
Stakeholder Performance Measurement: General Approaches and Methods of Economic Evaluation

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This paper begins by suggesting that when considering CSR, even CSR as justified in terms of the business case, stakeholders are of great importance to corporations. In the UK the Company Law Review (DTI, 2002) has suggested that it is appropriate for UK companies to be managed upon the basis of an enlightened shareholder approach. Within this approach the importance of stakeholders, other than shareholders, is recognised as being instrumental in succeeding in providing shareholder value. Given the importance of these other stakeholders it is then important that corporate management measure and manage stakeholder performance. In order to do this there are two general approaches that could be adopted and these are the use of monetary values to reflect stakeholder value or cost and non-monetary values. In order to consider these approaches further this paper considered the possible use of these approaches for two stakeholder groups: namely employees and the environment. It concludes that there are ethical and practical difficulties with calculating economic values for stakeholder resources and so prefers a multi-dimensional approach to stakeholder performance measurement that does not use economic valuation.

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Key words: enlightened shareholder, green value added, total economic value, economic valuation of employees

JEL code: M14, A13, Q56

1. INTRODUCTION

Corporate Social Responsibility (CSR) is a much-discussed phenomenon both academically and within business. Views vary from those who believe that the only social responsibility of corporations is to make profit, most famously espoused by Friedman (1962), or to maximise shareholder wealth to those that believe that social responsibility means much more than this. Within the context of the UK the recent Company Law review (see DTI, 2002) specifically considered the question as to who a corporation is responsible. The steering group concluded that for the benefit of society an enlightened shareholder approach is the most appropriate and as such an intrinsically more pluralistic approach was rejected. Furthermore, the UK government now strongly argues that there is a business case for CSR, such that corporations, the economy and society as a whole will benefit from such

an approach. An enlightened, as opposed to an unenlightened, shareholder approach recognises that, although corporations should operate for the benefit of shareholders this is best achieved when other stakeholder groups are also considered. Therefore an enlightened shareholder approach would require the needs and wants of other stakeholder groups to at least be considered when decisions are made. The very nature of the enlightened shareholder approach explicitly identifies shareholders as primary and other stakeholder groups as secondary. Therefore the concern is that when important and difficult decisions are to be made then it will always be the case that the needs of stakeholders other than shareholders will be secondary and hence considered less important. A greater discussion of the debate concerning the efficacy and ethics of shareholder and stakeholder theories of the firm is beyond the remit of this paper, but can be found within the business ethics literature

(see for example: Clarkson, 1995; Donaldson and Preston, 1995; Hasnas, 1998; Jones, 1995; Jones and Wickes, 1999; Shankman, 1999; Sternberg, 1994, 1998).

It is sufficient for the purposes of this paper to identify that even within an enlightened shareholder approach the importance of stakeholder groups other than shareholders is recognised and so need to be considered by corporate management. If this is accepted then corporate management will require information that enables them to take into account the needs of stakeholders other than shareholders. This paper suggests that if this is the case then stakeholder performance measurement and management will be of great importance to corporate management. The next section of the paper considers two general approaches to stakeholder performance measurement that could be applied within a stakeholder performance measurement framework. The two approaches differ in that one approach attempts to place a monetary value on stakeholder resources whilst the other quantifies stakeholder performance in non-monetary terms.

There are a large number of stakeholder groups that can be identified. Clarkson (1994), for example, suggested that there are voluntary stakeholders (these include shareholders, investors, employees, managers, customers and suppliers) who can withdraw their stake and as a result require some value added in order for them to volunteer their stake. There are also groups of involuntary stakeholders (such as individuals, communities, ecological environments, or future generations) that do not choose to enter into, nor can they withdraw from, the relationship with the organisation. Wheeler and Silanpaa (1997) approached the issue of stakeholder

identification from their practical experience and they “define stakeholders in four ways” (p. 167), as summarised in Table 1 below:

Given the large number of stakeholders identified in the typologies above this paper chooses to concentrate on two specific stakeholder groups. In the terms of Wheeler and Silanpaa one primary social stakeholder group, employees, and then one primary non-social stakeholder group, the environment, has been selected for more detailed consideration. This paper therefore consists of two sections that consider potential performance measures, under both of the general approaches, that could be applied to these two specific stakeholder groups, namely: employees and the environment. These stakeholder groups were selected, as, in the opinion of the author, performance measurement for these stakeholder groups is more advanced and varied than it is for other; equally important, stakeholder groups. The paper concludes with a discussion of how stakeholder performance measurement and management has the potential to inform and advance the field of CSR.

2. GENERAL APPROACHES TO STAKEHOLDER PERFORMANCE MEASUREMENT

In the most simplistic terms there are two general approaches to stakeholder performance measurement. The first of these quantitatively measure stakeholder performance, but do this in non-financial terms. This is simply to say that performance is measured, and therefore managed, through the interpretation of data that is provided in non-financial terms. Let us briefly consider non-financial performance

Table 1
Wheeler and Silanpaa's (1997) stakeholder typology

Primary social stakeholders	Secondary social stakeholders	Primary non-social stakeholders	Secondary non-social stakeholders
Shareholders and investors	Government and regulators	The natural environment	Environmental pressure groups
Employees and managers	Social pressure groups	Future generations	Animal welfare organisations
Customers	Civic institutions	Nonhuman species	
Local communities	Trade bodies		
Suppliers and other business partners	Media and academic commentators		
	Competitors		

measurement for the customer stakeholder group. A key objective for a corporation may well be expressed in terms of percentage of market share. Market research can be undertaken to monitor performance in these terms, but this is unlikely to be sufficient for management to really manage their performance. Market share is a function of customer retention and the numbers of new customers and both of these can be quantitatively measured in non-financial terms. Furthermore, customers may fail to return for a number of reasons such as the speed of service / delivery, the reliability of the product, or the quality of the after sales service provided to name but a few. Each of these may be considered by management to be a key driver of customer retention and as such may well be measured and managed.

Such a non-financial approach lends itself to a multi-dimensional performance

measurement approach. Perhaps the best known multi-dimensional performance measurement model is the “balance scorecard” as developed by Kaplan and Norton (1992, 1993, 1996a, 1996b). This model, it is claimed, actually balances the competing needs of an organisation. In its original form (1992) the balanced scorecard was credited with the ability to enable corporate management to view their business from four “perspectives”. These four perspectives were the:

- Customer perspective;
- Internal perspective;
- Innovation and learning perspective;
- and
- Financial perspective.

The customer perspective could most obviously be classified as a stakeholder

perspective and in addition the financial perspective relates to shareholders. The innovation and learning perspective would also indicate the need for employee development and it would be expected that supplier relations would be incorporated within what later (1996a) was called the internal-business-process perspective. Despite clearly identifying and developing the four perspectives listed above Kaplan and Norton have suggested that each business is expected to design and adopt its own scorecard to meet its own needs. They (1996a), however, explicitly state that they “don’t think that all stakeholders are entitled to a position on a business unit’s scorecard. The scorecard outcomes and performance drivers should measure those factors that create competitive advantage and breakthroughs for an organization.” Having said this, however, it is relatively easy to imagine a balanced scorecard in which the interests of each primary (and potentially secondary) stakeholder would be incorporated at some point. Such a multi-dimensional performance model could in this instance be conceived of a stakeholder based performance measurement model. More recent developments to the balanced scorecard by Kaplan and Norton (see for example: 2001a; 2001b) have shifted this work more to linking the balanced scorecard with strategy and have considered the causal links between the different perspectives. Furthermore they suggest that the balanced scorecard “complements shareholder value management by defining the drivers of revenue growth – explicit objectives and measures for targeted customers, the differentiating customer value proposition, the internal business process for innovation and enhanced customer relationships, and the needed infrastructure investments in people,

systems, and organizational alignment” (2001b, p.156). The recognition of other factors, including some stakeholder specific factors, as complementing shareholder value is consistent with the enlightened shareholder approach discussed earlier.

The balanced scorecard is advocated by Kaplan and Norton for use within corporations as multi-dimensional performance measurement framework. Some approaches to corporate social reporting could also be considered to be multi-dimensional and also quantify measures in non-financial terms. Perhaps the best known of these is the Global Reporting Initiative (GRI). It is not intended to discuss the GRI here, as it is considered in more detail in the paper by Abadia that follows in this special issue.

The second general approach to performance measurement is to translate the impacts of a corporation’s activities on stakeholders into financial or economic terms. Therefore under this approach the specific impact upon a stakeholder must be converted into a monetary value. If we can accurately or, at least, reasonably translate the specific impact into economic valuations then these can potentially be aggregated to see an overall effect. Such economic valuations could potentially be used within more traditional accounting statements, or slightly modified accounting statements, to reflect a more complete measure of performance. Once denominated in monetary terms stakeholder impacts would be able to be accounted for in traditional double entry accounting terms such as: revenues; costs; assets; liabilities and capital. Depending on the nature of the impact it is possible to envisage stakeholder impacts being accounted for in each of these ways, although more traditional

accountants may well find it difficult to deal with the subjectivity involved in providing the relevant monetary estimations.

This section of the paper argues that, in essence, there are two general approaches that can be adopted when undertaking stakeholder performance measurement. These two approaches both quantify effects upon stakeholders, but do so in different ways. The first approach quantified stakeholder performance in non-financial terms and is more consistent with the concept of multi-dimensional performance measurement that moves us away from traditional financial statements. In such a model key performance indicators can be developed for each stakeholder identified by a corporation and then potentially some form of (balanced?) scorecard could be used to inform management decisions. A second approach is to translate impacts upon stakeholders into monetary terms and then these can be incorporated into traditional financial statements. The next two sections of the paper look at these approaches in much more detail in relation to two specific stakeholder groups. Firstly, there are the employees of a corporation who Wheeler and Silanpaa (1997) identify as primary social stakeholders within their typology. Secondly there is the environment, which they identified as primary non-social stakeholders.

3. EMPLOYEES

Employees are a primary stakeholder group, without whom the organization can not operate, and so is an obvious stakeholder group for corporate management to measure performance. One source of information for relevant employee measures are employee

or employment reports that have been produced by corporations. Despite a lack of a legal requirement to provide employees with information examples of employee reporting in the UK can be found dating back a significant amount of time. Parker, Ferris and Otley (1989) suggest that examples of financial reporting to employees can even be found in the late 1800s and Woodward (1970) reported their use in the 1950s. Interest in employee reporting in the UK increased rapidly from the time that the ASSC (1975) produced "The Corporate Report" until the early 1980s. The specific aim of The Corporate Report was to consider and "seek to satisfy, as far as possible, the information needs of users". The Corporate Report identified a number of user groups and their information needs. One of the groups identified was the employee group and it was suggested that there was a need for a separate employee report. The keen interest in employee reporting in the UK at this time was reflected by both companies (Hussey, 1981; Lyall, 1982) and academics (see for example Hilton, 1978; Hussey and Marsh, 1983; Maunders, 1984). Performance information related to employees was widely discussed in the context of the content of employee reports and this led to a plethora of potential measures being suggested. More recently studies have been conducted to look at human resource disclosures in annual reports. One example of this is Vuontisjärvi (2006) who considered this in the context of Finnish companies. The themes most commonly disclosed by these companies were: training and staff development (79%); pays and benefits (68%); participation and staff involvement (68%); values and principles (66%); employee health and well-being (61%); measurement of policies (55%); employment policy (49%); security in employment (38%); equal opportunities

(34%); and work-life balance (4%). Many of these themes are touched upon in the following discussion and it provides a valuable check as to the relevance of issues to the employee stakeholder group.

3.1. **Specific employee performance measures**

Employee remuneration is considered to be the single most important item by Trade Unions in collective bargaining situations (Foley and Maunders, 1977). In terms of traditional accounting measures the direct effect of employees are as costs in the income statement. The total cost to the corporation of employees is a factor of remuneration levels and numbers of employees. Clearly this monetary valuation of employee costs can be classified as falling under the second approach and so will be returned to later in this paper.

Factors other than remuneration are also important when considering an organization's performance for its employees. Foley and Maunders (1977) argue that employee information needs fall into four major categories: achievement or performance indicators; job security; working conditions; and equity (between employees and shareholders, workers and management and between workers). We can draw upon the above categories to consider what an employee performance measurement model may look like. Specifically from the point of view of a corporation's management it can monitor each of these categories to consider its employees performance for the corporation and the corporation's performance for the employees. The following subsections consider each of these categories and the measures that could be

relevant in more detail. The exception is the equity category, which will be considered as part of the second section as this is most commonly considered in monetary terms.

3.1.1. *Achievement of Performance Indicators*

The most commonly used indicator of employee performance is productivity. Productivity is the ratio of outputs to inputs, a deceptively simple concept according to Maunders (1984). Marginal productivity measures the increase in inputs necessary to increase outputs and is often problematic to measure. Productivity can be measured in terms of total factor productivity, where all inputs are considered, or in terms of a specific factor of production such as labour productivity. As we are concerned with employees here it is labour productivity which would appear most relevant. Maunders (1984) suggests that there is a fundamental problem with considering a specific factor of productivity in that labour, for example, will not have produced the output in isolation but in conjunction with the other factors of production. It is simply not possible to produce a unit of production without using other factors of production. The most obvious 'other factor of production' is capital and a change in capital employed may well lead to a change in the amount or type of labour required. Therefore in order to gain an appropriate understanding of changes in labour productivity it will also be necessary to consider changes in the other factors of production.

The numerator of a productivity calculation is output and this is preferably measured in terms of units of production rather than monetary value. Monetary values are obviously affected by price changes and

price discrimination and are not therefore an objective measure of output. Similarly sales (or turnover) are not an appropriate measure of output, as it will be related to the units sold in a period rather than the units produced. The key difference between production and sales is changes in the levels of stocks and this must therefore be taken into account in the calculation of output.

The denominator of a productivity calculation is the level of inputs and, as discussed above, in this case we are most concerned with the level of labour input. When considering an organization, or an industry as a whole, there are many different types of labour involved in the production process. Each employee will have different skills or tasks and cannot therefore be considered to be a standard unit of production. This suggests that it is not really appropriate to simply add different employee hours together. Parker and Martin (1995) argue that it is possible to simply use the level of employment in terms of hours or numbers of employees, assuming that there has not been a change in the quality or skills of the labour force. They argue that this is reasonable given the short time frame in their study. This meant four-year periods. If this cannot be assumed it is necessary to find an alternative measure of employee inputs. The use of employee costs can be claimed to compensate for differences in quality or skill, although Maunders (1984) suggests that without the existence of a perfect labour market the costs may not accurately reflect the intrinsic value of the employee contributions.

It is likely that any corporation's consideration of employee performance will consider the level of productivity. As discussed above this may be able to seem

to be a simple process, but in fact is very complex and requires assumptions to be made that can make the calculations rather subjective.

3.1.2. *Working conditions*

An employee's working conditions are often extremely difficult to measure in quantitative terms. For example, Hilton (1978) reports that within the second code of practice produced by the Advisory Conciliation and Arbitration Service, five areas are highlighted one of which is 'conditions'. The breakdown of factors suggests that conditions include:

- Recruitment
- Redeployment
- Training
- Promotion
- Equal opportunity
- Appraisal
- Safety, health, welfare
- Redundancy
- Pensions

Some of these factors, for example redeployment and redundancy information, may be more relevant to job security, but this shows the range of factors that are relevant but not related to remuneration. This is not the end of the story, as Maunders (1984) suggests under a category of health, safety and welfare information that is potentially relevant, but not necessarily exhaustive, includes accident rates, occupational diseases, noise, temperature, lighting, protection from weather, vibrations, ventilation, dirt / cleanliness, humidity / wetness, smells,

working space / overcrowding, air pollution – dust / fumes / smoke, radiation levels, exposure to chemicals, risks of biological infections, physical hazards from machinery etc, and fire hazards.

3.1.3. *Job security and job satisfaction*

Job security is also rather intangible, as it will relate to the state of mind of an individual employee and the perception that they have of their future prospects within an organization. Having said this, there are certain pieces of information that will have a direct impact on this perception. Specifically, the financial strength and performance of the organization will be important, but probably even more important are the future plans for both the business and its employment levels. It is for this reason that it has been argued that employees specifically require information on financial performance and plans. Levels of job security experienced by employees, as well as the other measures already discussed, will have a significant impact on their overall level of job satisfaction. This is to say that an employee's level of satisfaction will depend on their remuneration, level of productivity, working conditions and job security. As such these could be considered to be measures of inputs into employee satisfaction or welfare. An alternative approach is to measure the output, in this case the level of employee satisfaction. This can be done directly through the use of employee surveys into their level of satisfaction. The potential problems with this relate to the appropriate phrasing of a questionnaire to obtain unbiased and representative responses. A second way to measure job satisfaction is through the use of proxy measures. Maunders (1984) argues that the following measures could

be used as output indicators of employee satisfaction:

- Accidents
- Disputes incidence
- Grievances
- Absenteeism and poor time-keeping
- Productivity
- Employee wastage / stability
- Disciplinary cases

Each of these can be measured in absolute terms or relative to numbers of employees or time lost. According to Maunders (1984), the measure of labour wastage most commonly used is a variation of the 'annual labour turnover index' as expressed below:

$$ALT = \frac{\text{Numbers of leavers in year}}{\text{Ave. no. employed during year}} \times 100$$

Bowey (1974) has claimed that this measure is biased toward the 'pull' process (attractions elsewhere) as opposed to the 'push' process (dissatisfaction with job). Bowey continues that the 'push' process is better measured by an index of labour stability such as:

$$\frac{\text{Present number of employees with 1 year's service or more}}{\text{Total employed one year ago}} \times 100$$

Both the 'push' and 'pull' process are evidence of the comparative attractiveness of an organization and therefore the ALT, which incorporates both, could be considered to be the more comprehensive.

In order to measure the performance of an organization it is necessary to consider

many different aspects of that organization's relationship with the employee. It could be argued that an organization has performed well for an employee if that employee is satisfied in their work. The difficulty encountered is in measuring the level of satisfaction of employees, which even when attempted through direct communication, can be problematic. As a result attempts have been made to produce measures that are proxies for employee satisfaction and these can be found in two forms; either input or output measures. In fact both can be considered to be complementary and can therefore be used in conjunction to gain an appreciation of an organization's employee performance.

3.2. Economic valuations of employees

As mentioned earlier some of the key considerations when considering employee performance measures were monetary in nature. It was noted that at present traditional financial statements show employees as a cost, that therefore reduces profit, within the income statement. It can be argued that it is this depiction of employees as costs that places them in opposition to the providers of capital, most specifically shareholders. At its most crude the argument can easily be made that in order to sustain or increase profits for the benefits of shareholders, our primary stakeholder, total costs must be reduced. Employee costs, as a significant proportion of total costs are therefore often identified as an area in which savings can be made. This is not, however, the only way that money spent on employees can be conceived. Within the accounting literature there are two different approaches to employee costs and these are considered below. Firstly,

we will consider the role of employee wages and benefits within a value added statement rather than an income statement. Secondly, there has been a significant amount of literature that suggests that human resources and intellectual capital are actually items of value and should therefore be considered as assets rather than costs.

3.2.1. Value added statements

"The Corporate Report" (ASSC, 1975) suggested that in terms of overall corporate performance a statement of value added puts profits into "proper perspective". The value added by an organisation, as measured by turnover less purchased materials and services, is used to pay the contributing factors in terms of employee wages and benefits, dividends and interest, taxation and amount retained for reinvestment.

Burchell, Clubb and Hopwood (1985) suggest that there are two strands to value added. Firstly, it represents wealth created by the organisation and this "provides a basis for the improved calculation of certain important indices of enterprise performance, namely efficiency and productivity (e.g. Ball, 1968)". The second strand suggests that value added can reveal "something about the social character of production, something which is occluded by traditional profit and loss accounting." This is to say that value is created by a combination of efforts from different stakeholders co-operating. Therefore an important part of the rationale for value added was that it would make for a 'harmonious', 'democratic', 'co-operative' and 'efficient' organisation.

Burchell, Clubb and Hopwood (1985) provide evidence that the value added statement grew in popularity in the UK

in the late 1970s, but that this interest dwindled in the 1980s. In fact they suggest that the decline started with the election of the Conservative government in 1979. With this change in government, they argue that there was a shift in economic and industrial relations policy. Therefore stress was placed on competition, training and 'shedding "surplus" labour', and the moves towards industrial democracy were not central to this. Most specifically the requirements to be competitive and to shed surplus labour are more aligned to the income statement conception of employee wages and benefits as costs rather than as a contributing factor to the value adding potential of the corporation.

3.2.2. *Human resource accounting*

Human resource accounting is by no means a new concept and in fact it was at its most popular in the 1970s (Roslender and Fincham, 2004). In fact in the UK Human Resource Accounting was the subject of a special issue of *Accounting, Organizations and Society* (AOS) in 1976, but research interest waned in the UK in the 1980s onwards. One aspect of the human resource accounting research was based on the premise that human resources are indeed a scarce resource and that they have the potential to provide future benefits to a corporation. Therefore part of this human resource accounting research looks at ways in which a monetary value can be placed upon these human resources (see for example Marquès, 1976). Flamholtz (1976, p. 153) suggests that the reason for this was "as a *managerial tool* rather than for corporate financial reporting". For example Carper and Posey (1976) consider "three different surrogate measures for personnel

valuation within a CPA firm" (p. 143). The three surrogate measures considered by Casper and Posey (1976) were based on the Flamholtz (1969) replacement cost model, annual salary and historical costs related to recruitment and professional development. They concluded that the key issues related to whether such measures could be seen as a valid or reliable measure of the value of the human resource and the preferred model was the replacement cost model developed by Flamholtz (1969). In their words:

"This particular model hypothetically traces an individual through a set of mutually exclusive organizational roles or "service states" during a time interval estimated by applying subjective probabilities. The service states basically represent "service levels" corresponding to position and salary grades and "service groups" relating to different degrees of performance (i.e. average, above average, or below average performance at a particular level or position. Therefore, an individual's expected future contribution to the entity can be estimated using three independent variables: (1) service level; (2) service group; and (3) time interval given the probabilities of an individual occupying various service levels during the time span reviewed. The end result is an approximation of an individual's *expected realizable value* to the firm."

(Carper and Posey, 1976, p.144).

Other models of human resource accounting were also being suggested in the early 1970s and these models related to "such variables as the firm's investment in on-the job training, employee replacement costs, or employee net realizable value" (American Accounting Association Committee on Human Resource Accounting, 1974, p. 117, as quoted in Flamholtz, 1976).

The special issue in AOS also identifies other models that attempt to value human resources. The human resource value model (Ogan, 1976) included seven major determinants of value including amongst other things salaries or wages, recruitment, training and development costs as well as probability of continued employment and survival. Another framework was described by Cannon (1976) that looked at “skill development as an investment, rather than a cost” (p. 253) for a slightly later consideration of human resource accounting measurement literature see Grove, Mock and Ehrenreich (1977). They provide a “human resource accounting measurement systems taxonomy” (p. 223) that distinguishes between systems based upon inputs (such as acquisition costs) and outputs (such as opportunity costs).

As noted above, however, certainly in the UK the interest in human resource accounting did not continue past the early 1980s. This may be coincidental, but may be linked with the changes in UK government that was argued to have a direct impact upon industrial relations suggested by Burchell, Clubb and Hopwood (1985) that were noted earlier. As mentioned earlier in this section it is equally possible that concerns about the validity and reliability of the proposed measurement models, as well as in some cases their complexity, could well have been related to their reduced popularity.

3.3. **Conclusions to the employees section**

To conclude this section of the paper it is interesting to note that in Darwinian terms,

i.e. survival of the fittest, it appears to be the non-financial performance measurement models that appear to better have stood the test of time. Specifically, if we return to human resource accounting we see that attempts to place a specific financial value on human resources are no longer a popular area for academic research. In fact even where the title human resource accounting is still used it is recognised that it is not only about ‘putting people on the balance sheet’. This is partly due to problems discussed above in terms of calculating a reasonable value, but Toulson and Dewe (2004) suggest that it is really about recognising employees as a valuable resource to a corporation and helping management develop and manage this resource.

Roslender and Fincham (2004) suggest that human resource accounting remained more popular in Sweden and that this has now developed into research into the accounting for intellectual capital. The specific detail of development in the accounting for intellectual capital are beyond the scope of this paper, but the work by Grojer and Johansen (1998) and Mouritsen, Larsen and Bukh (see for example: 2001a; and 2001b) have been very influential. The work by Mouritsen *et al.* (2001a) specifically refers to the case of Skandia's Navigator and this has some similarities to the Balanced Scorecard discussed earlier. It is different to the balanced scorecard; however, in that at its centre is a human focus, although it also includes a financial focus, customer focus, and renewal and development. The scorecard itself it made up of a great number of indicators and many of these are non-financial and specifically within the human focus are indicators that are consistent with those

measures discussed earlier. Mouritsen *et al.* (2001b) focus on intellectual capital statements that again consider much more than traditional financial statements. In fact they are suggested to be “complex forms of reporting which combine numbers, narration and visualisation” (p. 745). Interestingly when they conclude they suggest that to “merely say that it somehow reflects the difference between market values and book values is inadequate. When firms talk about intellectual capital statements, they are expressing their interests in controlling and managing the firm” (p. 760). This suggests that when considering performance measurement for employees it is not a case of being able to simply value an asset because this does not reflect the diverse and complex nature of the relationship between the corporation and the employees.

4. THE ENVIRONMENT

Wheeler and Silanpaa (1997) classify the natural environment as a primary non-social stakeholder. Clearly an extra complication here is that the natural environment can not speak for itself and so is often championed by special interest groups (as secondary non-social stakeholders), which aim to protect it. There are a great many of these special interest groups as there are many environmental issues affecting the planet. Perhaps as a reflection of the importance of these issues environmental accounting has been a popular subject amongst academics since the late 1980s. Some of the environmental accounting research has attempted to demonstrate a causal relationship between environmental performance, or disclosure, and financial

performance (one such example is Toms, 2000). Another important strand of the empirical research has been considering the change in volume of corporate disclosure over a period of time of which there has been many studies. Neither of these strands of research has specifically identified measures that may well help measure corporate environmental performance. This is not to say that there has not been any such work either within the accounting disciplines or elsewhere and the remainder of this section will consider this research.

As with the previous section that related to employees so this section is divided into the two general approaches identified for considering stakeholder performance measurement. Firstly we will consider the approach where the impacts are not quantified in monetary terms (Boyce, 2000) in which case other quantitative data is used. Secondly, environmental effects could be quantified into costs and benefits and somehow incorporated into an adjusted version of traditional financial statements.

4.1. Specific environmental performance measures

The first approach identifies the key environmental issues facing the planet, and therefore some may argue indirectly, or directly, of relevance to corporations, and then considers measures that appropriately incorporate performance on these issues. Gray, Bebbington and Walters (1993) suggest that the following environmental issues are those that are most pressing:

Table 2
Environmental issues

Crisis? What Crisis	
— Thinning of the ozone layer	— Third world debt
— Global warming	— Deforestation
— Species extinction	— Waste disposal
— Habitat destruction	— Energy usage
— Acid rain	— Starvation
— Desertification	— Inequality
— Soil erosion	— Population
— Air pollution	— Water depletion
— Water pollution	— Toxic chemicals
— Land pollution	— Nuclear waste
— Noise pollution	— Ethnic peoples
— Resource scarcity	— Poverty

Source: Gray, Bebbington and Walters, 1993, p. 25

As can be seen there are a great many issues identified. Some may argue that some of the issues identified here are actually more social in nature or relate to nonhuman species rather than environmental issues, but others are very clearly issues of great importance in terms of the natural environment that we inhabit. Perhaps not surprisingly, although definitely disappointingly, these issues are at least as relevant today as they were when they were identified by the authors more than a decade ago. In fact if anything some of the issues are now considered to be much more pressing than previously thought. For example, it appears that everyone including previously sceptical scientists are willing to accept that global warming, now more commonly termed climate change, is occurring, although some still argue as to the human role in its causation. Given this

list of issues it is then a case of actually measuring corporate performance in terms of their impact upon a given issue. For the majority of the issues the technology is in place such that specific measures are available to gauge levels of specific inputs and outputs that are relevant to the issues identified. Again the GRI framework is one source, which has a specific section on environmental indicators. These are further classified into: materials; energy; water; biodiversity; emissions, effluents, and waste; products and services; compliance; transport; and overall indicators. As mentioned earlier this will not be considered in any more detail here, as it is more central to the content of the Abadia paper that follows this one in this special issue.

Another source of environmental performance measures is provided by ISO

14031 (ISO, 1997) that has three basic indicator categories:

1. Environmental condition indicators – that track the environmental consequences of business activities. Bennett and James (1998) suggest that these often focus on receptor indicators such as impacts on air, water, land, flora and fauna, people and buildings.
2. Operational environmental performance indicators – this is split into 9 sub-categories:
 - Inputs of materials, energy and services
 - The operation of facilities and equipment and logistics
 - Outputs of products, services, wastes and emissions.
3. Management environmental performance indicators – that consider the implementation of policies and programmes, the conformity of organizational actions with requirements or expectations, community relations and environment-related financial performance.

It is certainly the case that there is not a shortage of possible measures that could be used by corporations to measure their environmental performance. These quantitative measures will be denominated in terms of weight, volume, or consumption and as stated above the technology is in place for corporations to do this. Once measured targets can be set for changes in performance. Such targets could be set for either normative or instrumental reasons. This is to say, normatively, that a reduction in a particular emission may be targeted because corporate management

believes that such a reduction is important for its own sake. Instrumentally speaking a reduction may be targeted because there are cost implications of the resource and therefore there is a business case, in terms of cost reduction and therefore profit improvement, to reduce the use of the resource.

4.2. Environmental Economic Valuations

The second general approach is to attempt to translate the raw data, in the terms seen in the previous section, into an economic or monetary valuation. There are a number of ways by which economic valuations of environmental impacts in monetary terms. These include those that are based on existing market prices for goods and those where such market prices are not available. Even where market prices for goods do exist some argue that they do not accurately reflect the full cost of environmental impacts, as certain environmental costs are not included within the valuation. The remainder of this section of the paper is divided into, firstly, a consideration of attempts to calculate total economic value of environmental resources and, secondly, how environmental economic valuations may be incorporated into traditional accounting systems.

4.2.1. Total Economic Value

The Inter-Departmental Committee (IDC) on Environmental Economic Valuation (2003) suggests that in “an ideal world any decision affecting the resource valuation exercise should include all use and non-use values, whether there is an actual monetary value in evidence or not. Economists

refer to this as “*Total Economic Value*” (TEV)” (p. 7). In the classification provided (as adapted from Pearce and Morgan, 1994, p. 12) they suggest that the major categories of value are: direct use values; indirect use values; option values; existence values; and bequest values. Furthermore, the suggestion made here is that TEV is a sum of each of these values. Herath (2005), reporting on the research by Barzetti (1993) and Pearsall (1984), classifies the “nature of values of environmental resources” under the headings of: direct use value; indirect use value; uncertain use value; and non-use value. The classifications are similar, as option values are equivalent to uncertain use value and existence values and bequest values both are considered part of the non-use values in the second classification.

The classification provided by Herath (2005) provides further categorisation of items within the different types of value, for example within non-use value there is “intrinsic value”, “existence value”, “bequest value” and “vicarious value”. Before we consider in a little more detail different valuation methods it is worth noting that Turner *et al.* (2003) suggest that the aggregate TEV itself may still underestimate the ‘total systems value’. They suggest that actually the: “continued functioning of a healthy ecosystem is more than the sum of its individual functions (components). The difference lies in that the operating system yields or possesses primary, ‘glue’ or infrastructure value, i.e. value related to the fact that some combinations of ecosystem structure and composition is necessary to ensure the ‘healthy’ functioning of the system, or system status (Gren *et al.*, 1994).” (p. 495)

Therefore, following this reasoning by Turner *et al.* (2003) would suggest that even

if we can provide monetary values for all of the different component parts of TEV we may still not accurately reflect the total value of the environmental resources. There has been, however significant efforts to attempt to provide monetary values for the different components of TEV. It appears that it is relatively easier to provide a monetary valuation for a direct use value than say a non-use value. This is primarily because market prices are more readily available for the direct use values than for the other categories, although Herath (2005) suggests that even for direct use values the valuation “are not perfect and many problems have been observed (Herath, 1999)” (p. 1043).

If we return to the IDC (2003) report they provide a useful classification of the different approaches available to providing an economic valuation of environmental resources. Effectively there are three approaches to valuation and these are those based on market prices, surrogate or proxy market methods and survey-based methods. Market prices can be based on a production basis, such as a loss of production caused by a change to the environmental resource, or an expenditure basis, such as expenditure to maintain or repair environmental quality, that is or could be caused by changes to the environmental resource. In these cases there is a direct market price available and so the collection of the raw data is relatively easy. As mentioned above, however, such market prices are not available for all impacts upon environmental resources and so the second approach uses surrogate market methods. Perhaps the two most popular surrogate measures are hedonic prices and the travel cost method. Under hedonic pricing differences between equivalent market prices are used to infer the economic value

of environmental resources. For example it is argued that the value of a particular environmental resource could be inferred from differences in the market prices of property near to this resource as opposed to equivalent properties that are not in the vicinity of the resource. The travel cost method is based on the premise that if people are willing to incur costs, in terms of both time and money, to travel to an environmental resource then this implies that it has a value. Therefore the more that people are willing to spend on travelling to an environmental resource would be represented by a higher economic value for that environmental resource. A survey-based approach is the third way that economic valuations can be estimated. The best known of these approaches is the contingent valuation approach where a survey is carried out to discover the how much value individuals place on an environmental resource. More specifically Kontogianni *et al.* (2001) identify that the “most common variant of this approach is to elicit respondent’s willingness to pay (WTP) either to ensure some gain in the asset or ... to avoid some degree of loss” (p. 124). Under contingent valuation individual valuations are aggregated (Hanemann, 1994) in order to identify demand curves for the environmental resource from which a total value can be calculated.

This section on total economic value introduces the different classifications of value that can be assigned to environmental resources. It then, rather briefly, looks at some of the different approaches that can be adopted in an attempt to actually provide a value to these different resources. This section is by no means a comprehensive review of this literature, primarily from the

ecological economics field, and other techniques are available (see for example the ecological footprint concept suggested by Knaus *et al.* (2006) and cost-benefit analysis discussed by Hansjürgens (2004) among others). The next section considers how these valuations may be incorporated into more traditional financial statements.

4.2.2. *Environmental Economic Valuations and accounting*

It has been suggested that economic valuations of environmental impacts resources can or could be used in some way in traditional financial statements. One such approach is to consider the “full cost” of a corporation’s activities by including costs that normally are externalised by the corporation. Such externalities often fall on the environment or stakeholder groups that have few resources with which to resist this externalisation of the costs. One advocate of a form of full cost, i.e. incorporating both “private” costs and the costs of externalities is Mathews (1993). He terms this approach ‘Total Impact Accounting’ and this would necessarily involve transferring all effects of an organization’s activities into monetary terms. Therefore when a corporation’s activities have an effect on the environment this effect should be charged to the corporation as a cost of its activities.

Some research has been undertaken into the level of externalities caused by the generation of electricity. This is based on the acknowledgement that the private costs of such activities do not reflect the full cost due to the environmental externalities caused. Söderholm and Sundqvist (2003) suggest that there are two approaches that can be used to evaluate these externalities. These are the “damage cost” approach and

the “abatement cost” approach. These are both examples of market based measures based upon expenditures, as discussed in the previous section. Abatement costs are “the costs of controlling or mitigating damage or the costs of meeting legislated regulations as an implicit value of the damage avoided” (p. 336). Whereas the damage cost approach explicitly measures “the economic damages arising from a negative externality” (p. 336).

An interesting attempt at this was made by Atkinson (2000) who considered the health and non-health ‘damage’ caused by pollutants emitted by the energy industry. Specifically when evaluating the externalities caused by the energy industry he looked at emissions of SO₂, NO_x, PM₁₀, CO₂, and CH₄. Each tonne emitted of each of these pollutants was given a monetary value (or cost) based on the external effects that they had. The monetary values were derived from a variety of sources (Fankhauser, 1994; European Commission, 1995; Maddison *et al.* 1995; Pearce & Newcombe, 1998) and a range of values was provided. For example he suggested that an estimate of the damage caused by a tonne of SO₂ being emitted was in the range of £300 - £670. One can clearly see that this there is quite a range in the estimated values and of course the need to estimate values and the resultant subjectivity/imprecision can be used as a criticism of this approach. Atkinson (2000) then used these estimations to consider the ‘green value added’ and ‘corporate genuine saving’ (CGS) for different industries and corporation within the UK.

As an example we can see that Atkinson considered the green value added for the UK electricity industry and the CGS for Powergen plc (one of the largest electricity generators in the UK). The green value

added measure took the value added (as discussed earlier) by the UK electricity industry and subtracted from that the value of the environmental damage caused by the industry. This significantly reduces the value added of the industry and in effect shows that environmental damage is destroying much of the value that the industry is creating. Similarly, Atkinson’s calculations of CGS for Powergen plc took the company’s profit on ordinary activities and deducted values for the environmental damage caused by the emissions that the company produced. Actually, with respect to the green value added and CGS measures, there was a large improvement in environmental performance in the UK electricity industry over the period 1992-1996. In fact the improvement was the most dramatic in any industry, but even so under the CGS criteria Powergen plc did not make a positive CGS until 1996. This effectively means that Powergen’s profit on ordinary activities was not sufficient to cover the value of the environmental damage caused by its activities until the year 1996. In 1996 the profit had grown and environmental damage reduced such that the profit was greater than the monetary value assigned to the environmental damage. This approach to accounting has two fundamental problems, both acknowledged by Atkinson. Transferring pollution details into monetary values involves a high level of estimation, which can provide significant doubts about the accuracy of any results. Secondly this approach would appear to suggest that if Powergen plc had higher profits then there would not be an environmental problem as there would be a corporate genuine saving. This is irrespective of whether any of this profit was used to tackle the environmental problems caused by the activities of the organisation.

4.3. **Conclusions to the environment section**

This section specifically considered attempts that have been made to develop the two general approaches to performance measurement within the environmental field. Corporations have a great number of environmental impacts and so there are a great number of quantitative, but non-monetary, measures that could be calculated as part of an environmental performance measurement model. Similarly when attempting to calculate economic values for environmental resources and impacts a great many different types of values have been identified and there are also a great number of approaches to calculating values. The conclusions to this paper will now discuss the appropriateness of these two general approaches and suggests how this field can be taken forwards in the future.

5. **CONCLUSIONS**

This paper began by suggesting that when considering CSR, even CSR as justified in terms of the business case, stakeholders are of great importance to corporations. In the UK the Company Law Review (DTI, 2002) has suggested that it is appropriate for UK companies to be managed upon the basis of an enlightened shareholder approach. Within this approach the importance of stakeholders, other than shareholders, is recognised as being instrumental in succeeding in providing shareholder value. Given the importance of these other stakeholders it is then important that corporate management measure and manage stakeholder performance. In order to do this there are two general approaches that could be adopted and

these are the use of monetary values to reflect stakeholder value or cost and non-monetary values. In order to consider these approaches further this paper considered the possible use of these approaches for two stakeholder groups: namely employees and the environment.

When considering the economic value of stakeholder resources we are immediately confronted by the problem of how such resources can be valued. Earlier in the paper attempts to value human and environmental resources were discussed, but even advocates of such practices recognise that there are great difficulties in such calculations. By their very nature uncertainties and subjective estimates have to be made such that the final value can be challenged through questioning the assumptions made within the model. It is intrinsically problematic to attempt to provide an economic value for resources that do not have a market price.

Another concern is as to whether it is appropriate to even attempt to value such resources. Is it ethical to place a value upon the environment or a person? The decline in attempts to value employees in this way would certainly suggest that Human Resource accounting has failed to do this. Furthermore, from a deep ecology perspective it has been suggested that any attempt to value the environment is demeaning and actually is adding to environmental problems (as discussed further by Milne, 1996). From this deep ecology perspective the value of nature is zero or infinity (Cross, 1989 as cited in Milne, 1996) and therefore these attempts to calculate a different value is implicitly flawed.

In terms of measuring stakeholder performance this author would conclude that

non-monetary measures are more likely to be useful. A key problem with this approach, however, is that there are so many factors that can be measured for each stakeholder and so any attempt to do this in a comprehensive way will result in a very large number of measures to be considered. Such a large number of measures would make it extremely difficult to get a coherent understanding of corporate performance in total or for a specific stakeholder group. This may, however, be

accepted in that corporate performance is multi-faceted in that it affects many different stakeholders in many different ways and so will, by its very nature, be messy and complex. It is hoped that such complexity is not seen as a reason to not attempt this type of stakeholder performance measurement, as this author believes that the measurement and management of stakeholder performance should form a fundamental part of corporate social responsibility.

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