

Generating & Selecting KPI Sets

A practical guide to the generation and selection of good Key Performance Indicators for managing business processes, including a large selection of candidate KPIs for common processes.

Content includes generation of KPIs, general characteristics, evaluation of KPIs, selection of sets, rolling out a KPI system.

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Introduction

This book presents an approach to generating and selecting Key Performance Indicator (KPI) sets suitable for managing business processes. The “set” part of the process recognizes that a typical business process can rarely be appropriately managed by a single KPI; rather a balanced set of KPIs needs to be carefully selected to ensure appropriate



long-term management of the business process. The approach to selection of a balanced set owes a considerable debt to work done in the 1990's by Kaplan and Norton, in particular their work on the “Balanced Scorecard”.

In the course of the synthesis, we will build a set of simple tools for generating and selecting a KPI set.

A Word About Words

Describing KPIs, the environment in which they're established and the things that they seek to achieve is impossible without using some common management terms to anchor the discussion. Unfortunately, some of these terms have been confused and misused; the following table attempts to clarify what is meant by terms in this book. There are doubtless more compelling definitions than those given here, but these only aim to clarify the use of these terms in this book.

Table: Semantic Use in this Document

TERM USED IN THIS DOCUMENT	ALTERNATES (OF VARIABLE QUALITY)	INTENDED MEANING IN THIS DOCUMENT
Vision	Mission	The stated corporate future position of the organisation.
Strategy	Tactics (!)	The means by which the organisation will attempt to move from its current state to its future state, as described in the Vision.
Goals	Objectives, Key Result Areas (KRAs), Targets	Those targets which characterise the future organisation as described by the Vision, and thus must be achieved in order to reach that state of enlightenment.
Critical Success Factors	CSFs	Those factors which must be present or absent for the organisation to achieve its goals; enabling factors rather than targets <i>per se</i> .
Key Performance Indicators	Key Result Areas (KRAs), Results	Quantifiable metrics which reflect the performance of processes toward the achievement of the organisation's goals.
Performance Plans	Tactics, Key Performance Plans, Initiatives, Action Plans	Intended process improvements in support of improving the KPI outcomes.

What is Meant by and Measured by a KPI?

A KPI defines itself to a large extent by its name.

Firstly, it is a performance indicator, i.e. the performance of the process it is measuring should be clearly indicated by the KPI. This should clarify that the purpose of a KPI is not, for example, to measure the risk of a process, nor its age, nor its length, but its performance. A simple KPI which measures performance for a process called "**Handle**



Enquiries" might be "**%age of enquiries responded to within 2 working days**". By measuring the actual effective characteristics of the execution of the process, this KPI focuses on performance. An example of a less-well constructed KPI might be "**Number of enquiries without return address registered**". You will note that the provision of a return address is not part of the process "**Handle Enquiries**"; it might be part of a preceding process called, say, "**Capture Enquiry Data**". Thus this KPI measures something which is not a performance characteristic of the process "**Handle Enquiries**", so is less suitable as a KPI for that process.

Secondly, a KPI should be key, not just any casual measure of the process; this can be taken as the KPI being closely correlated with the objectives of the process being measured. For our example process, appropriate KPIs should concentrate on "Enquiries" and their "Handling"; a candidate KPI such as "**%age of Enquiries Relating to Policy**" may not have an adequate focus on either the "Enquiries" aspect or the "Handling" aspect, but may in fact be a key indicator for some other preceding process, such as "**Communicate Policy**".

The other aspect of a KPI not contained within its name is that it measures a continuous or discrete but repeated process. Typical continuous processes include manufacture (toothpaste production, vehicle manufacture), service where the dimensions are large (credit management for large public utilities, help desk for large IT installations). Typical discrete, repetitive processes include service (PC installation, car sales and medical services). Sometimes services which look to be custom or once-off when considered at an individual level (your neighbour's knee surgery operation) can also be considered as almost continuous when considered at a sufficiently large level of granularity (knee surgery in the U.S.A. in the 2005).

Where the intention is to measure once-off performance of a project, or as part of a business plan, a specification, target or target date (or all of these) will suffice; labelling it a KPI is both unnecessary and confusing because the important, defining aspect of repetition of performance over time is absent. Concocting a once-off measure of this sort is vastly easier when compared with selecting good KPIs. Thus, for example, the opening ceremony at the Beijing Olympic Games will either meet its designers specification or not; it will not be repeated sufficiently often to merit the creation of KPIs for its performance. This

ought to be self-evident, but it is common to see, for example, Target Completion Dates or Product Specifications (or both) labelled as KPIs.

As can be seen, there is nothing magic nor arcane about understanding what a KPI is or should do; most of the information necessary is contained in the name.

General Characteristics of KPIs

This section examines some general characteristics of KPIs. It will serve to inform our subsequent choice of "good" KPIs from the set of candidate KPIs initially created.

Clarity, Standardisation of Measurement & Documentation

A good KPI is clearly and widely understood throughout the department, sector or (preferably) organisation; this common, clear understanding is important to maintain focus of effort. It should be clear what the KPI is and, equally, isn't. This common understanding is best achieved by simplicity (first), standardisation of measurement (secondly) and documentation.

One typical credit management organisation includes minimisation of Bad Debt Expense (BDE) as one of its principal goals; most people within this organisation have BDE as one of their department's main KPIs. Unfortunately, the definition of what constitutes BDE is neither widely known nor very standard; own staff costs for dealing with bad debts is not included in the definition, for example.

One result is that substantial, well-meaning effort is expended in trying to improve this KPI, with unpredictable results. To add to the difficulty, one element that **is** defined as being a BDE component is the change in provision for bad debt. This latter can significantly affect BDE on a quarterly basis; it is not unknown for the change in this component in one quarter to be reversed in the next for reasons which, at best, have nothing to do with the performance of the debt management process.

To maximise effectiveness and efficiency in managing processes, KPIs should be commonly understood through the organisation, be measured in accordance with accepted *de jure* or *de facto* standards and be adequately and publicly documented. It is common, when developing a set of KPIs, to identify new KPIs, or better put, KPIs which are not currently in use for that process; care must be taken in making the basis for measurement and definition publicly available¹ and readily referred to.

Nothing especially difficult is required; the following table will suffice as an example:

Table: Definitions & Calculations

KPI NAME	DEFINITION	CALCULATION
Approved change orders per total ECO	Change orders approved by client as percentage of total requested engineer change orders (ECO)	$100 * [\text{approved change orders}] / [\text{requested change order}]$
Churn	Loss of customers per year as a percentage of total customers	$100 * [\text{lost customers}] / [\text{total customers}]$

¹ That is, at least within the organisation.

Bad Debt Expense (BDE)	Write-offs occur “nn” days after final billing with no payment plus manual write-offs less recoveries made against previously written-off amounts including sale of bad debt but excluding effect of expenses relating to sale of bad debt plus all agency fees including fees unrelated to recoveries plus change in provision for bad debt, calculated at 6% of mass market debt plus individual assessment for major accounts. In-house salaries and expenses excluded.	[bad debt write off] – [recoveries + sale of bad debt]+ [agency fees] + [Δ provision for bad debt]
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Observant readers will have noticed that the third example is included to demonstrate how not to do it...both the Definition and the Calculation (simplified here) do not lend themselves to clarity or commonality of understanding. The calculation of BDE follows no *de jure* or *de facto* standard, but is rather the way in which the measure has developed over time. Suitable definitions, in particular, should not require the attention of a lawyer or accountant to unravel; they should be readily comprehended by line staff.

Correlation with Process Performance

It appears to be Motherhood to state that a KPI should measure the process to which it is attached, but in practice one sees KPIs that do not measure the results of a process. A KPI should:

- directly measure the results of a process
- be directly affected by changes in that process and
- not be directly affected by factors outside of that process.

Consider an HR process that manages recruitment of staff with a KPI of “Staff Recruitment Cost Percentage”; the definition is “Staff recruitment cost as a percentage of total annual staff cost” and the calculation is “100 * [staff recruitment cost per month] / [total staff cost per annum]”.



This looks reasonable at first glance; there is nothing wrong with dividing a monthly cost by an annual reference base, even last year’s annual reference base. The fatal flaw is, however, that the staff recruitment cost is only partially dependent on the efficiency with which the process is performed; it can be highly dependent on factors external to the process such

as the rate of staff turnover, retirements, rate of business expansion etc. Consequently, in explaining variations in the KPI, the accountable manager for the process will often be explaining factors outside of the process' and manager's control.

One useful corollary to this is to note that a process' KPI can rarely be the same as an organisational goal; as the achievement of organisational goals usually depends on the performance of multiple processes.

Quantification

A widely-held tenet of the consulting community is that KPIs must be quantified to be of value. There are good reasons for this; for one, it favours the selection of KPIs that directly measure a process. For another, it is a useful way to challenge generalities (e.g. improve, lessen, enhance, big up) and floating comparatives (e.g. best, better, more, less, or even fewer). Consequently, it is generally of value to force the quantification of KPIs and even more so in organisations where the measures of success are **not** quantified and time boxed.

One aspect of quantification that is less positive is that it can lead to an overemphasis on financial and operational aspects of the process at the expense of other aspects of the balanced scorecard, e.g. Customer Orientation, Learning & Growth, Environment & Community and Employee Satisfaction. It is very common to see organisations with process sets whose KPIs are solely financial or operational; they meet the quantifiability test but fail to measure wider aspects of the organisation's performance. The pervasive mistake that is being made here is to believe that only the concrete aspects of performance can be readily quantified whereas the more abstract aspects are difficult to quantify. The truth is that, whilst quantification of the abstract aspects is less familiar and may require more thought for this reason, it is by no means impossible.

To assist in familiarising the quantification of abstract qualities of processes, here are some quantified measures for each of Customer Orientation, Learning & Growth, Environment & Community and Employee Satisfaction.

MEASUREMENT ATTRIBUTE	SAMPLE KPIs
Customer Orientation	"Rate of customer complaints" "Rate of goods return" "Response rate to follow-up"
Learning & Growth	"Error rate" "%age of workgroup multi-skilled" "Training modules completed/quarter"
Environment & Community	"# Positive mentions/month in local news" "# Negative mentions/month in local news" "Paper recycling rate" "Percent of raw materials from recycled sources"
Employee Satisfaction	"Resignation rate" "Staff turnover rate" "Workplace laughter in decibels"

Hence the common insistence on quantification of KPIs is generally healthy as it concentrates attention on measurable performance and does not, as demonstrated, limit their scope to the familiar areas of Financial Performance and Internal Operational Performance. Quantifiable KPIs can be found for other areas with a little more effort and thought; one mechanism for generating candidates is group brainstorming.

A second aspect of quantification that deserves attention is inappropriate mathematical operations on quantified KPIs². A simple example of an inappropriate operation is misunderstanding 20° Fahrenheit as being twice as hot as 10° Fahrenheit, despite the beguiling appearance of the numbers. For a rigorous mathematical definition of the word “hot” we would have to convert the temperature to absolute temperatures and then find that they are only a few percent apart. Even then, the meaning of “hot” remains slippery and depends on context; 373° Kelvin is less than 70% “hotter” than 223° Kelvin, but you wouldn’t want to be standing outside in your underwear in either temperature; nevertheless, both numbers are completely trivial compared with the temperature of the Sun.



Similarly, 200 years may appear to be twice as long as 100 years, but the reality depends on context. When we are discussing the measured age of the Earth, they are trivial differences; when comparing two different estimates for paying of your mortgage or receiving a report, they are equally ludicrous and comparison between the two estimates is pointless. In general, you need to be very sure of your scales, true zero points, units, dimensional compatibility and, most importantly, context before attempting any thing much more trivial than “this month’s index is 5 up from last month’s.”

Responsiveness: Lead, Lag and Stability

Lead, lag and stability are all characteristics of a KPIs responsiveness to changes in the business process’ performance.

Timing of KPIs, relative to achievement of corporate goals, is key in choosing good candidates. Financial results, such as last quarter’s revenue, are typically lagged by 2+ months or, at worst, 4 months³. Annual results, especially fiscal year results, can be much more delayed. These lags are the time difference between the generation of the KPI values and the time at which the performance of the business process which they are measuring was actually executed.

Lagging KPIs are particularly evident when formal accounting measures are used as KPIs, due to the necessity to investigate and reconcile all material discrepancies.

With such lags, the problem arises as to what action might be appropriate to alter the direction of the process performance, when the KPIs are measuring

² The caution is not limited to KPIs; all sorts of pseudo science is performed on inappropriate numbers just because they are numeric.

³ Allowing for 15 – 30 days for reconciliation, production and reporting of quarterly results.

results in the past. A careless correction may be inappropriate when the current performance has already significantly altered from that measured some time ago and may result in overcorrection.

Some KPIs measure current performance of the department. These are generally more useful, as they reflect the current circumstances. A real-life example of such KPIs is the reporting of yesterday's revenue takings – uncorrected, but reflecting what is happening right now. As always, care must be taken not to allow instant results to result in instant reactions which in turn reinforce the original problem.

An example of this problem was made evident when the first automated trading systems were introduced to the New York and London stock exchanges. The first such systems, designed to react to market position, reacted too quickly to very short-term trends; when a stock went down the systems reacted immediately by placing sell orders, resulting in downward pressure on the stock price and, in some conditions, a highly unstable series of death spirals and recoveries⁴. This effect was entirely foreseeable⁵, but entirely unforeseen.

Other KPIs are of the leading type; their measures are predictive of desired results at the next higher level. An example of such a leading indicator is customer satisfaction with the organisation's products and service; this tends to act as a predictor of market share. Sometimes, leading KPIs can lead financial results by a year or more; this is known to be the case because examination of the collapse of several airlines has shown that the indicators of serious financial difficulty were clear well prior to the collapse⁶.

The primary difficulty with leading KPIs is to be sure that they are strongly correlated with the required corporate goals; a degree of modelling and understanding of key business drivers may be necessary. As a corollary of these KPIs leading corporate goals, it must be recognised that a change in process management to correct a negative trend in the department's performance measured by one such KPI will only reflect in the corporate goal sometime later (i.e. at least the lead time of the KPI). The control risk here is that a correction is applied, no result is observed in corporate goals, more correction is applied, nothing happens, something else is tried:- in summary, care should be taken when applying corrections to leading KPIs to measure the system response by reference to the same KPIs, not to their (relatively lagged) affected corporate goals.

As can be seen, the lag or lead of a KPI, relative to its tied corporate goal, is important in ensuring that control mechanisms are well designed and that the relationship to corporate goals is thoroughly understood. To those ends, we suggest making the relationship be made explicit in the final set of KPIs, as per the table, below:

Table: Lead/Lag Relationship Between KPIs and Corporate Goals

KPI	LEAD/LAG TIME (DAYS)	CORPORATE GOAL
KPI-1	-30	Goal-1
KPI-2	60	Goal-1
KPI-3	-30	Goal-2

⁴ For this reason, computer systems are not permitted to report prices except after a 15-minute delay.

⁵ An elementary course in control system theory, for example, would have shown such a result to be highly likely.

⁶ ...not that having foreknowledge of the problem would necessarily have rescued these businesses...

It is not uncommon, when lead/lag times are made explicit like this, to find that the vast majority of indicators have a lag. When this is the case, extra effort should be taken to generate some candidates with either no lag or even a leading relationship, so that the KPIs have a balanced relationship with both historic and recent performance. Managing a process with all lagging KPIs is somewhat akin to steering a ship with a sloppy rudder system.

The other characteristic of KPI responsiveness to be considered is stability. As discussed elsewhere, it is of fundamental importance to closely bind the process' KPIs to the underlying performance of the KPI. When this is correctly done, the KPIs will reflect the stability of the process, which is what we want. If the process is highly responsive to changes in its environment or management, even to the point of instability, we want the KPIs to reflect that, even to the point of instability. What is undesirable, however, is a KPI which is unstable in itself, overreacting to small changes in the process' performance, or appears unstable, reacting to environmental changes outside of the control of the process owner.

One classic way in which this can occur is where the measurement is performed too frequently, taking into consideration the nature of what is being measured. When "**Takings**" (i.e. revenue streams) are measured on a daily basis, there will very often be a marked variation between the measured value directly after a weekend and mid-week, for example. In this case, measuring "**Daily Takings**" leads to an unstable indicator where the instability adds little to our understanding of the process⁷; measuring "**Weekly Takings**" might be a better choice.

Trends Over Time

Understanding the trend over time of each KPI is just as important as measuring KPI results against their threshold values and targets. As well as being a useful indication of progress in process improvement, trends can also serve to highlight unexpected seasonal variation and alert the analyst to external factors influencing change.

Several different influences can create trends in data which can be analysed and separated to enhance understanding of a process' performance.

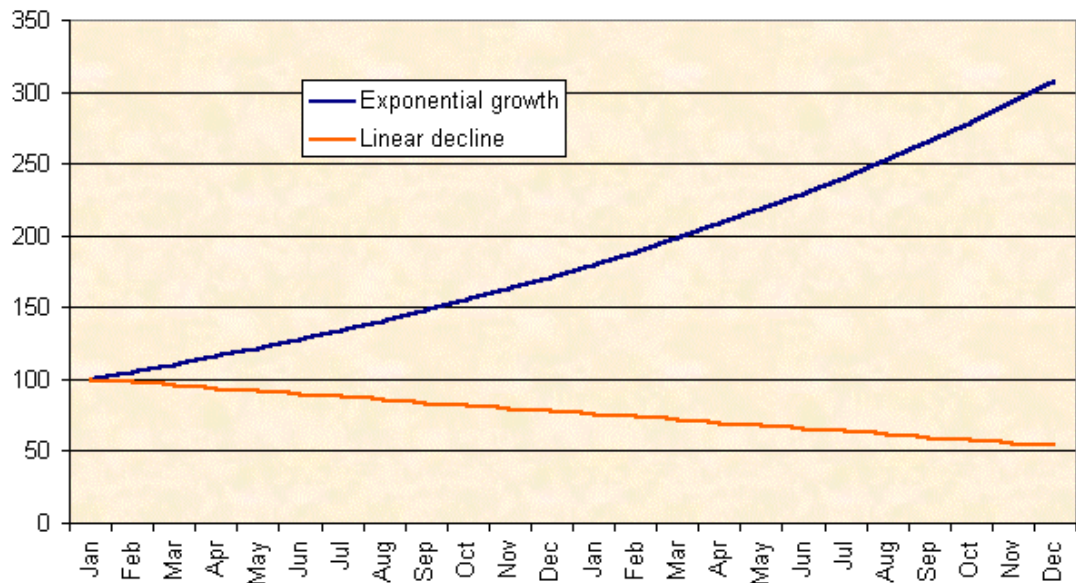
Trends

Underlying trends in KPIs are one of the most important aspects of KPIs; they signify the direction which the process performance is taking. Thus a process which, due to appropriate attention to all aspects of variability, is producing better output results, will usually cause a downward trend in finished product quality rejects. In the longer term, it may also cause a detectable trend in customer complaints (downward) and market share (upward). Many typical processes will also be subject to natural trends. A commodity item sold to the general population will tend to naturally grow its sales with the growth in population without any increase in market share (in countries where there is net population growth).

Typical trends are demonstrated in this graphic:

⁷ You may, of course, want to actively manage the daily takings and reduce their variability or take advantage of it, for example by maximising overnight deposits. At this stage, however, the "Daily Takings" become more of an active management parameter than a KPI.

Trends



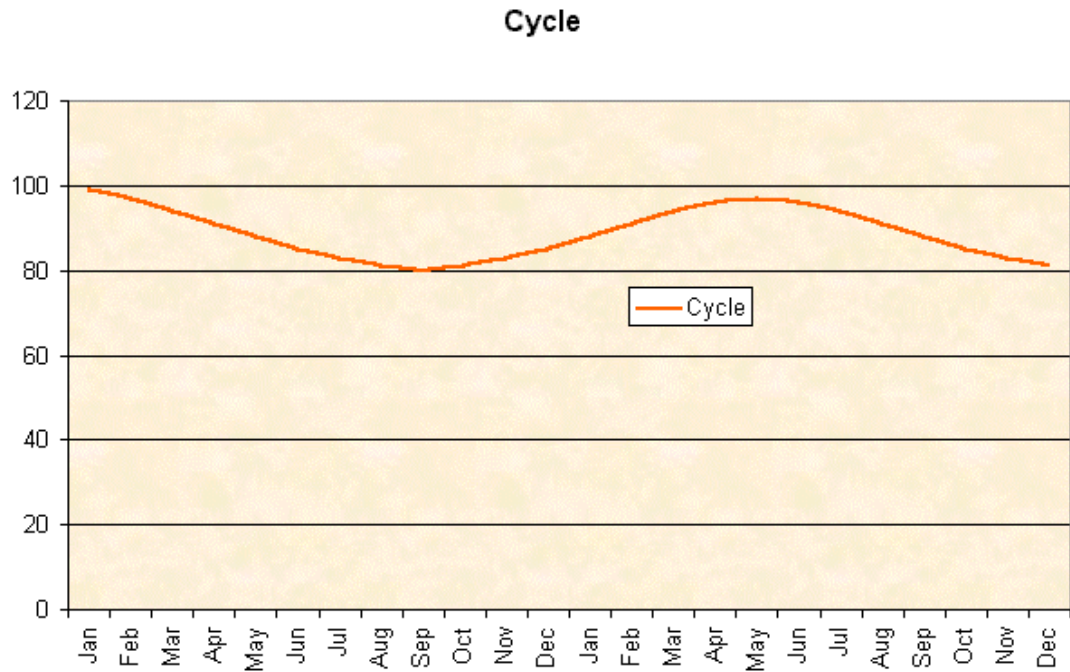
Cycles

Long-term cycles can also be detected in KPIs. The nature of cycles (distinguishing them from trends) is that they tend back to zero i.e. over a sufficient period of time, they will return to the baseline value. A cyclic pattern may also look somewhat like seasonality (discussed next) but the distinguishing factor is that cyclic patterns do not have a natural frequency. As a rule of thumb, if the frequency⁸ of a pattern is 12 months, chances are good that it is seasonality. For other frequencies it would be better described as a cycle.

Truly recurrent cycles are somewhat rarer than you might think. There is a school of thought that cyclic activity underlies the overall movement of the stock market and that, consequently, overall stock market trends can be predicted. There is certainly some evidence of long-term atmospheric cycles in nature. It is also easy to misinterpret certain 'fashions' as being cyclic (for example, birth rates in the U.S.A.), when in fact they are tied to other, non-cyclic, economic and political environment factors.

The following graphic shows a cycle pattern:

⁸ The frequency is the time taken for the pattern to recur.

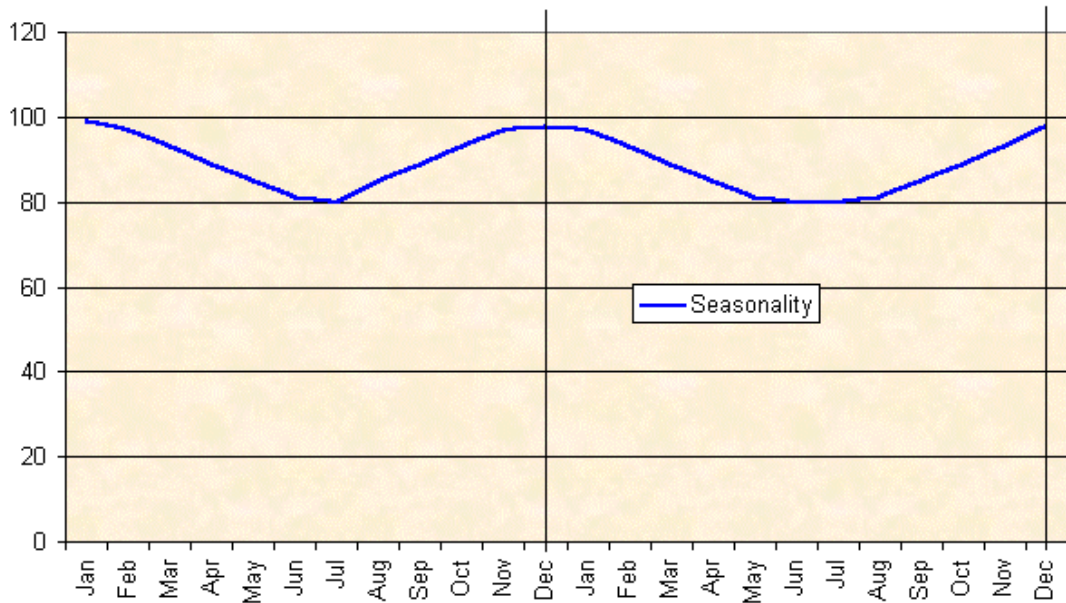


Seasonality

Seasonality is a specialised type of cyclic pattern, where the frequency of the pattern is related to the seasons. Typically, this means that the frequency is 12 months, aligning with the earth's natural seasons. Indeed, one definition of the term seasonality is "changes in business, employment or buying patterns which occur predictably at given times of the year", which embeds the 12-month frequency in the definition. Although there are examples of seasonality with periods other than 12 months, to a large extent the people who are working with these data (astronomers, agricultural scientists, Olympic Games officials) are well aware of their "seasons"; for the rest of this book we will take the well-trodden path that seasonality is related to a 12-month frequency.

This graphic illustrates seasonality:

Seasonality

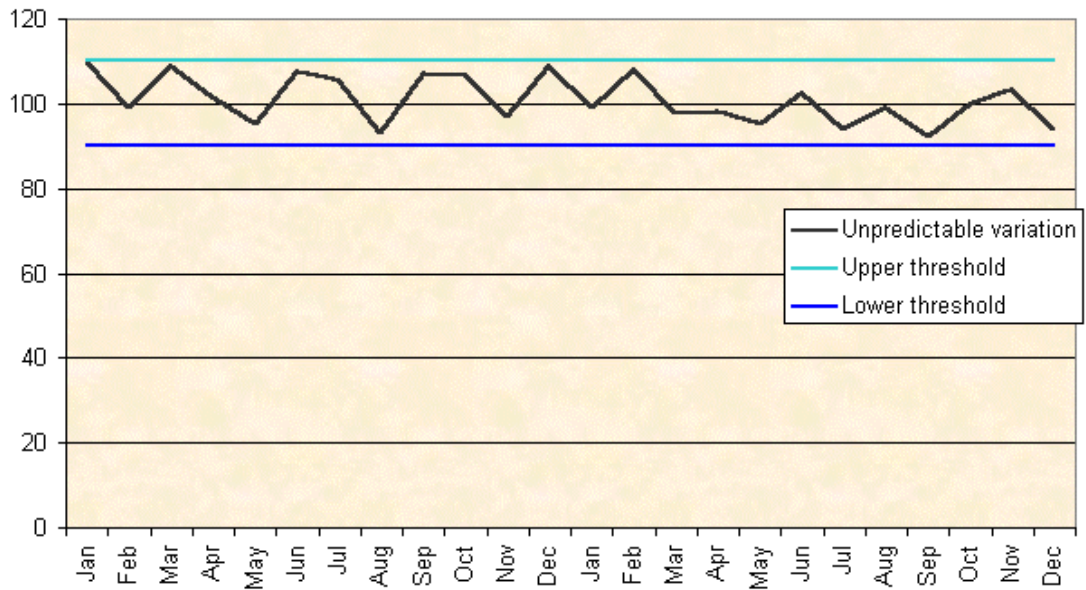


Unpredictable Variation

The other type of trending over time, of a sort, is the unpredictable variation caused by influences outside of the control of the process itself. These unpredictable variations are generated by environmental factors which are either random by nature or alternately so far removed from the control scope of the business process that they might as well be random. Consider, for example, demand for a particular service, such as therapeutic massage. There may be a long-term trend (an ageing population could lead to increasing demand), there may be seasonality of demand (higher demand during the football and skiing season) and the impact of these (predictable) demands can be managed within the "Provide Therapeutic Massage" process by, for example, scheduling additional masseurs at peak times or altering the cost of services. There will, however, also be an unpredictable variation which, by nature of its unpredictability, cannot be controlled by the process.

The following graphic illustrates unpredictable variation:

Unpredictable Variation



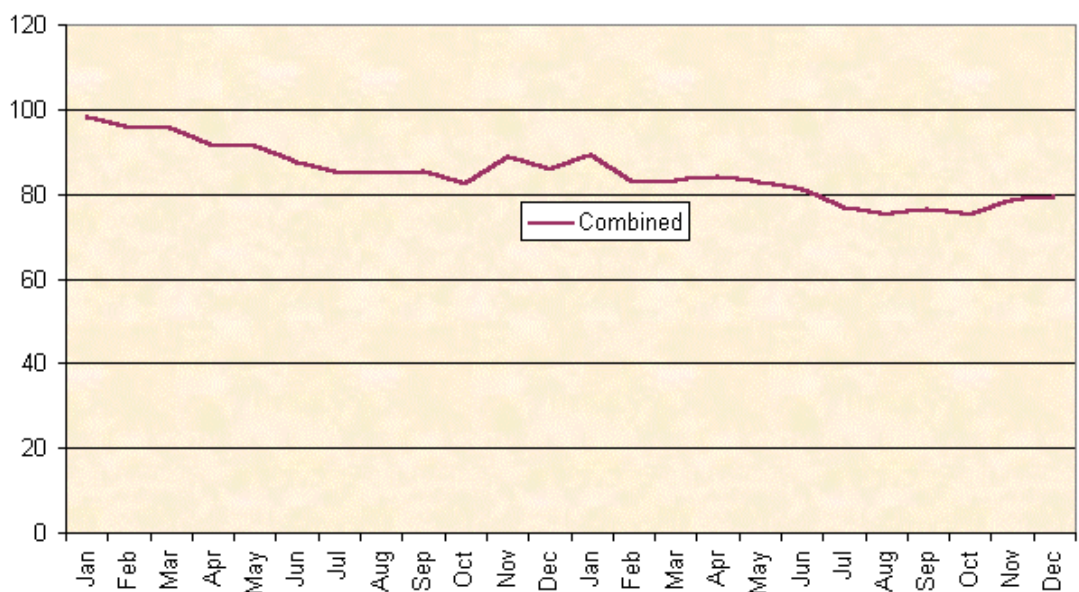
It is worth noting that, although the contribution of the unpredictable variation is, by definition, unpredictable at any time, the overall maximum magnitude of this variation **can** be estimated, as represented by the upper and lower bounding lines or thresholds.

Combined

Normally, data trends will not be so classical in form or separated as the examples given above.

The graphic below demonstrates all of the above characteristics combined in one stream of data.

Combined



It can be seen that, although this data set includes combined seasonality and a

downward trend with random variation, this is not apparent from casual inspection. We will later examine how to separate the component parts of real data streams; in other words, we will seek to unscramble the egg.

KPI trends can be measured by simply plotting each period's value on a linear scale. Good practice should be followed in using linear, full-range scales⁹.

To give a clearer picture of long-term underlying trends, calculations based on the raw data can be helpful to highlight longer-term trends and cyclic trends such as seasonality. In particular, the moving average and weighted average plots can be useful in such analysis.

Moving Average

A moving average is simply an average calculated over a relatively recent period, for example the last four months. As the KPI changes over time, the period being averaged "moves" to take account of the most recent months. This means that values from time periods earlier than the moving average's window are ignored, so the effect is that the plotted curve responds to recent events whilst deprecating older events.

Weighted Average

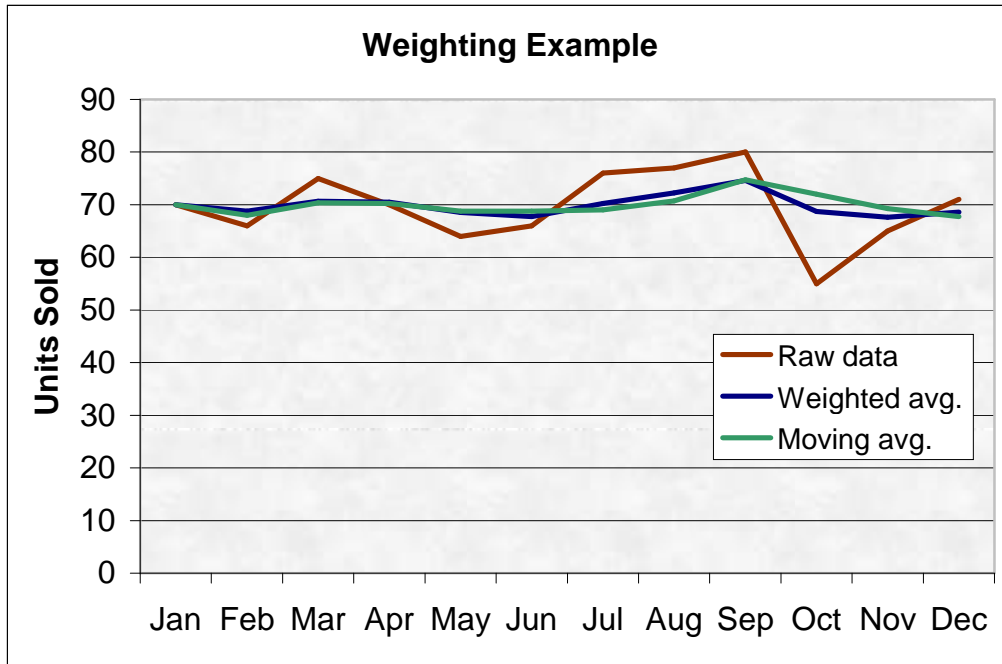
A weighted average trend can also be plotted. Such a weighted average typically gives a particular weighting to the most recently measured result, and a complementary weighting to previous the prior weighted average. Depending on the weightings chosen¹⁰, this analysis recognises recent history as more important than older history, without totally discarding that older history.

Where moving averages or weighted averages are used, the raw data should always be superimposed on the same graph, as the purpose of the calculated analyses is to assist in assimilating that data, not to disguise it. The example below demonstrates both the simple average and the weighted average, using a weighting of 0.3 for the most recent figure vs. the moving average.

⁹ In general, graphical scales should be zero-based and linear, i.e. the distance between 1 and 2 should be the same as the distance between, say, 1001 and 1002. There are occasionally valid reasons for using a non-zero based scale, such as where short-term variance would be masked by using a zero-based scale; a common example is that of indices of share prices. Even more occasionally, there may be justification for non-linear scales to assist in demonstrating mathematical relationships; an example is logarithmic scales commonly used for sound pressure levels. However, these rare exceptions should always be highlighted as such; it is unfortunately quite common practice to use both non-zero-based and non-linear scales in circumstances which do not justify doing so, other than the self-serving rationalisation that they "prove a point".

¹⁰ The weighting given to the most recent result is commonly referred to as "Alpha" and stated as a value from 0 to 1. Research has shown that "Alpha" values in the range 0.2 to 0.4 are appropriate for weighted moving averages against time.

Figure: Weighted Moving Average



Generating KPIs

This chapter addresses the practical matter of how to generate candidate KPIs; in other words, given a set of business processes, how can we go about generating a good set of candidate KPIs for those processes. We will examine several useful aids for generating KPIs and then describe the "in practice" process of generation.

Cascading Corporate Goals Down

Many ways of generating KPIs for a department or sector of an organisation can be used, but since at some point in the process the KPIs will need to be assessed for their contribution to corporate goals, one approach which can shortcut some work is to determine the department's goals by cascading the corporate goals down to the department level.

A department's goals should contribute to the corporate goals in the appropriate manner for the department's nature. For example, given a corporate goal of "Differentiate top-tier products by market-leading quality", the Purchasing Department's goals might include "Seek alternate suppliers with higher quality components at competitive rates and supply conditions", i.e. the departmental role contributes to the corporate role within the limitations of the department's *raison d'être*.

Once the department's goals are known and agreed, there is a basis for designing metrics. KPIs can be chosen which not only satisfy the fundamental properties of KPIs (key indicators of process performance) but which also can be directly understood in light of the department's goals. This approach significantly facilitates generating KPIs.

Different Perspectives

A second (and complementary) aid to generating KPIs is obtained by considering the "balanced scorecard" approach initially developed by Kaplan & Norton.

This approach is not, as sometimes misconstrued, about having a KPI set which includes "a bit of this and a little of that", but rather having a set of KPIs which measure process performance from several different perspectives, each aimed at the same corporate goals.

Messrs. Kaplan and Norton describe the need for a balanced scorecard approach in the following manner:

"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation."

The emphasis that Kaplan and Norton give to the creation of future value is of vital importance; a simple emphasis on any one, isolated aspect of the health of a business will not suffice, whether that emphasis is on financial and operational performance or innovation. The balanced scorecard acts in support of balanced growth.

Thus, when initially generating a candidate list of KPIs, seek out suitable KPIs that measure the following perspectives of the processes.

Table: Balanced Scoreboard Items

AREA	SPECIFICS
Financial Performance	Utilisation of assets Optimisation of working capital Focus on top 10% of customers, etc.
Internal Operational Performance	Delivery in full, on time Effective relationship with key stakeholders Optimising technology
Customer Orientation	Seamless service Increased customer satisfaction, etc.
Learning & Growth	Empowerment Increasing expertise Adaptability, etc.
Environment & Community *	Supporting local businesses Community leadership Environmental compliance & leadership
Employee Satisfaction *	Positive company culture Retention of key staff Increased recognition
* These areas no longer part of the Kaplan & Norton Balanced Scorecard.	

In later models of the balanced scorecard (first postulated in 1992), Kaplan and Norton subsumed elements of the "Environment & Community" and "Employee Satisfaction" areas into the first four areas. For example, "Employee Satisfaction" became a measure of the "Learning & Growth" area. We believe that Kaplan and Norton were simply ahead of their time; from a current perspective, it is difficult to believe that "Environment compliance & leadership" measures are somehow of lesser importance than "Optimising technology". Similarly, recognising the employee as a significant stakeholder in the success of the business has become recognised as a key element to creating future value in leading businesses. Consequently we suggest retaining these areas as areas of principal focus in developing KPIs.

It should be noted that measuring and managing, for example, "Retention of key staff" is not synonymous with surrendering the business equity to these key staff i.e. the fact that an organisation actively measures certain performance indicators and regards them as key to the organisation's growth (i.e. KPIs) does not imply that the organisation has that particular orientation. On the contrary, the development of a balanced scorecard ensures that appropriate attention is paid to all of the organisation's growth elements.

In general, businesses and government organisations are far better at identifying KPIs in the area of Financial and Internal Operational Performance (and to some extent in Customer Orientation, of late) than they are at identifying candidates in the Learning & Growth, Environment & Community and Employee Satisfaction areas. To assist in generating candidate KPIs in these latter areas, one useful technique is brainstorming where the aim is to create at least two candidates for each area, regardless of their immediate obvious application. In the brainstorming process the emphasis is on generating candidates, not evaluating them. Even unlikely candidates can help in understanding how the process is best measured, leading to better-defined candidates.

You may find that none of your processes has any measurable element of, for example, "Customer Orientation" or "Learning & Growth" to it. This should be treated as an immediate warning sign that either the definition and documentation of processes are faulty or, indeed, that entire processes are missing. It is not uncommon for initial attempts at mapping an organisations processes omit certain processes, sometime because they are dormant or have no clearly defined process owner.

Common-Use KPIs

A third aid to generating candidate KPIs is by reference to existing KPIs used for typical processes. Many process management software packages have sets of KPIs which can be used as thought-starters. A review of commonly-used KPIs for business processes similar to the business process under consideration can be a useful thought-starter. We have provided over 500 commonly-used KPIs, organised by business area, at the web-site:

<http://www.modulus.com.au/kpis/>

Each of the KPIs provided at this site is fully described, including its use and application. Further, the method of calculation for each KPI is fully detailed.

By use of the three KPI generating techniques described above, a set of candidate KPIs for each process can be obtained; what remains is to evaluate these candidates for suitability.

Evaluating KPIs

When a group of candidate KPIs for a process has been generated, each should be evaluated as a suitable KPI. Often this is done for the overall set of KPIs for, for example, one department's processes, with the advantage of better consistency of evaluation across the department. Good, useful, KPIs can be differentiated from general metrics in several ways. These differentiators are discussed here, viz:



Alignment with Corporate Goals

A good candidate KPI aligns directly with one or more corporate goals. It should be obvious by inspection that a candidate process KPI, when operating at a positive level, will have a direct and tangible effect on satisfying one or more corporate goals. Equally, underperformance against the KPI should contribute directly, in a negative manner, to achievement of corporate goals. The contribution can be immediate, in which case it tends to be obvious, or longer term in which case the contribution may be more subtle in nature. For example, a KPI which seeks to minimise bad debt will tend to have a clear and direct short-term contribution to the corporate goals. However, care needs to be exercised that more subtle, longer term contributive KPIs are not undervalued just because of their nature. In the same organisation a KPI which measures, for example, "product fitness for need" may also be a significant contributor, even helping to drive down bad debt over the long term by ensuring more appropriate products are provided.

It should be noted that, at departmental or sectoral level, the KPI is rarely the same as the corporate goal; usually it contributes to the corporate goal. Consequently, it should not be expected that high performance against a selected departmental KPI would fully deliver a corporate goal; it should make a material contribution, however. Similarly, the timing of the effect of a departmental KPI may differ significantly from its reflection in corporate goals; the good candidate KPI is likely to significantly lead achievement of corporate goals.

Correlation with Process Performance

As discussed earlier, a good KPI will be strongly correlated to the performance of the process which it is measuring in both the positive and negative sense. You should examine the candidate KPI from the perspective of "What would a 10% increase (or decrease) in this KPI signify in the real performance of this process? What about a 100% increase (or decrease)? Could the process performance vary significantly without changing this value?" The answers to these questions are very helpful in selecting good KPIs from candidates.

Quantified

As also discussed earlier, a good KPI is quantified. As we find it somewhat more difficult to generate candidate KPIs for the less traditional areas of "Customer Orientation", "Learning & Growth", "Environment & Community" and "Employee Satisfaction" than for "Financial" and "Operational Performance", care should be taken not to dismiss all candidate KPIs from these areas for simple lack of quantification or quantifiability. The process of generating and selecting KPI sets is necessarily iterative. If (as is common) your initial generation and selection sessions lead to excess emphasis on traditional areas, you may need to revisit the candidate generation process to generate better, quantifiable, candidates for the less-traditional areas.

KPIs Measured by the Process

A further check on the quality of a KPI is the extent to which it is measured, or can be measured, by the process itself. A KPI requiring extensive manipulation of data from outside the process being measured is an indicator that the KPI is neither good nor "natural" for the process. As far as possible, a good KPI should be automatically measured by the process it monitors. An example we have encountered before is the **"%age of enquiries responded to within 2 working days"** for the process **"Handle Enquiries"**. In a typical Enquiry Handling data system, the Enquiry would be logged and issued a reference number at the time it is received; this step should also log the time and date of receipt of the enquiry. When the enquiry is responded to, a typical Enquiry Handling data system should also log the time and date at which the response was registered. The reporting of the KPI **"%age of enquiries responded to within 2 working days"** should then be capable of being reported on by a straightforward query.

When processes are not well designed, or data systems have design flaws¹¹, even simple measures like response times can become difficult to report; a decision has to be made trading off the value of the KPI against the additional short-term difficulty in recording it.

When a set of KPIs has been established and bedded in, manual calculations required for determining KPI values can be considered for automation within the process; until the bedding-in period is complete, some additional manual calculation should be tolerated to make sure that the KPIs are sound in practice as well as theory.

Good KPIs are Readily Understood

Good KPIs are readily understood; it should be apparent from the nature of a good KPI which characteristics of a process need alteration or improvement to make the KPI respond.

Consider the KPI **"Contract, Program and Channel Management Costs as % of Order Management Costs"**. The definition for this KPI is *"Includes all costs for activities related to contract negotiation, monitoring progress and reporting against the customer's contract, including administration of performance or warranty-related issues. Expressed as % of Order*

¹¹ Any data collection system which does not time-stamp each significant event or data change can be considered of flawed design. Systems which silently allow transactions to change status without noting the event are unfortunately common.

Management Costs”, and the calculation is “[activities related to contract negotiation cost] + [monitoring progress costs] + [reporting against the customer’s contract costs] / [order management costs] * 100”. This is a real-life KPI, but it is challenging to decide what can be done to the process which it is monitoring to improve it. There are many problems¹² with this measure as a candidate KPI, but the most glaring is that it is not readily understood.

An example of the polar opposite, i.e. a readily understandable example is “**Cost of Capital**”, defined as “Weighted average of the firm’s cost of debt and cost of equity” and calculated as “[weight of debt] * [costs of debt] / [weight of equity] * [costs of equity]”. In this example, from the same source as the preceding one, the concept, definition and calculation are each clear, and it is also clear what changes in each of the components will do to the KPI.

Our familiar example KPI, “**%age of enquiries responded to within 2 working days**” is readily understood and also passes the test of it being obvious what needs attention when its reported results deviate from the acceptable band:- in some manner, the %age falling within the target response time must be improved.



Good KPIs Deliver Quality

A further, important, characteristic of a good KPI is that managing the KPI over time will deliver a quality outcome. This additional emphasis on quality can initially appear somewhat nebulous; after all, isn't the aim of the whole set of KPIs to deliver a quality outcome, in terms of the corporate goals being achieved? Of course that is the aim, but the reason for this last checkpoint is to avoid unintended consequences.

We have considered the candidate KPI “**%age of enquiries responded to within 2 working days**” from many perspectives; let's give it a final measure from the perspective of whether it will deliver quality. As can be seen the candidate KPI is mute on the question of quality; it certainly won't deliver quality as it is currently stated. Worse still, improvement of this KPI **could** be accompanied by a decrease in delivered quality, for example the %age

¹² Let me count the ways: (1) there are several disparate parts to the cost portion being monitored, bundled together in a way that suggests they can be jointly managed, which is unlikely (2) the numerator is also part of the denominator; reducing “[monitoring progress costs]” will also reduce “[order management costs]”, diluting the effect of the change (3) the measure contains elements such as warranty-related costs which are almost certainly not controlled by the process that the KPI is intended to monitor, and (4) it's hard to see which levers to pull to make the KPI respond as desired.

responded to in the allowable time **could** be "improved" by decreasing the time spent on each response, potentially decreasing the quality of those responses. The KPI could be made, at least, quality-neutral by adding an acceptable standards clause, such as "**%age of enquiries responded to (to agreed standard) within 2 working days**" and then establishing separately how that agreed standard of quality delivery is measured.

Evaluation Table

Putting together the characteristics that differentiate good KPIs, we end up with the following checklist, with some illustrative examples:

Table: Evaluation of KPIs

PROCESS REF.	CORPORATE GOAL	CANDIDATE KPI	ALIGNED WITH CORPORATE GOALS	CORRELATED WITH PROCESS PERFORMANCE	MEASURED BY THE PROCESS	READILY UNDERSTOOD	DELIVERS QUALITY
3.2.8 – Package Widgets	“Differentiate as Premium Products”	Package Defects / 1000	Strong Alignment	Highly Correlated	Directly	Yes	Yes
3.2.8 – Package Widgets	“Differentiate as Premium Products”	Product Cost / 1000	Weak/no alignment	Process is partial contributor	Partially	Yes	Neutral

Selecting a Set

Having generated a series of candidate KPIs and evaluated them for “goodness”, we are left with a group of “good” KPIs, suitable for managing the process. We are now left with the selection of the set of such good KPIs which best serves to monitor the process. Below, we discuss the factors which, together, help in selecting a good set.

Number

Various authors have suggested that the maximum number of KPIs for a single process is around 5 – 7; none seems to favour a higher number. Many simpler processes will need fewer KPIs; in particular there should be a concerted effort to maintain the number of **Financial** KPIs at a reduced level to allow space for some additional perspectives on the process, as will be discussed next.

Balanced Scorecard¹³

More important than the absolute number of KPIs is the distribution of perspectives that the selected set of KPIs confers on the process. The selected set of KPIs should represent a “balanced scorecard” evaluation of the process. In particular, the following views should be present:

Table: Balanced Scorecard Views

VIEW	SPECIFICS
Financial Performance	Utilisation of assets Optimisation of working capital Focus on top 10% of customers, etc.
Internal Operational Performance	Delivery in full, on time Effective relationship with key stakeholders Optimising technology
Customer Orientation	Seamless service Increased customer satisfaction, etc.
Learning & Growth	Empowerment Increasing expertise Adaptability, etc.

For many simple, lower level processes, it may be difficult to see how the process can have KPIs which relate to “Learning & Growth”. It is interesting to note, however, that only decades ago the concept of measuring “Customer Orientation” was so alien to U.S. automotive companies that their market share was rapidly eroded, whereas today the sharp focus on customer orientation seems familiar.

Balancing Lead & Lag

The traditional selection of KPIs has heavily favoured lagging indicators, since the requirement to quantify often is understood as *post facto* measurement. An ideal set of KPIs should include leading indicators to flag potential problems and opportunities ahead of their occurrence. These indicators are not, by

¹³ Concept originally introduced by Messrs. Kaplan & Norton

nature, fuzzy; they can often be clearly quantified. Examples of potentially leading indicators include “Number of warranty claims”, “Customer satisfaction” etc.

At a corporate level, leading KPIs may include diverse measures of externalities such as “Home mortgage interest rates”, as a bellwether of renovation spending¹⁴. Whether or not leading indicators can be identified and quantified, all selected KPIs should be measured for trending, which can also be effective in identifying potential



Balancing Short & Long Term

KPIs in the selected set should not all favour measures that are all oriented to the short term, nor to the long term. An overload of short-term measures results in excessive experimentation with the process, potentially leading to instability as previously discussed in the section on Lead, Lag & Instability.

Conversely, a set of measures that overly favours long-term results can lead to unresponsiveness and a lack of early recognition of beneficial or detrimental trends.

KPI Independence

Lastly, a good set of KPIs should contain only KPIs which are largely independent of each other.

Independence of KPIs ensures that an unreasonable emphasis is not given to one particular aspect of a process. It also ensures that sets of KPIs are not comprised of blocks of KPIs which masquerade as a balanced scorecard, when, in fact, they are simply reflections of each other.

A recent process-mapping exercise in a credit-management organisation included evaluation of processes against “Bad Debt Expense”, “Days Sales Outstanding” and “Debtors”. It is not necessary to analyse each of these to see that they are highly inter-dependent and strongly correlated. In essence, they are each financial measures and each is a measure of the failure of customers to pay their accounts, either by the due date or, ultimately, at all. A high level of “Debtors” will be reflected in a high number of “Days Sales Outstanding” and will ultimately lead to a higher level of “Bad Debt Expense”, so the three separate KPIs are not independent but interdependent and mutually self-reinforcing. Action to correct an unwelcome trend in all three of these interdependent KPIs may be overdone as a result of the number of KPIs simultaneously or sequentially going awry but, although this is potentially a danger, the biggest problem represented by this trio is the appearance of having a balanced set of KPIs. The reality is that they form no such set. As well as being interdependent, they are also all Financial result oriented, all lagging,

¹⁴ Including measures of external factors may seem to be slightly at odds with previous advice that KPIs should be highly correlated with internal processes; the difference can be seen in that these environmental measures are not strictly process KPIs, but rather more closely resemble “Establishing the Context” in which the business operates.

all addressing medium term and at least two of them occupying spots which should be reserved for more balanced indicators.

To finally select a set of KPIs, we suggest assembling a few sets, using previously evaluated good KPIs for the process; each set can then be assessed against the set criteria discussed above.

Our set of criteria for selecting a good set of KPIs (from a candidate set of “good” KPIs) is as follows:

Table: Evaluation of Sets

CANDIDATE SET	NUMBER	BALANCED SCORECARD	LAGGING / LEADING BALANCE	SHORT TERM / LONG TERM BALANCE	INDEPENDENCE
Set A	5	Yes	Both	Long Term Emphasis	Partially Inter-dependent
Set B	7	Partial	Lagging	Balanced	Independent

Thresholds, Targets & Benchmarks

A KPI in itself is not sufficient; boundaries for performance against those KPIs need to be established. That is to say, a KPI itself is just the expression of the measure which will be used, such as "**%age of enquiries responded to within two working days**"; it does not, in itself, express whether a result of 75% is good, bad or indifferent; to decide the quality of the measurement, we need to consider thresholds, targets & benchmarks.

Thresholds

In discussing General Characteristics of KPIs, we explored the unpredictable variance of KPIs over time, with that variance measuring the extent to which factors outside of the span of control of the process can impact on its measurement.

Generally, a process should operate within a performance band which makes allowance for variability inherent in the process and its measurement.

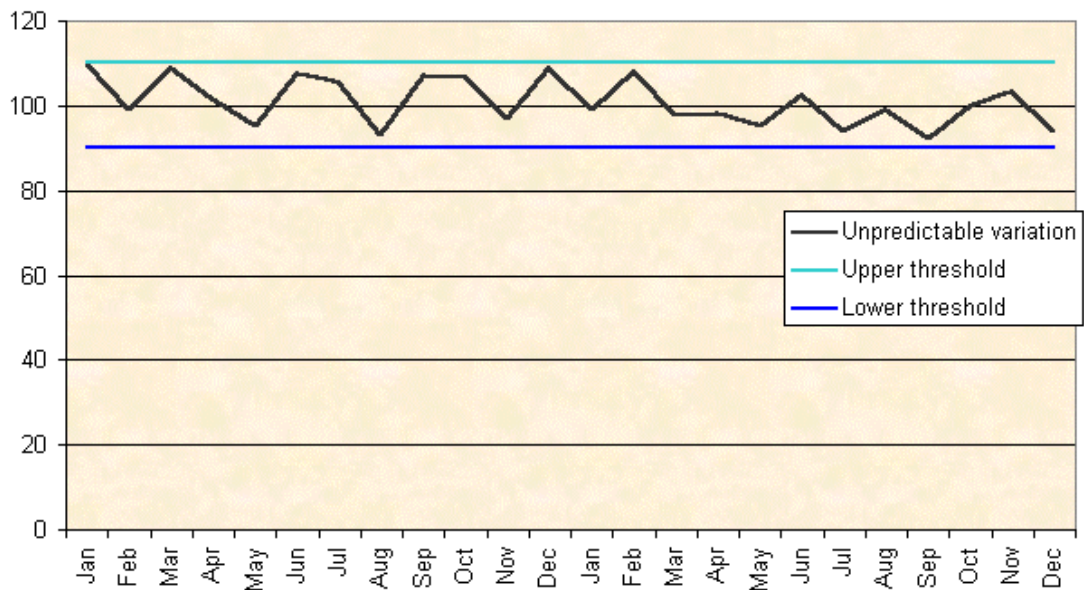
Process performance will vary due to factors beyond our ability to reasonably predict; a week of unseasonable heavy rain may suppress the month's sales figures; industrial action in a supplier's factory may limit production of a certain line of product. To allow for these variations, the performance should be managed within an expected band. Depending on the frequency of measurement and the degree of variation imposed by the operating environment, a band of about +/- 5% may be reasonable, meaning that results of 95 to 105 units against a target of 100 units/month might be accepted without requiring investigation or explanation.

Naturally, repeated results over, say, three measuring periods may require investigation to ascertain whether they are unconnected environmental effects or indications of a trend. The relative magnitude of the band of acceptable operation depends on the degree to which the process is impacted by environmental factors outside the process span of control..

The following graphic illustrates unpredictable variance:



Unpredictable Variation



Consider steady state operation of a process, i.e. a situation in which the process is generally considered to be operating satisfactorily. If the desired KPI value is set at, say, 100, we can see from the preceding graphic that every month the value will probably be something other than 100. In order to avoid chasing shadows (or, to be precise, trying to control that which we have already defined as outside the span of control of the process), we need to set a reasonable range of operation, establishing upper and lower thresholds of the values which form an acceptable operating range. In the example of the graphic above, the illustrated thresholds would provide an acceptable operating range of 90 – 110.

This process variability performance band can initially be set by reference to the accumulated knowledge of the process variability of those who are responsible for the process. However, there is strong argument for continually reviewing this tolerance and in particular for questioning the extent to which these environmental factors are truly beyond our control. We may have no control over rainfall within a month, but it is likely that we can exert control over the extent to which rainfall dampens sales. The pursuit of reduced process variability has been extensively analysed in works on quality management and assurance, in particular the stream known as Six Sigma. For our purposes it is enough to say that the initial process variability performance band should be continually reviewed to determine whether it can be tightened.

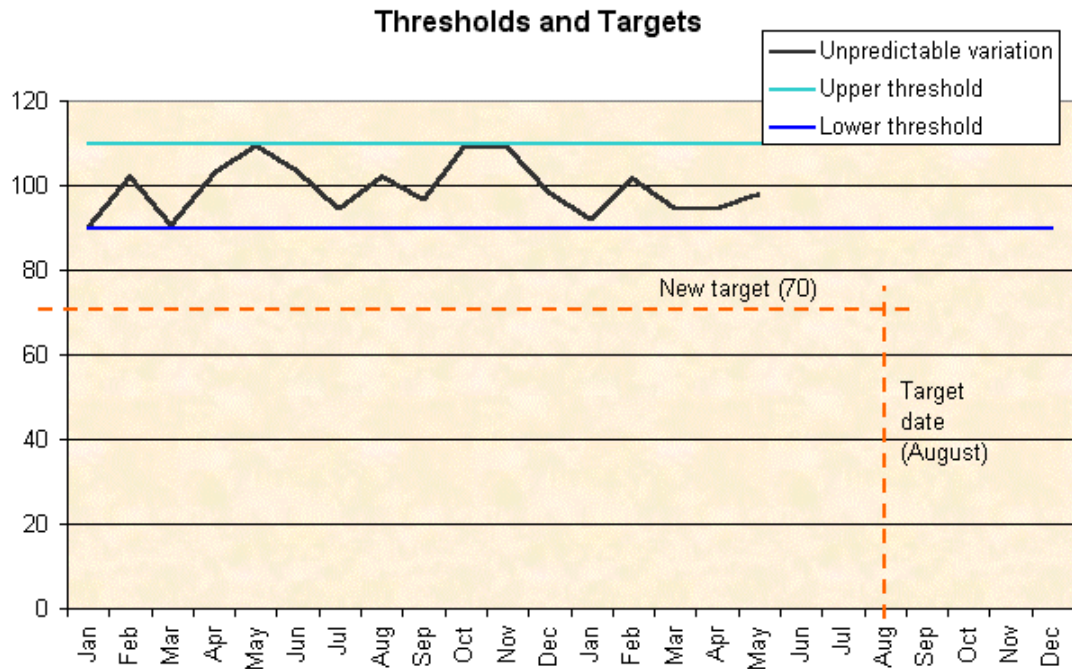
Targets

The thresholds described in the preceding section are used to measure whether a process is performing satisfactorily in steady state operation. In practice, most organisations are seeking to improve performance of their business processes and this involves the setting of targets for improvement.

Targets for business process improvement have two equally important aspects; the new target *per se* and the qualifying time constraint associated with that new target. Thus a suitable target might be, “**sustained performance at 110 units or greater by end Q3**”. Both aspects of the target need to be

realistically achievable by the efforts of the Accountable party for the business process.

The following graphic illustrates the establishment of a new target, together with its target implementation date:



As can be seen in this graphic, both the new target (a level of 70) and the target implementation date (August) are made explicit. New upper and lower thresholds will need to be established; the existing thresholds are 90 and 110. A good initial point for upper and lower thresholds would be 50 and 70, in the absence of evidence that the magnitude of the unpredictable variation will decrease as a consequence of the new, lower target.

Considering first the new target itself, it must be possible for the business process' Accountable party to deliver on that target, whether through their own direct efforts or through influencing better operating conditions for the process. To illustrate, consider a common target within service departments of billable hours. Let's say the new target for a small graphic design department's billable hours is "**70% of department total hours billed to customers within one year**", up from the current 50%. This seems reasonable at first glance, but it merits some analysis. Allowing for four weeks annual leave, a week of holidays, say one week of sick leave, there are only 88% of total hours potentially billable. If 2 people in the department of 10 are not billable (overheads such as manager and receptionist) then only 70.4% of the department's total hours are even theoretically billable. A reasonable allowance for non-billable time spent on the pursuit of new accounts is around 10% - this leaves 63% of total hours as theoretically billable, assuming no downtime between engagements. It is clear that the basic target is not within the reach of the department's manager to achieve.

To address the issues the process owner would need to alter such basics as annual leave entitlement or policy with respect to the charging of hours spent in pursuit; even then, it is unlikely to have been the original intent of the target. If we restructure the target to more directly reflect the underlying corporate goal, we might end up with something more like "**70% of department total**

payroll billed to customers within one year". This target value may be much more within the process owner's control. In attempting to achieve it, the process owner might set the hourly rate to incorporate the departmental overheads and entitlement costs. He or she might look at the blend of permanent staff to contract staff to see if some improvement might be achievable there. In short, expressing the target in a manner as closely reflective of the real corporate goal (cost recovery instead of hours) helps to incite consistent action, but, even then, the target needs to be carefully analysed to ensure that it is sensibly within the scope of the process owner to deliver.

Equally, the time constraint element of a performance improvement target must be reasonably achievable by the process owner's efforts.

As well as being aligned with corporate goals, KPI improvement targets need to make a material contribution to the corporate goal. Thus, where a corporate goal is, say, a 33% increase in market share over the next 2 years, it is clearly inadequate for a departmental KPI improvement target, for example, "customer satisfaction rating after 30 days" to have a 5% / annum target improvement rate; even if met, the contribution will not be material to the extent required by the corporate goal.

Benchmarks

As well as determining thresholds and performance improvement targets, comparison of the performance of a business process with similar processes in other organisations can be helpful in deciding whether the performance level is in the right range. Benchmarks can be determined to allow comparison of local performance with industry averages or the known performance of principal competitors. For standard processes, benchmarks for acceptable or even 'world class' performance may be available either from consultancies or from publicly available data stores.

All of the caveats that apply to performance comparisons with competitors and industry averages apply here but doubly so; except in special cases, managing by KPIs is not about trying to "beat" one specific target but to drive the process so that it contributes to corporate goals on all levels. It is also important in KPI benchmarking to avoid potential pitfalls, such as.:

- establishing performance target levels which are too 'soft' by reference to competitors' mediocre performances (after all you want to **beat** them, you don't want to **be** them)
- permitting the benchmarking exercise to become an end in itself
- using the benchmark as a substitute for proper, fundamental analysis and
- allowing, or being perceived as allowing, anti-competitive practices to develop.

Comparative Performance and Normalisation

When performance comparisons are to be made, for example between two geographical divisions performing like tasks, the comparisons must be made in a way that is equitable. The process of making equitable comparisons is referred to as normalisation. Normalisation of KPIs ensures that the comparison to be performed shows up the real differences in performance whilst eliminating environmental factors outside of the control of the organisation.

Normalisation Example

The aim of normalisation is to ensure that the real performance differences between two KPIs are highlighted, whilst the uncontrollable variables are suppressed.

Let us consider a simple example where we are making a comparison between East Branch and West Branch of sales in the last quarter. East's sales in the last quarter totalled \$225,000, whilst West managed \$250,000 of sales. So, can we conclude that West performed better? Unless the branches have been carefully constructed to have "equal opportunity" areas, the answer is no. At the very least we need to allow for the "size" of the territories. If East Branch's territory encompasses 50,000 people and West Branch's territory encompasses 75,000 people, it looks like East has done better as measured in "**\$Sales/Capita of Branch Population**".

However, consider a sales product which is highly targeted toward a younger, female audience with high disposable income; examples might include fashionable, high-end shoes or jewellery. Clearly what matters is the availability of this target audience in the branch territories, which might have significant differences in their demographic distribution of young females with high disposable income. A more equitable (although much more wordy) measure might be "**\$Sales/Capita of Females < 30 y.o. with Gross Income > \$75000 in Branch Area**". This results in East having a KPI of \$22.50 vs. West with a KPI of \$21.25.

Even now, we may not have an "equitable" comparison. As it happens, due to past HR practices West Branch has 20% more sales people than East and commensurately higher cost of sales. If we now normalise the sales figure to allow for the number of sales staff (as a rough proxy for the cost of sales) East's KPI is \$2.25 vs. West's KPI of \$1.77.

It must be admitted that the normalised KPI is at least more verbose than the raw sales figure. However, it does not fail the test that "Good KPIs are Readily Understood". The normalised KPI (which we might express "**\$Sales/Capita of Qualified Demographic/Sales Person**") is not complex to grasp and it is without doubt, more equitable in its comparison than the raw sales figure. We can readily understand that, given its captive demographics and its number of sales staff, East Branch is doing substantially better than West. Having arrived at this conclusion we have a better basis for examining and understanding **why** East is getting better results than West; this understanding would not be so readily achieved when we based our comparison on the raw sales figures.

As previously stated and demonstrated by this example, normalisation is a simple process of eliminating the uncontrollable aspects of a comparison such that the remaining differences are real performance differences.

Comparison Examples

Comparisons (requiring normalisation for equitable treatment) are extremely common. While the common example of comparison between two geographical divisions comes to mind readily, there are many commonplace situations where comparisons are made explicitly or implicitly. Examples include:



- geographical divisions performing like tasks
- individuals performing like tasks
- comparison of performance in one time period with another.

Data Sources for Normalisation

Data sources for normalisation should be chosen from those data intrinsic to and native to the processes being measured. For example, for a production process it is common to normalise production *per online hour*. When choosing normalisation data, it is better to err on the side of simplicity and self-evidence than to choose overly-sophisticated normalisation criteria. In particular, cost data should be avoided for normalisation purposes since:

- the availability of data inevitably lags the main performance attribute being measured and
- cost data frequently contains side effects which may or may not be controllable but often lead to dispute about the impact of the normalisation data on the KPI.

A most useful data source for normalisation of KPIs which relate to the organisation's interaction with the public is the published census information. The census data available in Australia is quite detailed and is broken down to a level which quite closely coincides with postcodes, which is a quite workable level of granularity. In Australia the census data is published about every five years and is made freely available, although the quantity of data generated can make absorption of the relevant data a major task.

KPI System Implementation Roadmap

The roll-out of a KPI system is, in essence, a business process management project like any other. However, since we want to provide you with a practical and directly usable roadmap for how to go about the implementation of a KPI system and since there are some aspects of change which are peculiar to KPIs, we will cover each step in the process in some detail.

In practice, within **your** organisation, with the constraints imposed by **your** work-team's skill-sets and **your** work environment's ability to manage change, **your** timetable is likely to vary.

The amount of work to be undertaken will also vary according to **your** organisation's upstream preparedness (Have all processes been identified and documented, with single-point accountability defined, or is this a necessary precursor project?) and also the amount of downstream integration **you** wish to perform (Will the KPIs drive a performance management system? Do you intend to establish Service Level Agreements with internal customers for service processes?).

Preparatory Work

To assign KPIs to Business Processes evidently requires that these Business Processes are already identified and documented. At the minimum, there are three preparatory requirements, viz:

- the corporate goals must have been enunciated
- the principal business processes must have been identified, named and documented, at least to the extent that each process is unambiguous
- for each principal business process, single-point accountability must have been allocated.

Corporate Goals

As discussed previously, the KPIs will be evaluated in terms of their alignment with corporate goals as part of determining their appropriateness as KPIs for each process. To do this, those corporate goals must have been clearly enunciated; by preference the goals should have been quantified and allocated target achievement dates.

Business Process Identification

The processes to which the KPIs are being allocated must have been documented to a level at which the scope, purpose and method of execution has no ambiguity or uncertainty for these characteristics of the process. It is clearly pointless to try to measure key aspects of the performance of a process for which the exact purpose and scope is in dispute. The identification and documentation of business processes is covered in the companion book "Identifying, Documenting & Analysing Business Processes" (the green book).

Single-Point Accountability

Under single-point accountability, one person is allocated as the accountable person for each process and consequently becomes the process owner. As the accountable person for a process, this process owner is held accountable for

the performance of the process and its outcomes. To execute this accountability, the process owner must be given the authority to manage the process, including altering the process in order to maximise its results.

The rollout should be accompanied by a two-way map of all processes within the organisation segment in focus, showing the accountable party for each process and equally the processes for each accountable party.

The single-point accountability will need to be negotiated with each accountable party. Although the single-point accountability is often accompanied by linkage of the KPIs to a performance management system, we believe that this should only be proceeded with after thorough bedding-in of the KPI system, to ensure that the KPI system does not taint the Performance Management System and vice versa.

Establishment of single-point accountability (and accountability analysis in general) is covered in the companion volume "Identifying, Documenting & Analysing Business Processes" (the green book).

Delegation of Authority to Accompany Accountability

For each process, a single point of Accountability must be defined; this is a fundamental aspect of the management of business processes, without which it is pointless to develop sophisticated measurement and reward systems. The accountable person must have the authority to make changes to the operation of the process (both in the short-term and long-term) to alter its KPIs outcome. The use of KPIs to hold process owners accountable for results (especially in a performance management system) must encompass delegating the power to alter the process to meet its required KPI results.

Generating KPIs

The process for the generation of KPI candidates is adequately covered in the preceding section. We suggest to set up a small team of two or three people¹⁵ to be tasked with generating candidate KPIs for each business area, using the three techniques of "Cascading Corporate Goals Down", "Different Perspectives" and "Common-Use KPIs".

In the generation of candidate KPIs, it is important to avoid editing proposals; it is greatly preferable to record all suggestions and reserve the editing for the next (evaluation) step. The reason for this caution is to avoid the risk of arriving at the evaluation step with a candidate list purely comprised of the usual suspects, especially lagging financial and production measures.

Evaluating the KPI Candidates

Use the advice in the evaluation section to determine the quality of the candidate KPIs. Where the result of this process is the elimination of a large body of the candidates or (equally unpalatably) results in a set of survivor candidates which are similar to each other, it is appropriate to return to the previous stage to see if other, more balanced, candidates of good quality can

¹⁵ This does not imply that two or three people are working full-time on this task; depending on the size and capacity of the organisation, it might be a weekly meeting of two or three people to discuss their part-time progress. The key point is that it is better to use several people in this process rather than delegating it to one person, in order to maximise the diversity of views generated.

be generated. The evaluation process can be performed by the same team responsible for the generation of candidates.

Selecting a Set of KPIs

The generation/evaluation team can then continue to the selection of appropriate sets of KPIs, making use of the balancing techniques discussed earlier in this book. The endpoint of the selection process is one of the key gateways in the KPI System Implementation; the development team should present the selected set of KPIs to the senior management team of the organisation, and seek the endorsement of the organisation's board. In so doing, the development team should clearly set out the process that has been followed, including the rationale of that process. The presentation should include discussion of the mechanism to be used for setting targets and the mechanisms and costs, both direct and indirect, of obtaining and reporting the data in support of the KPI system.

Setting Thresholds, Targets and Benchmarks

Once the set of KPIs to be used is approved, the development team should move to establishing the thresholds and targets to be used. The establishment of thresholds and targets needs to be a subtle blend of top-down, bottom-up and fundamental analysis approaches.

The top-down aspect is derived from the fact that the targets must support the corporate goals and be consistent with these; for example, where the organisation's goal is for a significant increase in customer satisfaction with the organisation's products, a production quality-control KPI of "5% of goods to be inspected" is unlikely to be adequate. The bottom-up aspect of the establishment of targets is that the KPI targets need to be derived from current performance; it is unlikely that performance can be doubled overnight just because head office requires it. The setting of unachievable targets (or targets which are perceived as not achievable) will lead to a low level of commitment by the very people who are responsible for the processes. Equally, fundamental analysis is necessary to ensure that random and seasonal variability are properly accounted for.

Establish Plans to Meet KPI Targets

Once the training is underway, the rollout team should assist accountable parties in developing targets for their KPI results. Initial targets should be attainable within three to six months to ensure that momentum is not lost in the initial year of KPI operation; more ambitious targets can be developed subsequent to this.

Implementing the Monitoring System

Test & Tune

The KPIs, their performance envelopes and their reporting systems will need observation and tuning over the first months of operation; in particular KPIs which are proving accurate and useful but which require some manual effort to determine may require some degree of automation.

Resourcing the Roadmap

In this discussion of resourcing, we will talk principally about medium to large organisations, where Operational Departments, Human Resources, Information Technology and other sections are separately resourced. However, nothing in this discussion has less applicability to smaller organisations, even where these roles are performed by one or two people; the roles still need to be fulfilled, although this may be done by very few people wearing multiple hats.



Implementing KPI management of business processes will require different resources at different points, but for a successful implementation it is advisable to have both management commitment and continuity throughout the process. A good way to achieve this in practice is for a senior manager to drive the implementation from start to finish, in the role of Senior Sponsor.

Specific resources which will be needed may include:

Senior Sponsor

As mentioned, a senior manager should drive the KPI implementation from start to finish. Depending on the size and type of the organisation, complexity of the implementation, degree of preparedness and other factors, this role will vary from a single individual through to a small group lead by a senior manager.

Operational Departments

Each operational department will be involved in the process, especially in the set-up step (identification and documentation of principal business processes, single-point accountability, documentation of existing KPIs) and the later steps (selection of thresholds and targets, rollout of monitoring system).

Information Technology

Some of the selected KPIs may require adjustment of an organisation's IT systems to facilitate capture of information. Additionally, depending on the size and complexity of the organisation, the final KPI monitoring system and its linkages to the performance management system (if any) may require development by the IT department.

Human Resources

If the project incorporates linkage of KPI results to a performance management system, there will be the need for detailed involvement of the HR department; this involvement should be initiated early, by way of education sessions to allow HR to determine the changes necessary.

Education & Training

All of the people who will be involved in, or impacted by KPI system implementation deserve to be fully informed as to what is being done, for what

reasons and how it will impact on them. To this end, a program of education and training should form part of the implementation. This program should cover all aspects of the KPI system, including such matters as trend analysis, variation explanation and progress against KPI targets to ensure consistency in approach and acceptance within the organisation.

We suggest a two part training effort, comprising a generic training module for KPIs, followed by a specific tailored programme covering the specific implementation within the target organisation.

Conclusion

Generation of KPIs for a process can be facilitated by simple means; selection of "good" KPIs for monitoring the process is equally straightforward and selection of the best sub-set of those KPIs for the task is not difficult.

The one area of the whole task which requires some adjustment is generating an adequate set of "balanced scorecard" non-financial KPIs. Although the theory of the balanced scorecard has been accepted for decades, a cursory examination of commonly-used KPIs shows that the heavy preponderance in use today consists of financial and operational measures, with Customer Orientation, Learning & Growth, Environment & Community and Employee Satisfaction being exceptional.

The selection and refining methods presented in this book will not guarantee an ideal set of KPIs for a process, but in practicing the steps, a better understanding of appropriate measurement and control techniques for the processes under review will be gained.

Where Next?

The complete series of Business Process Management e-books is as follows:

- "Business Process Management Overview" (the grey book)
- "Generating & Selecting KPI Sets" (the blue book)
- "Implementation Guide for Service Level Agreements" (the plum book)
- "Identifying, Documenting & Analysing Business Processes" (the teal book)
- "Selecting & Implementing Internal Controls" (the red book)

The series is available at the following websites:

<http://www.changefactory.com.au/>

and

<http://www.modulus.com.au/>

Change Factory is a change management company, specialised in Business Process Management and Training. Change Factory can provide your company with support in implementing business process management, documenting business processes, RACI analysis, KPI management and target setting, Service Level Agreement implementations and Internal Control implementation. Additionally Change Factory offers a range of training programs directly aligned with this Business Process Management. For more information contact Kevin Dwyer, kevin.dwyer@changefactory.com.au.

Modulus provides tools, applications and services to consultancies and website developers.

For more information contact Peter Hill, peter.hill@modulus.com.au.

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