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***Rethinking of Multiple Performance Measurement Systems In The Organisation***

**Pengkajian Ulang Berbagai Sistem Sistem Pengukuran Kinerja di Organisasi**

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***Abstract***

Tujuan dari kajian ini adalah *review* literatur yang berkenaan dengan sistem pengukuran kinerja. Kajian ini terinspirasi dari kajian-kajian sebelumnya yang mendiskusikan indikator tunggal dari pengukuran kinerja organisasi. Dewasa ini, penggunaan aspek finansial ataupun akuntansi dalam mengukur kinerja sudah tidak layak lagi. Berdasarkan permasalahan tersebut, peneliti-peneliti mulai merumuskan pengukuran kinerja yang baru. Pada kajian ini pengukuran kinerja digolongkan ke dalam empat perspektif: manajemen operasional dan pengukuran kinerja, manajemen pemasaran dan pengukuran kinerja, manajemen sumber daya manusia dan pengukuran kinerja, manajemen strategik dan pengukuran kinerja. Kajian selanjutnya sebaiknya diarahkan untuk menguji manfaat pengukuran kinerja tersebut di lapangan.

Kata kunci: pengukuran kinerja, indikator tunggal, kinerja organisasi

**Introduction**

For many years measuring organisational performance has been an important function and has played a significant role in developing organisations strategies and evaluating performances (Chenhall & Langfield-Smith, 2007; Gimbert, Bisbe, & Mendoza, 2010; Kaplan & Norton, 2001a, b). This measure can be difficult as well as challenging for organisations especially when what has to be measured keeps changing (see: Chenhall, 2003). Performance measurement systems can be defined in several ways. For example, Gimbert et al.,(2010, p. 478) have a look *Performance Measurement Systems(PMSs) as 'concise sets of (financial and/or non-financial)metrics that support the decision-making processes of an organisation by gathering, processing and analysing quantified information about its performance, and presenting it in the form of a succinct overview'.* According to above definition, performance measurement system has a function to gather information, process and analysis about action that has been conducted then compared it to the planned action.

Although there has been an intensive research in this area for many years, there is no unified method for evaluating an organisations financial performance. The objective of this essay is to address the historical and recent approaches toward evaluating organisational financial and non-financial performance measurement by linking various popular methods used today and their limitations.  Since the 1980s several foundations were laid for measuring organisational performance and in past 30 years there have been so many attempts to measure organisational performance by not only using accounting and financial measures, but recently also with the help of mixed financial and nonfinancial methods. Financial performance is one of three specific areas of an organisation and is measured generally by accounting measures (Richard, Devinney, Yip, & Johnson, 2009). Accounting measures such as ROA, ROE, ROI, EBITDA, net income, net operating profit etc. rely upon financial information reported in financial statements and reflect an organisation's profitability, growth, leverage, liquidity and cash flows (Carton, 2006)**.**

## Method

The historical and recent approaches toward evaluating organisational financial and non-financial performance measurement by linking various popular methods used today and their limitations.  The method traced by literature review.

## Result and Discussion

### Accounting Based Measurement Methods

According to Merchant (2006) and Gunasekaran, Patel, & McGaughey(2004) financial indicators are most commonly and frequently practiced today by many organisations because it enable to organisation to understand organisation performance correspond with market return or competitor. An example can be seen from Gunasekaran, Patel, & McGaughey's(2004) study that using accounting or financial performance-based performance enable to enhance financial benefit for a firm.  The belief of many managers is that markets respond aggressively to changes in accounting reporting and returns and they report profit objectives in accounting terms. It can deliver controllability by adjusting to match different levels of management. For example the CEO is more accountable for more accounting items than lower level management.

Accounting measures can be measured in various timing stages. Some net income and accounting returns can be monthly or quarterly others even on a daily basis. They are reasonably accurate as the rules for measurement of income statements and balance sheets are clear and detailed, so variance is reduced and objective as regular audit checks provide that. These methods are clear and are understandable as accounting education is a part of all business study programs thus nearly all managers who have such formal education will understand what the accounting measures represent.

## Different Methods for Measuring Organisational Financial Performance

Despite the need for accurately measuring organisational performance, there is lack of prescribed methods concerning how organisational performance is or should be measured (Carton, 2006). It might be due to accounting complexities and many available alternative accounting methods allowed by financial reporting standards and that is why there are many different methods which all measure organisational financial performance. Recently many attempts have been made to find out the correlation between accounting methods and financial performance to get the best financial performance measurement methods.

## Return on Investment

Return on Investment (ROI) is one of the widely used method and "is usually defined as the ratio of net operating profit to the net book value of assets"(Richard et al., 2009, p. 730). ROI is the one of the leading traditional accounting methods which gained popularity because of its simplicity, consistency and uniformity to measuring an organisations financial performance. Aside from these advantages there are several limitations of ROI, such as it can encourage managers to focus on short-term financial performance, at the expense of the long term. It does not consider risk associated with the investment in calculation and can generate a sub-optimisation dilemma which encourages managers to invest in such ways to promote their organisation with great potentials, even though those investments may not be in organisation's best interest.

Moreover, it is also criticised for being a misleading performance signal because of complexities involved in measuring the denominator of ROI measurements; mainly fixed assets, and can present deceptive signals about the performance of an investment centre. The asset values reflected in the company's balance sheets do not represent the real value of the assets accessible to managers for earning current returns (Merchant & Van der Stede, 2007).

## Residual Income

The Residual Income (RI) measure succeeds the sub-optimisation limitation of ROI. It is calculated by subtracting a capital charge for the net assets tied up in the investment centre from profit. This method concentrates on the financing-type sub-optimisation problem and removes the manager's appeal to increase their entity's leverage to extreme levels by considering the cost of both debt and equity financing. Residual income, an accounting performance measure, is defined to be operating profit with a capital charge subtracted (Merchant & Van der Stede, 2007).

### Economic Value Added (EVA)

Economic Value Added (EVA) is another measure which is a modification of Residual Income, with adjustments to how one calculates income and capital. In order to improve congruence as a result of limitations of accounting measures EVA was introduced by some organisations to calculate and estimate a true economic profit of an organisation. EVA helps organizations to make better investment decisions and profitable investment opportunities by considering long-term and short-term benefits for the company.

Therefore it is an effective measure of the quality of managerial decisions as well as a reliable indicator of an enterprise's value growth in future. For some industries EVA is not suitable, for instance new fast growing companies such as high technology businesses change rapidly which at times in the growth cycle may be negative or may not give a good indication of the companies true worth because the firms value is on its future cash flows and value. Also EVA is distorted by inflation so it cannot be used at times of high inflation in calculating actual profit. Then, the adjusted EVA, a better measure can correct these distortions (Merchant & Van der Stede, 2007)

### Net Present Value (NPV)

The Net Present Value is calculated as the incoming cash flow minus the net capital investment discounted on the purchase price of the project or initial capital investment. This method is required to assess whether an investment will provide an appropriate yield over a given period of time and if that is deemed appropriate for the project and for investors. The total cost of the investment will require a certain rate of return and if the project NPV is greater or equal to zero then that rate of return is expected to be profitable at a raw figure level. It reflects company's decision in investment, which of course intends to increase the value of the company in time value of returns and this increase is reflected in that companies worth.

An issue with the NPV method is that it does not provide a clear assessment of the overall gain or loss when executing a project. It is criticized for using the present dollar value of return rather than a percentage return in relation to investment costs, and therefore many organisations will use an internal rate of return or other complimentary efficiency measures (Moyer, McGuigan, & Rao, 2008).

NPV is often effective for investment and as a profitability measure to maximize returns and increase the wealth of stockholders. Differing from ROI this perspective calculates the time value of cash flows and investments, and analyses future (ex ante) and current (posterior) investments based on discounted cash flows. This is based on the companies' ability to apply NPV on performing cash flows to maximise investments and re-allocation of cash flow into profitable projects. However there are complications with accounting measures regarding anticipation of future cash flow and discount rates (Moyer et al., 2008).

**Limitations**

However, there are some important practical issues regarding accounting measures as they do not reflect an organisations value change perfectly and as such accounting measures are taken from an organisations past performance, whereas economic value is derived from future cash flow (Merchant & Van der Stede, 2007). Another important thing to consider while using these financial performance evaluation methods is that the accounting rules based on accounting standards are not always consistent with underlying theoretical logic of organisational performance. For example choices about inventory (FIFO, LIFO), depreciation schedules (Straight line, accelerated etc) and booking expenses can degrade the ability to accurately beat the time dimension. One must understand the nature of rules that define the measure of interest to fully apply accounting measures (Richard et al., 2009).

**Recent Developments of multi performance measures**

In the past traditional accounting measures which are discussed above would have been sufficient, however in recent times organisational performance does not rely solely on these methods but dictates something more comprehensive. Some scholars has proposed several methods of performance measures that are used in many context. Chenhall & Langfield-Smith (2007) notes that there are some performance perspetives that has been known after development of accounting performance measures. Those measures are:

1. *Operating Management And Performance Measurement*: Advanced manufacturing and flexible performance measurement, quality programs and performance measurement, and advanced manufacturing and non-financial performance measures;
2. *Marketing And Performance Measurement:* Cutomer satisfation measurement and organisational performance, Customer lifetime value, measuring brand equity, and Customer-oriented accounting research;
3. *Human Resources And Performance Measures:* 360 Degree Performance Ratings, and Human Resource Accounting;
4. *Strategy and Performance Measures:* Balanced Scorecards, The performance

Measurement Questionaire, The Smart System.

***Operating Management And Performance Measurement*** **Quality programs and performance measurement**

Chenhall & Langfield-Smith (2007)gave an example of quality programs such as TQM. The main advantage of using TQM is to encourage managers and employess any level to concentrate on effectivity on production across the value chain (Chenhall & Langfield-Smith, 2007). Hoque (2003, p. 553) defined Total quality management (TQM) as 'a set of management concepts and toolsthat aims to involve managers, employees and workers to yield continuous per-formance improvement'. Further, Hoque (2003) suggested that TQM try to enhance customer satisfaction by fulfiling their needs, improving organisational productivity that lead to the improvement of organisational value.

Advanced manufacturing and non-financial perfomrance measures;

***Marketing And Performance Measurement*** **Customer satisfation measurement and organisational performance**

Customer satisfaction becomes more prominent indicator for organisation to gain competitive advantage (Yang & Peterson, 2004). Nowaday, many organisation try to focus fulfiling customer satisfaction. In service value chain by Heskett, Jones, Loveman, Sasser Jr, & Schlesinger (2008) clearly mentioned that since customers get satisfication for the business, they will become loyalty to product or service that tend to buy more that will ultimate the profit. Furthermore, Reichheld & Sasser Jr (1990) argue that defecting customer will influence profit slump down to the lower level. Thus, they suggest that firm shous strive for 'zero defection' to keep their market share increase. In order to get 'zero defection' organisation should monitor the work of employee and evaluate employes' service to know how customer feel with products/services of the firms.

**Customer Lifetime Value (CLV)**

Customer Lifetime Values has been extensively discussed in marketing area. Customer Lifelime Value is 'the net profit or loss to a fimr from a customer flowing from the lifetime of transactions of the customer with the firm' (Chenhall & Langfield-Smith, 2007, p. 271). Berger & Nasr (1998) CLV is important factor to design and budget marketing such as marketing aquisition.  To do this, CLV can be calculated by using purchace frequency, contribution margin, and marketing costs.

**Customer-Oriented Accounting**

There are some studies investigate the important of customer based accounting performance measures. These are Guilding & McManus(2002), Anderson &

Guilding(2006) and so on. Chenhall & Langfield-Smith(2007) concluded from Guilding & McManus's(2002) paper that since organisation can value the customer need like an asset, it can increase customer loyalty, increase sales and increase customers number through mouth of mouth and customers retention will increase sales from these customers. Thus, introduction of customer measure has potential aspect for management accounting to 'own' measure that will influence customer operational area (Chenhall & Langfield-Smith, 2007).

***Human Resources And Performance Measures*** **360 Degree Performance Ratings**

Chenhall & Langfield-Smith (2007) notes that essencial element for Human Resources Management (HRM) is how employeess is be evaluated and trained to improve their knowledge and understading that will impact on promoting and succession. Mount, Judge, Scullen, Sytsma, & Hezlett (1998) claims that 360 Degree Performance Rating are a types of eveluation for individual performance where individual are assessed by multiple rater in any levels of evaluation. Using this eveluation, supervisor has rich of point of views that enable to gather broad information about employee's skill and ability as well as weakness. According to Oh & Berry (2009, p. 1499) that 'a fundamental assumption underlying collection of ratings from multiple sources is that each rating source has a unique, yet potentially valid, perspective on the ratee's performance; thus, ratings from multiple sources will tap a greater proportion of the true performance domain than any single rating source'

**Human Resource Accounting**

As been stated above that in current situation organisation's workforce is essential element of business asset strategic (Chenhall & Langfield-Smith, 2007). Developing human resources through training and motivation enable to improve human capability to assess organisational objectives. In many sector that put people as key success of business, such as sport, human resources accounting can be applied to value employees as organisational assset. According to Ripoll and Labatut (1994) as cited by Barcons-Vilardell, et al. (1999, p. 386) that there are two reason why human resouces accounting are important to be applies. First, 'people are a valuable resource to a firm so long as they perform services that can be quantified. The firm need not own a person for him to be considered a resource. Second, the value of a person as a resource depends on how he is employed. So management style will also influence the human resource value'.

***Strategy and Performance Measures* The performance Measurement Questionaire (PMQ)**

Dixon, Nanni, & Vollmann (1990) developed *The Performance Measurement Questionnaire* to assess and determine performance within organisation. Using this questionaire, organisation enables to seek the organisational objectives that has been achieved including countinous improvement when it is neccesary to be conducted. Ghalayini & Noble (1996) mentioned that Dixon, Nanni, & Vollmann's(1990) PMQ was evaluated using four ways: 1) alignment, which is to provide information the extent to which performance measures align with the organisational objectives, 2) Congruence, is conducted to provide how well performance measurements are conducted concurence with the action and strategy of the organisation, 3) Concensus is clasification of data according to the level of management and functional, 4) Confusion, is carried out to examine deviation of improvement and actions.

**The Smart System**

The Strategic Measurement Analysis and Reporting Technique (SMART) system was developed by Cross & Lynch (1988) due to dissatisfaction of using financial data as a single indicators. Cross & Lynch (1988)says that the SMART system consists on a four level pyramid of indicators to generate organisational objectives. Those level pyramid of indicator can be seen in the following pigures:

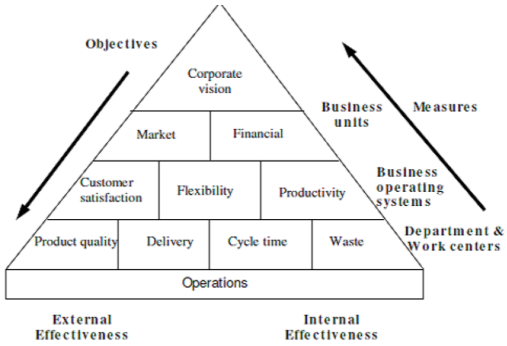
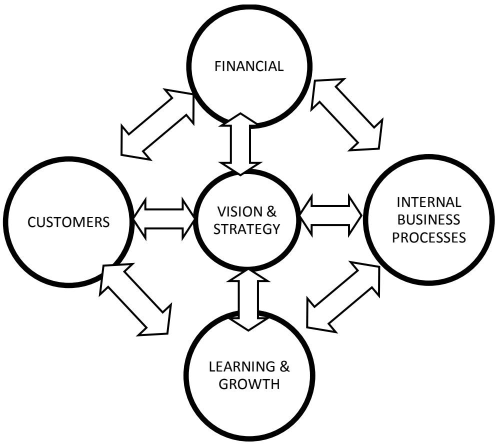



Figure 1. The Smart Pyramid from (Cross & Lynch, 1988)

**Balanced Scorecards**

Balanced Scorecards (BSC) is the most famous multiple performance measures from Kaplan & Norton (1992). BSC is designed in a way that it provides necessary information to effectively manage organisational business strategy(Kaplan & Norton, 1996a, b, 2001a). Kaplan and Norton introduced the concept of BSC in the early 1990s, which first time included non-financial aspects into the performance measurement system. The BSC not only paid an attention to intangible assetssuch as service quality, learning, prompt and reliable services, responsiveness efficiency, and adaptable business processes that are unable to be captured in the balance sheet, but it also considers that employees, customers, and shareholders are a part of their respective organisations(Kaplan & Norton, 1996a).




The centre point of BSC is organisational vision and strategy which is linked to all financial and non-financial aspects of an organisation. Due to these characteristics, the balanced scorecard has a role as a lagging and leading indicator to obtain organizational performance.

Lagging indicators of performance measurement systems showed that this tool has the same role with financial performance measurement, that evaluate the past period activity of the organization while leading indicators of the BSC is that its roleis to monitor and detect ongoing organizational process activities and perform a correction as soon as it is found to be problematic (Jazayeri & Scapens, 2008). They (2008). considered that this is because the BSC emphasizes a causal-effect relationship between financial and nonfinancial indicators while nonfinancial performance measures can be used to predict financial performance.

Many authors have conducted studies on the role of BSC on both organisational and managerial performance. Using these multiple performance measurement systems (BSC) lead to the enhancement of organisational performance (literature) and managerial performance (literature). BSC led to the improvement of organisational performance because it helps an organisation to integrate all levels of an organisation to assess the structural vision and mission.

Further, all levels of organisation havethe same role to support organisationalstrategy by breaking-down strategies into the lowest units. With this integration, a company is more easily monitored, to detect and continue improvement to strive for the organisational vision and goals.

However, apart from these advantages, BSC may have some disadvantages. For example, Wong-On-Wing, Guo, Li, and Yang (2007) showed that BSC cannot reduce bias and create a conflict between superior and subordinates. In order to solve the drawbacks, Elzinga, Albronda&Kluijtmans(2008) suggested that BSC should accommodate the behavioural aspects in operating PMS. Hence, if the organisation can fulfil this requirement, employees will have increased motivation for their targets to support organisational goals (van Veen-Dirks, 2009). Another criticism was expressed by Jazayeri and Scapens(2008) which argued that Kaplan and Norton emphasize a causal relationship between financial and nonfinancial indicators, which nonfinancial performance measures in the balance scorecard can be used to predict financial performance, in contrast they stated that the causal relationship as problematic.

With increased numbers of researchers trying to see the implementation of performance measurement techniques in the field particularlyconcerning BSC, there will be greater understanding of benefits and weaknesses. In contrast, researchers are less concerned with examining the relationship between performance measurement, strategy and information technology used by companies with organisational performance (Hyvönen, 2007). No matter how well the performance measurement technique and strategy, if not fitted with the information technology used, it would be useless for overall organisational performance.

**Conclusion**

Due to the rapidly changing markets and the ways of measuring the performance of organisations, more aspects of the business must be taken into account to determine how well an organisation is actually performing. The old ways of measuring organisational performance based on accounting and financial measures today will simply not give an accurate indication of how positively or negatively an organisation is performing. Therefore determining an organisation's performances based on purely financial calculations are insufficient and such measures do not consider the strategic risk involved and the non-financial measures which directly affect the financial performance. Organisations nowadays use more contemporary tools such as Balanced Scorecard to include all measures financials and non-financials in order to evaluate their organisational performance.

Companies should avoid using measures developed by others as the choice must acknowledge factors including corporate strategy, objectives and the company's competitive environment. But it is a dynamic process and as the company strategies and competitiveness evolve it will need to continually re-assess and update the measures.

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