth Added for each sub-period is worth the same and is independent of which time period or company is considered. It provides a good the basis of comparison between periods and between companies. The disadvantage is that the result is "path dependent"; it depends on the path the share price takes, not just the opening and closing values.

The second definition overcomes the path dependence but weakens the basis of comparison between periods and between companies.

These issues are considered in more detail:

Comparison between periods and between companies

By its nature the Present Value approach (definition 2) states that 1000 of Wealth Added (or "excess return") in year one is worth more than 1000 of Wealth Added in year two (even with zero inflation). In a narrow financial sense this is true, but arguably one wants to construct a measure that gives a meaningful comparison of management performance between the periods.

A second issue is that the cost of equity is company dependent and thus creates effects that may be undesirable. These are illustrated in the next example, which compares a high-risk (high β) company and a lower-risk (low β) company:

[8] "Discounting" is a standard technique in financial analysis used to take account of the time value of money. To discount the 5-year wealth added one would divide it by (1 + cost of equity)^5. This assumes the same cost of equity for all years, but the calculation is easily adapted for a varying cost of equity.

Equity Value							
	Y1 (Start)	Y1 (End)	Y2 (End)	Y3 (End)	Y4 (End)	Y5 (End)	Cost of equity
High β	1,000	1,200	1,440	1,828	2,194	2,632	**20%**
Low β	1,000	1,100	1,210	1,431	1,574	1,732	**10%**
Expected Return		Y1	Y2	Y3	Y4	Y5	Total
High β		200	240	288	366	439	**1,532**
Low β		100	110	121	143	157	**632**
One-year Wealth Added							
High β		0	0	100	0	0	
Low β		0	0	100	0	0	
Inflation adjusted Wealth Added							
High β		0	0	110	0	0	**110**
Low β		0	0	110	0	0	**110**
Cost of Equity Adjusted Wealth Added (Present Value to start of Y1)							
High β		0	0	58	0	0	**58**
Low β		0	0	75	0	0	**75**
Assumptions	Inflation = 5%	No dividends or share changes					

Both companies exactly match investor expectations in all years except year three when they beat expectations by 100. The inflation-adjusted approach used in the rankings evaluates their performance as equivalent. The present value approach implies that the risky company did the worse of the two.

One has to decide which of these outcomes is most meaningful. The higher total given to the low-risk company using the present value approach can be rationalised by thinking in investment appraisal terms: envisage oneself at the start of year one – which of the outcomes would be preferred? This line of thinking is appropriate if one wants to use Wealth Added in conjunction with an incentive scheme, for example as a performance test for equity incentives. The present value approach has the advantage that as a multi-period measure it does not suffer from path dependence. Its disadvantage, illustrated in the above example, is that the most reasonable assessment is to say that both companies have done equally well[9].

Path dependency

The continuous Wealth Added measure (definition 1) is path dependent; that is, the value of the measure is not only dependent on the opening and closing share prices, but also the route taken between these prices. This is best explained by a simple example, in which we assume no dividends or changes in the numbers of shares:

Equity Value						
	Y1 (Start)	Y1 (End)	Y2 (End)	Y3 (End)	Y4 (End)	Y5 (End)
Case A	**1,000**	1,200	1,320	1,452	1,597	**1,757**
Case B	**1,000**	1,100	1,320	1,452	1,597	**1,757**
Expected Return		Y1	Y2	Y3	Y4	Y5	Total
Case A		100	**120**	132	145	160	**657**
Case B		100	**110**	132	145	160	**647**
One-year Wealth Added							
Case A		100	0	0	0	0	**100**
Case B		0	110	0	0	0	**110**
Assumptions	Cost of equity = 10%	Zero inflation. No dividends or share changes					

[9] In fact one can make a case that when a high β company outperforms it will tend to outperform by more. The way to normalise for this is to divide by β. It is unnatural for the assessment of the degree of outperformance to depend on which sub-period it occurs in

Note that the opening and closing equity values are the same, but the Wealth Added is different in the two cases. In Case A the excess return (or Wealth Added) is created one year earlier. This creates a higher investor expectation in year two and a higher overall investor expectation, thus decreasing the overall Wealth Added.

The effect can be substantial if the paths differ radically:

Equity Value							
	Y1 (Start)	Y1 (End)	Y2 (End)	Y3 (End)	Y4 (End)	Y5 (End)	
Case A	**1,000**	1,361	1,757	1,757	1,757	**1,757**	
Case B	**1,000**	1,100	1,320	1,452	1,597	**1,757**	
Expected Return		Y1	Y2	Y3	Y4	Y5	Total
Case A		100	**136**	176	176	176	**763**
Case B		100	**110**	132	145	160	**647**
One-year Wealth Added							
Case A		261	261	-176	-176	-176	**-6**
Case B		0	110	0	0	0	**110**

The effect is smaller, but still significant if there is some inflation, because this reduces the real cost of equity:

Equity Value							
	Y1 (Start)	Y1 (End)	Y2 (End)	Y3 (End)	Y4 (End)	Y5 (End)	
Case A	**1,000**	1,361	1,757	1,757	1,757	**1,757**	
Case B	**1,000**	1,100	1,320	1,452	1,597	**1,757**	
Inflation adjusted Wealth Added							
Case A		317	302	-194	-184	-176	**64**
Case B		0	127	0	0	0	**128**
Assumptions	Inflation = 5%					(Total affected by rounding)	

In this example the Wealth Added is accumulated in Year five currency value (e.g. Y5 $).

Conclusion

Each approach has its advantages and disadvantages (summarised below). We believe that for understanding the performance of companies and especially for looking at the sub-period (e.g. a year's) contribution to the total performance, the "Continuous" approach is most appropriate. The "Present Value" approach may be more applicable for certain incentive purposes.

Advantage	Disadvantage
A given amount of Wealth Added is worth the same in each year and each company	The result is path dependent
a) Analogous to DCF investment appraisal techniques b) Logical for incentive use since when specifying rules at start of period issues are similar to DCF appraisal c) Independent of path	a) This measure may appear to favour low β companies and does not facilitate some comparisons between companies of different risk b) Out-performance in early years is worth more than in later years, so measure not good for comparisons

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VIEWPOINT ERIK STERN

Measuring executive performance in terms of share price alone is misleading. Benchmarking against industry and national indices is much more revealing

Context is all. To measure performance - of a chief executive, a board, a fund manager or a City analyst - the secret is to put the performance into context.

This notion goes to the heart of shareholder value in a volatile market. The chief executive who points to a rising share price in a rising market should be able to say not just "we did well" - everyone in the industry may have been doing well - but "we outperformed our competitors in our country's stock market and our industry".

The same is true when stock prices fall. To measure the chief executive of a company in an industry such as commodity chemicals, with low growth expectations, against his peers at companies in industries with high or volatile expectations reveals little about his performance.

In short, chief executives should be held accountable for their own performance, not that of their market or industry. To measure corporate performance, we at Stern Stewart, the management consultancy, emphasise market value added (MVA) - the extra wealth created by managers above and beyond the total investment in a company - and economic value added (EVA) - the value created above and beyond the cost of capital. However, most of the many measures of company performance fail to capture relative performance. Total shareholder returns, earnings per share and sales growth all operate out of context. Compared with whom?

We have set out to answer that question in a five-year survey of 1,000 companies worldwide. Our results shed light on the performance not only of managers but of fund managers and analysts too. Anyone with a large, balanced investment portfolio will own stocks in low-growth industries as well as high-growth ones - but are they the right stocks?

Our study is more than just a corporate beauty parade. It is about pay for performance and how much of a company's performance is due to its managers. Over the past few years, performance-related pay has increasingly been based on options and shares. At one level, this makes good sense. Such instruments reward managers for decisions made today that will create profits in the future. Investors recognise this by bidding up the share price.

At a deeper level, though, equity is inadequate. Executives can affect only about 25 per cent of the share price. Academic studies suggest that 70-80 per cent of the share price of a company is the result of macro-economic, industry and other factors, which are generally out of the control of managers.

That is a reflection of the levers available to managers that were identified by Merton Miller and Franco Modigliani, the Nobel laureates. They argued that six factors influence a company's market value. Two of these are outside managers' control. It is the market that determines the cost of capital for business risk (including interest rates) and the time for which investors expect to see excess returns (the period of comparative advantage). That leaves managers with influence over just four of Miller and Modigliani's factors:

	Beat cost of equity capital	Beat industry peers	Beat country index	No of companies in category	Examples
1	√	√	√	220	BT, Bayer, Philips, Eli Lilley, Akzo Nobel, Ford, Siemens
2	√	√		77	Nike, Coca-Cola, VW, Hanson, Carrefour, Lafarge
3	√		√	37	Smith & Nephew, Next, NEC, BAE Systems, SAP, Sanyo
4	√			34	HP, Boeing, Texaco, Carlton Communications
5		√	√	9	Anomalous: mostly Japanese companies
6		√		72	Heinz, BAA, McDonald's, Rentokil, EDS, Blue Circle, MAN
7			√	56	Japanese; also News Corporation, Cathy Pacific
8				284	Disney, BA, Rolls-Royce, Carlsberg, ICI, Marks and Spencer, Boots, KLM, AT&T, many Japanese companies
Total				789	

Sources: Stern Stewart Europe - research by Geoffroy Pacault, with support from Benjamin Madjar, Louise Turner, Antoine Depigny, Jean Bellon-Serre, Kamil Guessous, Ludovic Garnier and Erwan Guillo Lohan

● Target capital structure - essentially, how much debt a company has;
● Capital expenditure;
● Net operating profit after taxes - showing that they can keep current performance on course;
● Rates of return on new investment, which by combining with new capital expenditure generates the expected future performance of the company.

In other words, managers can influence, more or less imperfectly, how their company is constructed, spends money and performs - and how investors expect it to perform.

What this means in practice is that option-rich chief executives and senior managers are being paid for something over which, in the main, they have no control: the health of their share price.

In our study, we have taken total share-holder returns (TSR) and provided benchmarks - a context of sorts, though not a perfect one. We took the top 1,000 companies by market value of five years ago, worldwide, of which about 800 remain (the rest were absorbed by their competitors). We used US dollars for comparison and excluded significant companies listed for less than five years.

The first, most logical benchmark was the minimum required rate of return, in this case the cost of equity capital - the most relevant measure for shareholders. We also compared the performance of individual companies with benchmark TSRs for their peer group in each industry and country, constructed using Morgan Stanley Capital International indices. Again, this is not perfect: any index is composed of companies that differ from each other.

This allowed us to sort the companies into eight categories. At one end are the stellar performers that, over the five years to December 31 2000, beat the cost of equity for their sector, their peers in their industry and their country index.

At the other end are those that failed to beat all three benchmarks. In between are those that beat various combinations of the three. For instance, Japan's economic collapse means that some companies beat the Nikkei and their industry but not their required cost of equity.

These days, beating your industry is more important than beating your country, partly because you compete for resources, staff and customers and partly because companies are increasingly global: News Corporation came in below its cost of equity and industry but triumphed over its nominal home country, Australia.

Some companies whose shares have soared come out badly from our analysis. Imagine you were the chief executive of a technology, media and telecommunications stock in the period to March 2000. You outperformed your country's market and your cost of capital and fulfilled minimum expectations. But how did you do compared with your peers? Are you a winner in your own industry? United News & Media, with a compounded annualised TSR over five years of 13.23 per cent, beat its cost of equity (11.4 per cent) and the UK generally (12.9 per cent) but not its industry (14.7 per cent).

Alternatively, you may be at the head of a company in one of the commodity industries. Sadly, but probably inevitably, you have underperformed your required rate of return (not generally a good thing) and underperformed your country. Blue Circle turned in a compounded annualised TSR over five years of 9.13 per cent, below its cost of equity (10.5 per cent) and the UK (12.9 per cent) but above the building products industry generally (minus 1.9 per cent). If you have beaten your peer group under difficult conditions, is that not praiseworthy?

Cees van Lede, Akzo Nobel's chairman, can take pride in the fact that it is among the 'stellar performers' in Stern Stewart's survey

Our survey reveals that impressions of performance can be misleading. You might rightly expect Lloyds TSB and Unilever to be in the world-beating class, which includes 220 companies. But perhaps not British Telecommunications, Ford or Akzo Nobel.

Among the 72 companies that beat their industry but not their country or cost of equity are, surprisingly, McDonald's, Heinz, Rentokil and EDS. Those 56 companies that beat only their country included Cathay Pacific, the respected airline.

Depressingly, the largest category is of companies that failed to outperform their cost of equity, industry or country: there are more of them than the comprehensive outperformers and this is where most surprises lie. Among these comprehensive underperformers are Disney and well-known UK companies including Rolls-Royce, J. Sainsbury, British Airways and ICI.

Usually, these underperformers - and those who have invested in them - dismiss the results. They talk of "market sentiment", "corrections", "the herd", "market inefficiencies" - anything but a company's perfor-mance. This is self-serving. Markets are efficient and chief executives should be held accountable and rewarded for their own efforts.

Unfortunately, intriguing as our exercise is, it does not completely solve the practical issue of how we pay managers. With the appropriate benchmarks and if industry and country factors were separated out, as in our study, equity-based pay for performance could work. But if we want to hold managers and employees accountable for what they directly control day to day, we also need to focus on the four Miller and Modigliani factors that managers influence: how a company is constructed, spends money, performs and is expected to perform.

Those four factors are all covered, on a monthly, quarterly or annual basis, by EVA. In combination with well-benchmarked equity, it provides a comprehensive approach to paying managers for how they perform.

Finally, why did we not use EVA for our ranking, rather than benchmarked TSR? One reason is that fund managers and others who may rightly be exposed to criticism by the TSR analysis cannot reasonably be held responsible for EVA: they simply do not influence it day to day as managers do. But the more fundamental reason is that if we had done so, we would not have been able to compare companies with their industries and countries. EVA puts managers' achievements into context by measuring a company's performance against its own particular cost of capital, not against the external standards set by a market index or an industry.

The writer is managing director, Stern Stewart Europe. EVA is a registered trademark of Stern Stewart & Co.

STERN STEWART & CO

Stern Stewart & Co., the leading international consulting firm specialising in Value-Based Management and corporate finance advice, was founded by Joel M. Stern and G. Bennett Stewart III in 1982. It is renowned for helping client companies to measure and create shareholder wealth using tools based on modern financial theory.

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