

Chapter 7

Key Performance Indicators: Advances in their Development and Evaluation

Jeff Patrick
*Australian Institute of Health Service Management,
Faculty of Business, University of Tasmania*

Michael LeBoeuf (1986) famously said "what gets rewarded gets done" - a profound maxim that has been recaptured by variants like "we do what we measure", "what we measure gets done", and "we reward what we measure". The performance benefits that flow from clarity around what gets rewarded is nowhere better underpinned than by the now classic "management by objective" theory (Drucker, 1986). If people know with absolute clarity what is expected of them, then that is what they tend to produce. If what we measure and therefore reward is tangential to, or a distortion of the purpose of the organisations we work in, then so are our efforts. No matter how confused or erroneous the measures of performance might be, we try to work toward them because that is what is rewarded.

Today the pervasive concept in performance measurement is the idea of a Key Performance Indicator (KPI). While the origin of the concept in 1960s United States is unclear, Marcel van Assen and his colleagues (2009) best capture its common use by defining it as "a metric used to help an organisation define and measure progress toward an organisational goal". Other similar concepts exist like Key Result Indicator (KRI, Parmenter, 2010) and Critical Success Factor (CSF, Daniel, 1961) . The former being a measurable end outcome, and the latter being an unmeasurable strategic component that is necessary for an organisation or project to achieve its mission. Some authors (e.g. Parmenter, 2010) have also drawn criteria for evaluating the quality of KPIs, but have been criticised for being less than comprehensive in their criteria.

The fast changing needs and uncertainties of the environment require organisations to keep a close eye on understanding which processes matter the most. This understanding is essential to reduce the complexities of the external environment. These processes may pertain to finance, marketing, production, operations, human resources, or other business functions. At the same time, it becomes equally important for organisations to measure their performance on regular intervals. Performance measurement is, therefore, an integral organisational function for all types of organisations whether they are government departments, small businesses, multinational enterprises, or not for profit charities. These performance measures are reviewed by the management on a periodic basis to know where the business stands in terms of achievement of goals and targets. Performance measurement helps businesses align their day-to-day activities to their strategy. Key Performance Indicators (KPI) provides a popular and useful method of measuring the performance of an organisation by focusing on the key factors that contribute towards the output of the organisation. KPIs are measured and evaluated over time to compare with past performance, industry benchmarks, target, or acceptable norms (Guy & Chris, 2004). It is a widely accepted organisational fact that KPIs provide critical information to managers by monitoring key performance areas of a business to enhance profitability and long-term success. They also provide key information to the decision makers to make strategic moves for sustainable business strategies. KPIs are widely used in organisations, yet they are often ignored, distort organisational functioning in unintended ways, conflict with one another, or otherwise poorly selected or abused such that organisational functioning is either misrepresented or adversely effected. This is why many organisations fail to achieve their targets and meet their strategic goals because they get caught up in wrong measures which are inappropriately thought of as key performance indicators. Only a small number of organisations truly identify and monitor their KPIs. This chapter explains, discusses, and critically evaluates how KPIs are abused within organisations leading to failures or underachievement of strategic goals.

Performance Management

Performance Management comprises of various management processes aimed at managing and monitoring the performance. CIPD defines performance management as “a holistic process bringing together many of the elements that make up the successful practice of people management including, in particular, learning and development” (CIPD, 2012). Another definition given by Armstrong and Baron (2004) explain performance management as “a process which contributes to the effective management of individuals and teams in order to achieve high levels of organisational performance. As such, it establishes shared understanding about what is to be achieved and an approach to leading and developing people which will ensure that it is achieved (p.2).”

Both these definitions imply that performance management is a strategic process needed for viability and success of the business. Performance management measures can vary from business to business, and should be integrated into the organisational strategy by linking various aspects of business, people, and teams. Performance management, according to Haines & St Onges (2012), provides a tool to the management to manage people as well as organisational processes. Although performance management largely focuses on management of people, it can be loosely linked to the concept of Key Performance Indicators.

Performance measurement is essential for three reasons namely learning and improving; reporting the performance figures to external and internal audience and to demonstrate compliance; and controlling and monitoring the employees and people working within the organisation (Eckerson, 2009). Marr (2010) argues that learning and improving is the most important outcome that organisations achieve from performance measurement. Reporting is essential because it is required by the law, while monitoring and controlling is essential because it is one of the most challenging tasks of an organisation.

Key Performance Indicators

Organisations have always been looking for tools and measures that can steer their organisation towards the achievement of goals. Such a tool is expected to measure the performance of the business against the set performance targets of the management (Harvey, 2005). Therefore, performance indicator tool should first understand the core objectives of the business and its critical success factors. Furthermore, this tool should do something more than just identifying the key business areas to focus upon. Over the years, efforts have been put to formulate a standardized business tool that could serve the purpose of identifying the core areas where business should focus to achieve the desired outcomes, and how to improve those areas. Business Intelligence literature came up with the notion of benchmarking as the tool to indicate key areas of performance. With the evolution of business intelligence literature, a new name was given to the benchmarking tool. Thus, the latest business tool for bench marking the performance is branded as Key Performance Indicators. KPIs have become more popular in the organisational context because they overcome the subjectivity in techniques used during the bench marking process.

Parmenter (2010) explains that there are four major types of performance measures used within an organisation. These include Key Result Indicators (KRIs) which tell how well an organisation has done with respect to a critical success factor; Result Indicators (RIs) which represent what an organisation has achieved; Performance indicators (PIs) which tell an organisation what to do; and Key Performance Indicators (KPIs) which tell an organisation what to do to dramatically increase the organisational performance as a whole.

Parmenter (2010) believes that most of the performance measures used within an organisation is a mix of these four types of performance measurement tools. An even better way to look at these performance measures distinctively in terms of their importance and role as through an onion analogy. The outside skin of an onion represents how it has been treated from the harvest till it reaches the supermarket, and thus represents a key result indicator. As the onion is peeled down, the inner layers reveal more information regarding the performance and the results. The inner most part of the onion, or the central core represents the key performance indicators. These indicators, therefore, lie at the core of the business strategy.

Key Performance Indicators can be more generally defined as “a set of measures which focus on those aspects of organisational performance that are most critical for present and future success of the business” (Parmenter, 2010; p.4). Marr (2012) defines KPIs as “measures that provide managers with the most important performance information to enable them or their stakeholders to understand the performance level of the organisation”. KPIs, therefore, help organisations measure how well they are performing in relation to the strategic objectives and goals. Sondalini (2006) asserts that KPIs can be used in difficult to measure organisational areas as well, which make them more effective.

KRIs and KPIs

Organisations tend to mix KPIs with KRIs that leads to faulty appraisal of organisational performance. Key Results Indicator (KRI) tell the organisation if the organisation is working in the right direction, however, does not indicate what needs to be done to improve the results and work in the correct direction. Another difference between KRIs and KPIs is that they are not focused on day to day activities; rather, require periodic review as they are result focused (Wholey, 2001).

Characteristics of Key Performance Indicators

Morris (2010) says that KPIs are predictive in nature because they can foretell the future direction of the business by focusing on the key areas of business. This predictive nature of the KPIs helps businesses succeed in long term through frequent monitoring and measuring (Harvey, 2005). Therefore, effective KPIs must be aligned with the strategic goals of the organisation, and should be quantifiable to make sure that they can be translated into day to day activities of the business. Morris (2010) defines three crucial ingredients of KPIs as:

- Key- means that KPIs should not include every other measure of performance, rather than those factors which are crucial for long term success and critical targets of the business.
- Performance- means that KPIs should be easily quantified, monitored, reported, and influenced by specific organisational actions as well as behaviours.
- Indicators- refers to the fact that KPIs should provide essential information for future performance of the business.

On the other hand, Key Performance Indicators are not obtained from the results; rather lie deep down in the processes of the organisation. Some of the primary characteristics of KPIs listed below are delineated by Paramenter (2012).

- They are non -financial measures and cannot be expressed in currency denominations. This is because of the fact that financial measures depict the result indicators, rather than performance indicators.
- They are measured frequently to keep an eye on day-to-day activities, as opposed to periodic review carried out for performance management tools. KPIs are key to the business performance, and therefore need regular monitoring.
- They are strategic in nature as they can be directly linked to the CEO and the senior management. This means that KPIs help direct the strategy in the right direction by involving senior management in day-to-day business activities.
- These indicators can be linked down to an individual, a team, or a group. That is to say, KPIs can be linked to individual processes, rather than a group of activities.
- KPIs affect the core objectives of the organisation in a positive way, specifically the Critical Success Factors.
- They are usually reported by indicating the specific activity, person or team responsible, as well as past performance to indicate how and what needs to be done.

Objectives of Key Performance Indicators

KPIs help an organisation learn and improve by identifying what activities are needed in day-to-day activities. The basic idea behind this is to empower and equip employees with adequate knowledge and information about the business processes so that they may make better and informed business decisions. In such a situation, KPIs act as an efficient internal evidence tool that can help management make informed decisions, in the face of strategic challenges (Feller, 2002). Following the KPIs effectively, an organisation continuously learn and improve.

Another aspect of KPIs is that they provide quantifiable information regarding the performance of the organisation to internal and external stakeholders (Bauer, 2004). Similarly, KPIs help businesses in complying with reporting regulations and compliance needs. These reporting needs may include disclosure of financial statements that are required by law, or reports on environmental factors and sustainability voluntarily to inform the important stakeholders of the business about the organisational activities (Hoque, 2004). During reporting, KPIs can inform the stakeholders if the business is going in the right direction or not.

KPIs are also used by organisations as a tool to monitor and control employees. Since it has been established earlier that KPIs can be linked directly to an individual or a group of individuals, they help in gauging how well an individual performs with respect to achieving targets and goals. Many a times, KPIs are used as a top down command approach by organisations to influence and control people's behaviour. KPIs are used to set goals and rules within an organisation, and actively gauge the performance. KPIs eliminate the unwanted variance in the performance of employees by linking rewards and recognition with performance.

Understanding the objectives of KPIs raise the question as to which organisations use the KPIs correctly. Marr (2010) believes that organisations which clearly understand those factors which are needed for long term success of the business; separate internal and external reporting data to avoid confusion; and develop a culture which fosters empowerment are best practice organisations for KPIs.

Understanding the KPIs require organisations to understand that despite the fact that we perceive KPIs as quantifications and different numbers, the primary purpose is to provide the organisation with an objective, rigorous, and uniform reality. This is where many organisations make mistakes. Counting and measuring is integral to the organisation, but counting every quantifiable measure does not constitute KPIs. This is why the measurements go beyond the reporting of information in quantifiable way, but also includes words and pictures that can help organisation know about its progress. This measurement involves a social activity (Marrs, 2010), where employees from the organisation provide useful input towards betterment of the business. Therefore, KPIs include both quantitative and qualitative performance measures.

Discovering KPIs

The most important question a firm should ask itself is that how large an impact will be made by a performance indicator. For example, if an organisation sets its goal to generate more repeat customers, first a distinction will be needed between the new and the old customers. Similarly, simply saying that the goal of the organisation is to be the most popular company, will not be effective unless and until it has been broken down to quantifiable components to measure the popularity of the business against other competitor businesses. Thus, it makes it essential that KPIs are identified and defined as a handful of central performance indicators relevant to that particular organisation. This equips the organisation with the ability to focus specifically on the factors that are the most crucial for the organisational success. KPIs are very concrete and lead to setting of targets. For example, KPIs of Dell Inc. are Ship to Target Rate, Initial Incident Rate, and First Time Fix Rate.

Effective Use and Abuse of KPIs- A Debate

Mintzberg (1994) writes that performance measurement systems have failed in public and private sector alike because these measurement based approaches do not improve performance, but hinder the development and implementation of strategies. Perrin (1998) in his famous article points out eight inherent flaws in the use of performance indicator. His critique resulted in a debate whereby Bernstein (1999) and Winston (1999) argued that the flaws present in the Performance Indicators are not inherent to the indicators themselves, but relate to the ineffective implementation and execution of performance measures. In this section, the arguments raised by Perrin (1998) and the point-by-point rebuttal by Bernstein (1999) and Winston (1999) is discussed.

The flaws are discussed with respect to Performance Indicators rather than the KPIs, but can be extended to include KPIs as well. These are:

Varying and Contrasting Interpretations of the Same Concepts and Terms

According to Perrin (1998), performance indicators can be used, described, recorded, and interpreted in a number of ways. This inherent nature of KPIs makes it difficult for organisations to understand and identify the KPIs. Bernstein (1999) disagrees with this argument saying that definitional distinctions can be found about different terms and can reduce this problem generally associated with PIs.

2. Goal Displacement

Perrin (1998) asserts that when performance indicators become the objectives of the business, they divert the focus away from the goals resulting in goal displacement. This goal displacement encourages business to record and report numbers without actually focusing on the actual outcomes. This point has also been made by Davies (1997) who argues that KPIs result in more time being spent on generating reports and information that is required by compliance needs and accountability, which leads to lesser focus being paid to the actual meaning of the goals. This corruption of KPIs is inevitable in organisations when KPIs put emphasis on generating numbers.

3. Use of Irrelevant Measures

Another fault, as identified by Perrin (1998) is that performance indicators do not many a times reflect what is actually happening in the organisation. In other words, KPIs focus on all key business areas which may or may not be easily quantifiable, meaningless information is generated which may be accurate but not useful. Perrin (1998) further argues that these performance indicators are inconsistent with the complex social phenomenon. Hence, KPIs can lead to creating confusion with the underlying reality. This, according to Bernstein (1999) is not true because goal displacement results from inappropriate use of appropriate measures. Therefore, organisations that focus on systematic review of desired outcomes can eliminate this problem.

4. Cost Savings versus Cost Shifting

One of the primary objectives of implementing KPIs in an organisation is to cut down costs and adopt more efficient business processes and practices. KPIs are considered an important way of cost saving by businesses; however, in reality they do not save costs but shift them. Since the outcomes of KPIs are generally looked at in isolation, they do not clearly depict the overall cost affect that KPIs result in (Perrin, 1998). He further argues that PIs (or KPIs in this context) are short term in nature because they focus on short-term benefits, but increase costs over the long term by shifting them elsewhere. Bernstein (1999) contradicts Perrin's idea by saying that PIs do not shift the costs, but in fact, the outcomes of the measures take time into fruition that leads to this faulty belief. KPIs do in fact shift costs, but that happens because of changes in business processes.

5. Disguising Critical Sub Group Differences by Misleading Aggregate Indicators

KPIs sometimes tend to disguise the subgroup differences when reporting the results by presenting misleading aggregate results (Perrin, 1998). Therefore, a success might disguise critical sub factors due to aggregate figures. Bernstein (1999) counter argues that detailed analysis of sub groups is needed in unison with the KPIs to ensure that distinctions are made between sub groups. Therefore, KPIs are not inherently misleading, but their ineffective use can make them so.

6. Limitations of Objective Based Approaches to Evaluation

Objectives based approaches of performance measurement are often criticized by practitioners and academics alike, with Perrin (1998) identifying three major limitations. First, KPIs do not guarantee efficient distinction between ambitiousness of the objective and the actual results obtained. Secondly, objectives based approaches like KPIs fail to take into account the uncontrolled and unintended effects which may be both negative and positive, thus making the control mechanism weaker (Perrin, 1998). Lastly, KPIs tend to remain constant for a period, while the business environment does not. This reduces the effectiveness of KPIs as they become responsive rather than predictive (Perrin, 1998).

Bernstein (1999) and newcomer (1997) argue that performance indicators are not intended to tell the why and how of the performance, but answer the 'what' question. Once the KPIs tell the managers about the performance, they seek to find out answers about the why and how components. Therefore, Perrin's (1998) argument can be overcome by strengthening the legitimacy of performance measures.

7. Useless for Decision Making and Resource Allocation

It is an established business fact that the purpose of performance measurements is to allow managers to make informed decisions (Hatry, 1997); however, KPIs generally incorrectly assume causality that leads to faulty interpretations. This, therefore, renders the decision-making based on KPIs useless. However, Bernstein (1999) argues that it's not the KPIs that infer causality, but the model chosen to analyse outcomes of KPIs does. Performance measures, on the other hand, help in defending decisions and allocating resources if done in a systematic way.

8. Less Focus on Outcome

Finally, Perrin (1998) makes the point that performance measurement systems lead to less, rather than more, focus on innovation, outcomes, and improvements. KPIs emphasize on top down approach for control that is inconsistent with the recent decentralized organisational structures. This argument has been strongly contradicted by Bernstein (1999) by saying that PIs are outcome oriented, and can be developed at all organisational levels, and not just the strategic level. Appropriately, used measures can ensure that outcome related processes are adopted.

Adverse Results from Performance Measures

Parmenter (2012) identifies that organisations usually fail to identify the specific performance measures, because of which, they are cobbled together in an ineffective manner without the correct knowledge of critical success factors of the business. KPIs ensure that performance is measured within the organisation in a consultative (by involving management at all levels) manner which fosters partnerships, empowerment, and behavioural alignment of the employees working within it. A handful of numbers monitored over time might be useful for the success of the business, but the primary task is to identify the key indicators that will give the insight to the most important and fundamental components of the business. Morris (2010) writes that many of the organisations do not get their KPIs right the very first time, but when they do, they can drastically transform the whole business.

Marr (2010) identifies that most of the time KPIs are so loosely defined that they are overused and confuse the businesses about what to do. Many businesses consider any piece of quantifiable data as a tool to indicate business performance. Rather than clearly identifying the key and core components of success, organisations are caught up in ICE approach (Marr, 2010).

1. Identify anything that is easily quantifiable and measurable within a business
2. Collect the relevant data and report it to the management without considering if the data relates to the critical success factors of the business or not
3. End up confused with all the data that does not reveal what exactly needs to be done to improve the long-term performance of the business.

Since KPIs are often used as internal control tool, research indicates that this approach can be detrimental for the organisation many a times. By linking the rewards and recognition with performance, employees tend to focus on delivering the measures rather than the performance, i.e., they do hit the target, but miss the point. Organisations fail to understand that KPIs should be directly linked to the Critical Success Factors. Critical Success Factors are those specific business areas, limited in number, whose effective management can ensure competitive performance of the business (Rockhart, 1981). Most of the times, management fails to understand the link between the KPIs and the CSFs. They both are two distinct factors that are used to gauge the performance of a business. CSFs are however connected to the KPIs in a way that identification of CSFs is crucial for identification of KPIs. KPIs, therefore, measure what a business needs to do to achieve the critical success factors. An important distinction between the two is that KPIs are distinct and unique in nature in a way that they can be linked to a single performance measure, while CSFs can be replicated for various different KPIs. Many businesses are so confused in their approach that they fail to understand this linkage, which renders their KPIs useless, as they are not linked correctly with their critically important success factors.

One of the criticisms of KPIs is that they can consume so much of the management's time that results in lesser attention to other important business areas. Management literature focuses so much on the 'key' importance of KPIs that they tend to become the sole focus of management's attention. This might be an efficient way to monitor process and performance in the short run, however, can be effect an organisation negatively in the end. This is because focusing on a single measure of success for too long can distort the way an organisation perceives its environment and processes. Therefore, many theorists believe that KPIs are a good tool for measuring performance as long as it is used in unison with other organisational tools. This gives a comprehensive view of the organisational processes and does not push organisation towards a single distorted view of things.

Still some believe that KPIs are often difficult to identify and apply which makes them ineffective in organisations. Although KPIs are known to be simple, widely understood, easily reported, and meaningful, but the problems in applying KPIs arise when they are not aligned with the corporate strategy. In the end, these KPIs therefore become distractions for business processes and become counterproductive. They start affecting business detrimentally, which often goes unnoticed by the managers.

KPIs are often abused within organisations when they are used for wrong purposes. Since KPIs represent quantifiable data on business processes, organisations tend to gather and report all the data resulting in confusion. At the same time, the basic idea of using KPIs is lost when businesses fail to identify why they are using KPIs as a performance management tool. KPIs are effective when they are used primarily for learning purposes. That is to say, KPIs provide necessary information to managers that assist them in moving in the right direction. This, in effect, is the same principle used by ants when they leave trails behind them to help navigate other ants towards the food source. Similarly, KPIs result should leave a trail for each member within the organisation through effective communication, thus providing a basis for decision-making, future performance, and improvements in current performance.

Another misuse of KPIs occurs when managers link it to the incentives of the employees. Although KPIs provide an effective tool to gauge the performance of individual employees, it is not in any way a reward and punishment tool. If it is linked to the rewards and punishment strategy, the adverse effects of KPIs increase. Employees tend to focus on delivering the measures, without actually focusing on understanding them. Outcomes of this can be seen in terms of lack of coordination and cooperation, dampened employee morale, and gaming of results. Therefore, the use of KPIs as an incentive tool should not become an organisational norm.

Improving the Effectiveness of KPIs

KPIs are used within organisations to measure behaviours and actions that are less measurable directly. KPIs are observable measures that help in measuring and assessing organisation outcomes. Despite these criticisms that many academics have pointed out, the potential abuse of KPIs, and the distortions in the organisational processes lead to a number of recommendations for organisational success. Although these recommendations are not new to the field of organisational performance measurement, these provide an objective method of application and implementation of KPIs effectively.

Managers need to develop meaningful KPI metrics like Balanced Score Cards that can help understand the core processes of the organisation. In the absence of such a performance metrics, it becomes difficult for managers to evaluate the effectiveness of employees, processes, and practices. KPIs provide the first step towards improving the overall organisational performance. The argument that KPIs can sometimes derail the organisations from their actual strategic path is only true as long as organisations do not understand the true essence of KPIs.

KPIs are often viewed as a rigorous exercise of generating numbers for managers that can be then translated to measure performance (Marr, 2010). However, KPIs in reality provide much more than basic counting and include rigorous reports to predict future growth areas and prospects. KPIs also provide a mechanism to measure anything within organisation. This is one of the major criticisms of KPIs that they tend to create ambiguities by trying to measure difficult to measure areas. This dynamic nature of KPIs has enabled different industries and organisations to create their very own set of KPIs that are most important to them.

Some of the recommendations based on industry practices and recent researches are presented below:

- Identify the critical success factors of the organisation that can be measured through the development of KPIs. Once this is done, an internal sustainability measurement plan should be developed which is consistent with the company's policies and strategies (Bean and Geraghty, 2003).
- Understand the KPIs are effective for planning and monitoring, rather than being used as an evaluation tool (Perrin, 1998). KPIs therefore provide an tool for understanding what the organisation has achieved, but other approaches must be used to measure the performance in detail.
- Recognise the fact that KPIs do not come with their sets of limitations and weaknesses that can be reduced by effectively using approaches like Balanced Score Card and other measurement techniques to ensure that data is gathered and evaluated from different sources.
- In order to reduce the misuse of KPIs, the organisation must identify the users of information generated by the KPIs. The organisation should also understand the limitations of that data, how the data will be used, and for what purposes.
- In order to keep the KPIs well aligned with the strategy, as well as up to date concerning the changing organisational needs and external factors, they should be reviewed periodically for their effectiveness to the organisation. When organisation environment cannot remain static, the KPIs can neither.
- Use different tests to measure the effectiveness of the indicators. It is not necessary that organisations get the KPIs right the first time, but ay need time and repeated failures to come up with the correct KPIs.

Conclusion

Every organisation aims to keep an eye on how it is performing, and how the actions and performance is contributing towards attainment of strategic goals and targets. KPIs provide one of the most popular approaches to do so. By linking every key performance factor to a critical success factor, KPI approach ascertains that the future success of the organisation is ensured. The criticisms raised by management literature have gained much acceptance because of the fact that organisations fail to understand the real concept of KPI. Mostly they derive the KPIs from the outputs, rather than from the core organisational processes. Thus, KPIs might be blamed for distorting organisational functions, decision-making, and long-term success; but the real culprit is the way organisations view KPIs, identify them, and apply them for their organisation success. This means that organisations require better understanding of KPIs, the objectives of KPIs, and what a specific KPI should measure. Faulty decisions are made because organisations use wrong data or right data in the wrong way. Furthermore, KPIs alone cannot guarantee long-term organisational success. They are one of the important components of organisational planning and monitoring, rather than the only component. Lastly, every performance management tool and process has drawbacks and weaknesses; therefore, it is essential to recognise that KPIs also have some inherent weaknesses. These weaknesses can be overcome by adopting a strategic approach and using other performance tools that can work in liaison with KPIs to cover those areas of the organisation where KPIs underperform.

References

- Armstrong, M. & Baron, A. (2004). *Managing performance: Performance management in action*. London: Chartered Institute Of Personnel and Development.
- BARC. (2009). *Performance management – Current challenges and future directions*. Retrieved 21 January 2013, from http://www.ap-institute.com/Media/14133/Pm_Processes.Pdf
- Bauer, K. (2005). *KPIs: Avoiding the threshold McGuffins*. *DM Review*, 15(4), 1-4.
- Bean, C. & Geraghty, K. (2003). *Navigating the road to KPI success*. *Focus*, 5(6), 37-41
- Bernstein, D. (1999). *Comments on Perrin's effective use and misuse of performance measurement*. *American Journal of Evaluation*, 20(1), 85-93.
- CIPD. (2012). *Performance management: An overview*. Retrieved 21 January 2013, from <http://www.cipd.co.uk/Hr-Resources/Factsheets/Performance-Management-Overview.aspx>

- Daniel, D. (1961). *Management Information Crisis*. *Harvard Business Review* (Sept-Oct).
- Drucker, P. (1986). *Managing for results*. Harper & Row: New York.
- Eckerson, W. W. (2009). *Performance management strategies*. *Business Intelligence Journal*, 14(1), 24-27.
- Feller, I. (2002). *Performance measurement redux*. *American Journal of Evaluation*, 23(4), 435-452.
- Guy, C., & Chris, J. (2004). *Key performance indicators for the implementation of social health insurance*. *Applied Health Economics & Health Policy*, 4(1), 15-22.
- Haines, V. Y. & St-Onge, S. (2012). *Performance management effectiveness: Practices or context?* *International Journal of Human Resource Management*, 23(6), pp.1158-1175.
- Harvey, J. (2005). *KPIs – The broader strategic context*. *Credit Control*, 26(4), 65-66.
- Hoque, Z. (2004). *A contingency model of the association between strategy, environmental uncertainty and performance measurement: Impact on organisational performance*. *International Business Review*, 13(4), 485-502.
- LeBoeuf, M. (1986). *GMP: The greatest management principle in the world*. Berkley Books: Los Angeles. p. 22.
- Marr, B. (2012). *Key Performance Indicators (KPI): The 75 measures every manager needs to know*. Financial Times Publishing.
- Morris, S. (2010). *Making KPIs work*. *Oilweek (Calgary)*, 61(11), 59
- Parmenter, D. (2010). *Key performance indicators: Developing, implementing, and using winning KPIs*. John Wiley & Sons: Hoboken.
- Perrin, B. (1998). *Effective use and misuse of performance measurement*. *American Journal of Evaluation*, 19(3), 367-379.
- Van Assen, M., van den Berg, G. & Pietersma, P. (2009). *Key management models*. Prentice Hall Financial Times: Harlow. p. 37.
- Wholey, J. (2001). *Managing for results: Roles for evaluators in a new management era*. *American Journal of Evaluation*, 22(3), 343-347
- Winston, J. (1999). *Performance indicators-promises unmet: A response to Perrin*. *American Journal of Evaluation*, 20(1), 95-99.

Appendix: Criteria for Judging the Quality of KPIs

- a) Measure outputs rather than inputs wherever possible.
- b) Measure quality not just quantity.
- c) Don't confuse activity with productivity.
- d) Capture the core purpose/s of the organisation.
- e) Do not contradict each other. If achieving one performance indicator means sacrificing another, that puts staff in an unwinnable and frustrating situation.
- f) Use continuous measures of performance rather than binary (e.g. achieved / not achieved).
- g) Be as objective as possible (not subjective).
- h) Be something that staff actually has control over, and can positively effect.
- i) Not easily distorted by organisational units wanting to be seen as performing better than they are.
- j) Are not expressed as currency – Peter Drucker said "performance will have to be defined non-financially so as to be meaningful to knowledge workers and to generate commitment from them".
- k) Use ratios rather than unitary indicators.
- l) Are measured frequently.
- m) Are tied (or can be broken down) to identifiable work units/teams.
- n) Are transparent (internally within the organisation, and externally especially so in a public institution/organisation, but even in private organisations where disclosure is a plank in investor education.)
- o) Are as current as possible – ideally no lag.