

9.2 How to implement metrics for IT service management

We are often too busy to ask for directions. Implementing a measurement framework should help align IT with the business objectives and create value through continual improvements. This helps us create a roadmap and keeps us from getting lost. In this article, David A. Smith presents such a framework.

INTRODUCTION

It's often been said that "you can't manage what you don't measure", which is still true to this day. Without purpose and a course to follow, the destination is uncertain and almost always unpredictable. Many management books have been written on this subject, ranging from personal development to organizational leadership. They all agree in principle that a purpose, goal or destination must be determined in order to chart a course and path to achieve them. Once the path or roadmap has been defined, the journey must be carefully planned to guide the traveller safely to the desired destination in the prescribed time within planned costs.

Measurements are like navigational aids. They help identify the destination, the roadmap to follow, hazards to avoid, milestones to reach, fuel consumption, constraints or limitations, expected time of arrival, and so on. Without navigational aids, one could get lost, end up anywhere, get stranded, fall off a cliff, run out of fuel, get in an accident, or fall asleep at the wheel.

The challenge for information technology (IT) providers is that the destination can change quickly, frequently and without notice. The information age fuelled by IT has made it possible to accelerate the pace of businesses. Product and service lifecycles have been reduced from years to days in extreme cases. The business must now lead the marketplace or stay close behind. If the business doesn't manage to do so, it will vanish as a result of heightened global competition. This has resulted in a run-away feedback loop: IT enables the business to evolve more quickly; competition requires IT to change more rapidly, efficiently and effectively. Continual change has become "the nature of the beast".

IT is quickly becoming one of business' most costly, critical and strategic assets. Of late, the money spent on IT is in question, business leaders are continually asking for proof of value delivered. This has put more strain on IT leaders to demonstrate value, reduce costs and improve services, or else be outsourced.

IT providers need navigational aids, more so than ever. This presents somewhat of a conundrum. Most IT providers are too busy to figure out how to implement measurements, let alone become experts in their use to control and manage the business of IT.

Goal of this article

The goal of this article is to endow IT providers with a flexible and scaleable measurement framework which is easy to learn, implement, manage and improve. The goal of this framework is to provide process metrics and techniques to help align IT with the business objectives in order to create value. The framework is based on a continual improvement lifecycle and helps align IT with the business objectives and create value, making processes and services more “efficient and effective”. It helps the reader determine ways to:

- align IT with business objectives and verify the results
- maintain compliance requirements for business operations
- drive operational efficiencies, effectiveness and quality

The measurement framework can be implemented as a comprehensive measurement program for all processes and services, or selectively for individual process or services. It is aligned with the IT Infrastructure Library (ITIL®), also a set of best practices. The framework is compatible with the Control Objectives for IT (COBIT®) framework and supports the ISO/IEC 20000 standard for IT service management.

More details can be found in the book “Implementing Metrics for IT Service Management” (Smith, 2008). The book provides methods, concepts, examples, techniques, checklists and software templates to accelerate adoption through a “how to” based approach.

What you will learn

By reading this article, the reader will gain an insight into:

- a basic overview on how to apply Information Technology Service Management (ITSM) metrics and where to find more information
- basic measurement framework concepts
- the measurement process of monitoring, analysis, tuning, process improvement, administration and reporting
- typical measurement costs, benefits and common problems
- steps for implementing and optimizing the measurement system
- common reporting techniques

Scope

Although this measurement framework can be applied to any process, service or technology metric, the scope of this best practice document is in the context of process- and service-based measurements. Figure 1 provides an illustration of process- and service-based measurements from the “Metrics for IT Service Management” book (Brooks, 2006) and includes additional references to quality, efficiency and effectiveness measures.

Table 1 provides an example of strategic, tactical and operational processes based on the ITIL® version 2 (V2) set of best practices. Further information and specific metrics for each of these processes can be found in the book “Metrics for IT Service Management” (Brooks, 2006).

The measurement framework can be implemented as a comprehensive measurement program for all processes and services, or selectively for individual process or services.

Who should read this article

This article is intended for all levels of IT management. Specific interest by role includes:

- IT executive management

- process/service owners and managers
- measurement owner and manager
- IT team leaders
- quality managers
- service level managers

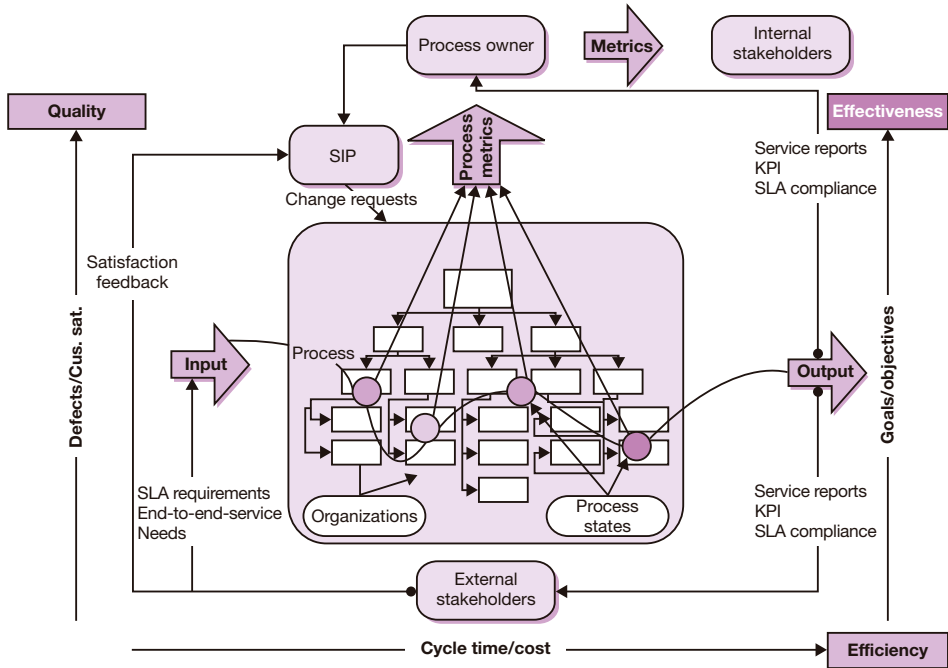


Figure 1 Process & service based measurements

Strategic	Tactical	Operational
Business perspective	Service level management	Service desk
Service improvement program	Problem management	Incident management
Risk Management	Financial management	Configuration management
Document management	Availability management	Change management
Competence, awareness & training	Capacity management	Release management
Program and project management	Service continuity management	Application development
	Security management	Application support
		Operations management

Table 1 Strategic, tactical and operational processes

HOW TO IMPLEMENT ITSM METRICS

What metrics are all about

Based on the book “Metrics for IT Service Management”, a “metric” is just another term for a measure. Metrics define what is to be measured. For IT, this includes technology, processes and services. Metrics provide the feedback mechanism allowing management to steer,

control and guide IT toward strategic objectives. The book further explains that metrics help to:

- align business and IT objectives
 - accounting of IT processes and deliverables
 - inform stakeholders
 - understand issues
 - influence behaviour
- achieve compliance
 - IT operations strategy
 - ISO/IEC 20000, COBIT®, service levels
 - critical success factors
 - minimize interruptions
- establish operational excellence
 - measure, control, and manage cost effectiveness
 - improve effectiveness and quality
 - service level improvements
 - maximize value creation

Implementing metrics

Metrics for IT service management need to measure process and service effectiveness in addition to the functions and technologies that provide them. Metrics in IT have traditionally been measured in functionally-oriented silos like the help desk, server technical services or the operations department. Information technology departments are shifting to process- and service-centric organizational models requiring metrics which report beyond the functional boundaries to determine success. For example, both the application development and IT operations departments are functionally very mature and when independently measured, appear successful. However, they don't work well with each other and together frequently fail to deliver deployments.

Metrics have been very mature for measuring technology availability on a discrete component basis, but in many cases without consideration for the end-to-end user experience. For example the application server was available 99.99% of the time but the network was not measured and turns out to be frequently not available or not responsive. Therefore, the measure of system availability (server plus network) does not match the user experience.

To solve this, a new and improved approach for implementing metrics is needed, using a continual improvement framework. This must meet new and changing compliance requirements and provide a means to gain operational excellence. The measurement framework reference model presented in this article can be quickly implemented, adapted and evolved to meet the organization's needs. Some of the key features of this measurement framework reference model include:

- continual improvement, that is, W. Edward Deming's Plan-Do-Check-Act cycle (Deming, 1986)¹
- top-down design approach for aligning goals and objectives
- process- and service-based IT service management approach

¹ *Edwards Deming has been inspired by Walter Shewhart, one of his teachers already advocating a "learning and improvement cycle" (Shewhart, 1980). The PDCA-cycle of Edwards Deming is also known as the PDSA-cycle, which stands for "Plan-Do-Study-Act". In this case, the results are studied instead of checked.*

- scalable and flexible fit-for-purpose model with hundreds of sample metrics and scorecards
- bottom-up reporting of facts, metrics, indicators, scorecards and dashboards
- aggregation of metrics to formulate key performance indicators
- accountability and role-based matrix models
- techniques for comparative, causal and predictive analysis
- method for filtering improvement initiatives and tracking performance status
- ability to report performance improvements and derived value-based benefits
- multiple implementation methods and scenarios
- how-to check lists for planning and implementing metrics
- scorecard accelerator templates to demonstrate principles and techniques, and to help kick-start the implementation of a measurement program

Basic concepts

There are four critical success factors for an effective measurement framework:

- enable validation of the strategy and vision
 - aligned with the IT goals and objectives
 - validation that alignment is working
 - confirm goals and objectives are met
- provide direction with targets and metrics
 - set targets through metrics
 - control and manage the processes
 - verify targets are being met
- justify with a means to gauge value realized
 - justify performance improvements with a solid fact base
 - quantify benefits realized
 - communicate value realized with factual evidence
- intervene and provide corrective actions
 - identify deviations when they occur
 - understand the root causes
 - intervene with corrective actions to minimize consequences

Figure 2 provides an outline of the measurement framework.

The measurement process

The measurement process comprises four main sub-processes which repeat to form a continual improvement feedback loop based on W. Edward Deming's Plan-Do-Check-Act cycle. The sub-processes of the measurement process are:

1. **Tuning (Plan)** - The tuning sub-process is responsible for identifying improvement opportunities and recommendations for the subject process or service which is being measured. Note that the tuning sub-process can also act as the entry point for planning the measurement program and framework.
2. **Implementation (Do)** - The implementation sub-process is responsible for implementing the recommended changes through normal change management processes. Note that the implementation sub-process can also act as the entry point for implementing the measurement program and framework.
3. **Monitoring (Check)** - The monitoring sub-process is responsible for the data gathering, calculations and validation of the required measurements.
4. **Analysis (Act)** - The analysis sub-process is responsible for comparative, causal and predictive analysis of the measurements to determine what corrective actions may be required.

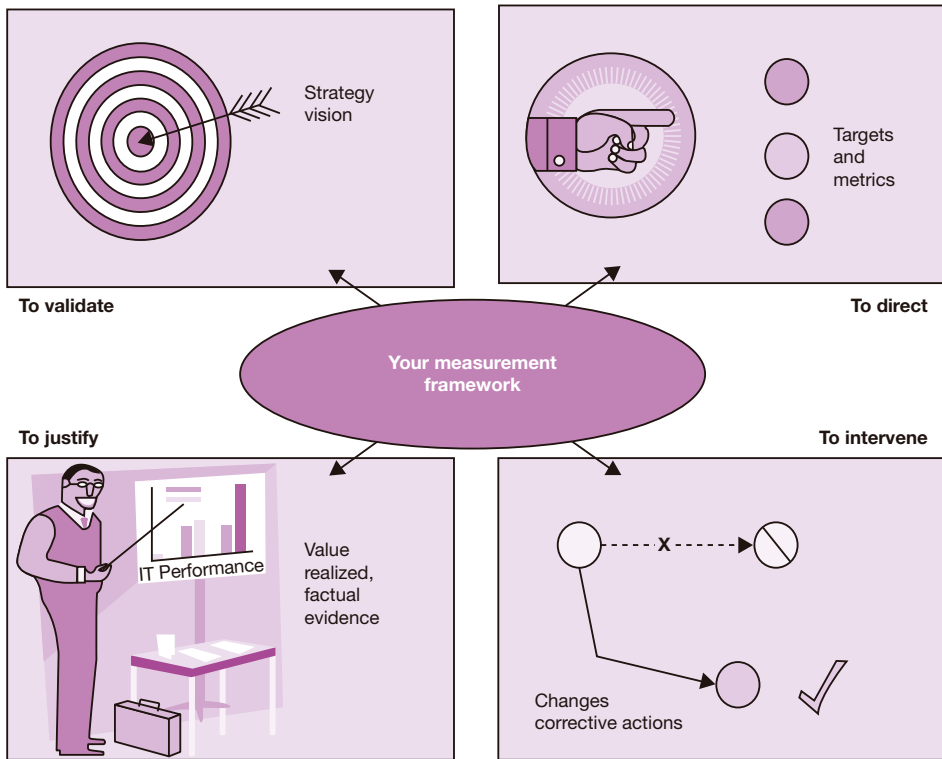


Figure 2 Measurement framework

There are two additional supporting sub-processes which provide administration and reporting:

1. **Administration** - This sub-process is responsible for the administration of the activities associated with the maintenance of the metrics and measurement database (MDB).
2. **Reporting** - This sub-process is responsible for reporting the findings and recommendations to management and various stakeholder groups, keeping them informed and aware.

There are a number of sources of information that are relevant to the measurement process.

Some of these *inputs* are as follows:

- the organization's business plans, strategy and financial plans
- the IT/IS strategy, plans and current budget
- any goals and objectives set by business or IT management
- any targets and thresholds to maintain or achieve service levels
- service level agreements, service level requirements and service catalogs
- initiatives to be monitored as a result of service reviews or improvement activities
- the rolling business- and IT-program and project calendar

The *outputs* of the measurement process are used to report the status, findings and recommendations of various service management processes and services to key stakeholder groups within the organization. Some of these are as follows:

- process- and service-based performance reports
- exception handling reports

- notices and alerts
- root cause analysis and observations
- predictive analysis and observations
- change requests
- status of new and existing service improvement initiatives
- benefits or value derived from processes, services, service assessments, audits and reviews

Figure 3 shows the inputs to, the activities within, and the outputs from the measurement process.

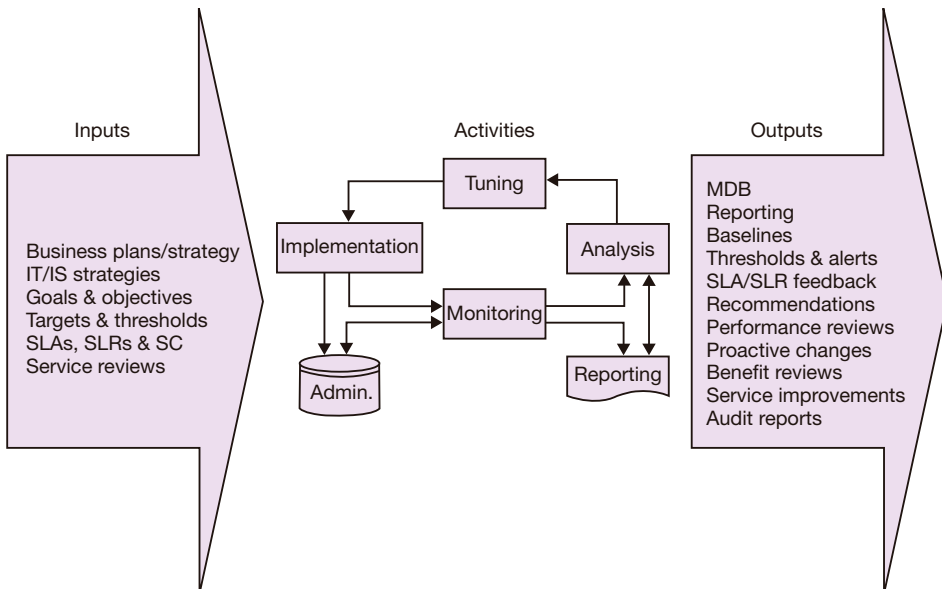


Figure 3 Measurement process inputs, activities and outputs

Measurement activities

This section describes activities for each sub-process of the measurement process. The sub-processes are carried out on a sequential basis, normally on a predefined and agreed schedule (for example monthly). Each sub-process:

- requires inputs
- performs activities
- produces outputs

These outputs provide the inputs to the next sub-process in the sequence. The sub-processes are performed on a cyclical basis. This forms a feed-back loop providing a basis for continual improvement. Like ITIL's capacity and problem management processes, some activities in the measurement process are reactive, while others are proactive.

A powerful feature of how the sub-processes can be used with the same data is the perspective from which it is analyzed, in terms of reactive (prescriptive) versus proactive (preventive).

For example, the decline of a service level or a critical process measure could set off a series of reactive event triggers. The triggers set an alert which automatically starts an investigation to determine the root cause and initiate corrective actions (prescriptive).

Another example might be where a decline of a service level or a critical process measure could set off a series of proactive event triggers. The triggers set an alert and start an impact analysis to determine which dependent services or processes are at risk and initiate preventive actions (preventive). These event triggers and actions are similar to the ITIL® event management process.

The proactive (preventive) activities of the measurement process should:

- provide the information necessary for actions to be taken before the issues occur
- produce trends of the current process or service workload (utilization) and estimate the future resource requirements
- improve change planning for IT services
- identify the changes that need to be made to the appropriate processes to maintain service levels
- actively seek to improve the service performance and provision

A number of the activities need to be carried out iteratively and form a natural lifecycle as illustrated in figure 4.

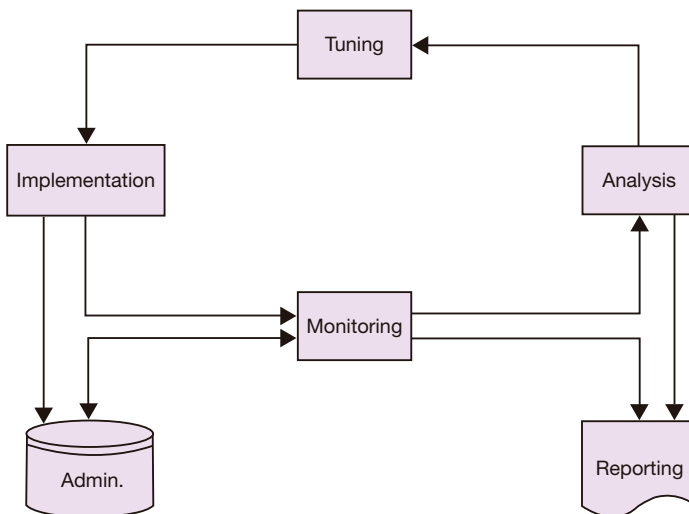


Figure 4 Measurement process lifecycle

Data collection extraction should be established and automated, where possible, for each of the processes or services being measured. The data should be transformed, loaded and analyzed, using systems to compare actual values against performance thresholds. The results of the analysis should be included in reports, and recommendations made as appropriate.

Decision analysis and management control mechanisms may then be put in place to act on the recommendations. This may take the form of:

- renegotiating service levels

- modifying policies
- making process improvements
- implementing tools
- developing new scorecards and metrics
- adding or removing resources

The cycle then begins again, monitoring any changes made to ensure they have had a beneficial effect and collecting the data for the next day, week, or month. The suggested frequency for managing the sub-processes is:

- **on an on-going basis** - main sub-process activities and the storage of data in a measurement database (MDB)
- **ad hoc** - proactive and reactive activities to initiate improvements to strategic, operational or tactical processes or services
- **regularly** - the production of the service reports, review of benefits realized and improvement initiatives

Figure 5 shows the sub-process activities together with the other activities of the measurement process that need to be carried out.

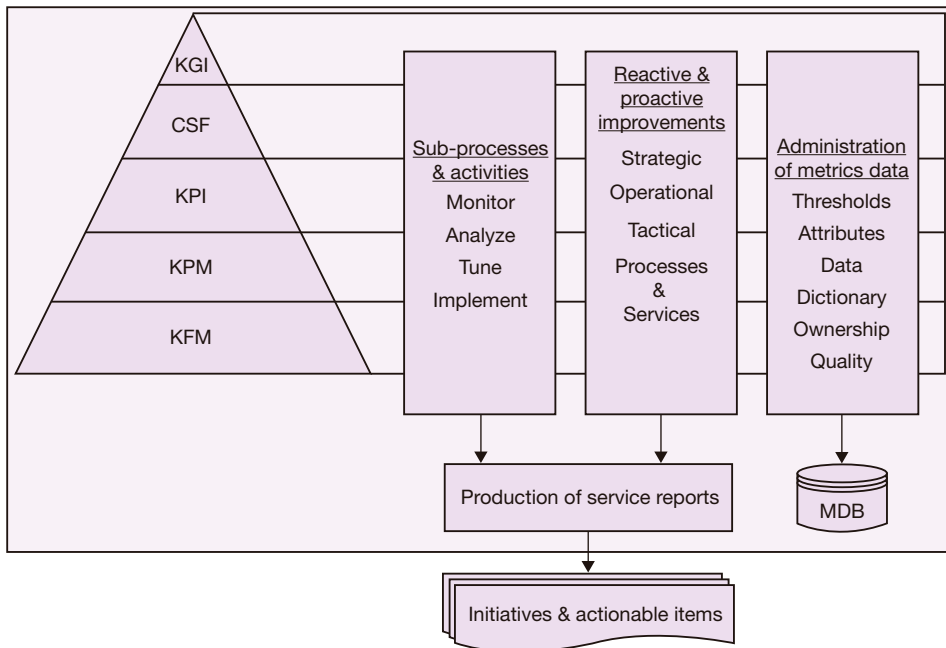


Figure 5 Measurement sub-process activities

Costs, benefits and possible problems

A well planned and implemented measurement program is one of the better investments an organization can make. Most mature organizations have well established measurement programs in their financial, human resources, sales & marketing and business operations departments where measurements are just common sense and part of the normal operating practices. Justifying the implementation of a measurement program will require examination of the costs, benefits and risks to determine the right scope and fit-for-purpose.

Costs

The first step is to estimate the project implementation costs and ongoing maintenance costs required for the measurement program.

Project implementation costs:

- **hardware and software** – metrics database, design and reporting tools
- **project management** - should be treated as a project
- **staff costs** – training and consultancy

Ongoing maintenance costs:

- hardware and software maintenance costs
- ongoing staff costs such as:
 - salaries
 - training
 - ad-hoc consulting
- storage
- upgrades
- licenses

Benefits

Measurements help improve performance, align goals and realize value. The positive benefits can be weighed against the negative consequences of not having a measurements program.

Benefits of a measurement program:

- provides the instrumentation necessary to control an organization
- direct focus on specific performance and control objectives
- easier to spot danger in time to correct it
- improves morale in an organization
- stimulates healthy competition between process owners
- helps align IT with the business goals and verify results
- drives efficiency, effectiveness and quality
- inspires continual improvements
- helps reduce Total Cost of Ownership (TCO)

Negative consequences of not having a measurements program:

- reduced visibility resulting in loss of control
- focus on “noise” instead of “what’s important”
- reactive fire-fighting mode
- low morale in organization
- unhealthy political competition
- benefits not apparent or realized
- cost effectiveness not understood
- customer complaints drive improvements
- TCO not optimized
- increasing risk

Effect on Total Cost of Ownership (TCO)

A measurement program can help reduce the Total Cost of Ownership (TCO). TCO was developed by Gartner and has become a key performance measurement for efficiency and effectiveness. TCO is the total cost of owning networked information assets throughout their

lifecycle, from acquisition to disposal. It is a measure of efficiency and cost effectiveness which can be reduced through improved IT processes and services. This entails improving the efficiency, effectiveness and quality of IT processes and services. Gartner's TCO studies revealed that the TCO for an average PC could range anywhere from \$6,000 to \$12,000 per user per year.

TCO measures both the “hard” and “soft” costs of information assets. Direct costs include items such as capital, operations and management costs. These costs are considered “hard costs” because they are tangible and easily accounted for. However, even more significant in many IT environments are the indirect or “hidden costs” related to user peer support, training and downtime. Because they don't occur at acquisition time, they are often overlooked in budgets. Ineffective performance causes a transfer of management and support responsibility to end users resulting in higher costs and dissatisfaction.

Figure 6 illustrates the TCO of technology assets throughout their lifecycle.

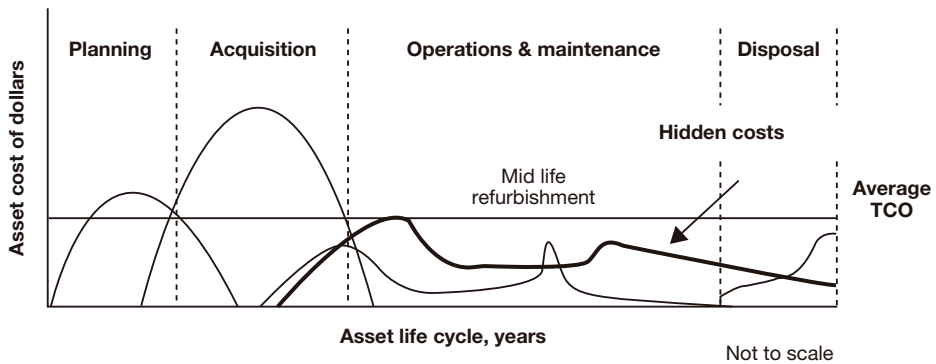


Figure 6 TCO cycle

Improving the efficiency of IT processes and services will positively impact the direct costs. Improving the effectiveness and quality of IT processes and services will positively impact the indirect or hidden costs.

Possible problems

Potential problems can be identified, prepared-for and dealt-with in advance. The following provides a list of potential problems that could be encountered and their possible solutions:

1. **no senior management sponsorship** – increase management commitment
2. **metrics conflicting with organizational goals** – align metrics to goals
3. **lack of understanding** – increase communication and check interpretations
4. **too much or not enough detail** – assess which level is needed
5. **lack of education and training** – check what is needed and take action
6. **difficulty obtaining input data** – adjust time and resources available
7. **inadequate measurement tool** – improve MDB or add sub-systems
8. **unclear goals and objectives** – increase communication
9. **unclear roles and responsibilities** – identify stakeholders
10. **takes too long to demonstrate benefits** – create quick wins

Implementing a measurement program

You need to consider the following prior to implementing a measurement program:

- where to start
- why do it
- who to involve
- what are the steps
- when to expect results
- how to make it happen

The following sections provide general guidelines, questions to be answered, ideas and best practices to help answer some of these questions. In most cases, the planning and implementation approach must be tailored and fit-for-purpose for your organization. To develop the implementation plan for the measurement program, start with the following planning activities:

- review what already exists
- plan the approach
- implement the measurement process
- optimize the measurement process
- review and audit

Review what already exists

To review what already exists, you can conduct assessments, interviews or workshop meetings in order to answer the following questions (together with any of your own):

- Is there senior management commitment?
- Who is the implementation champion?
- Does a budget exist?
- Are resources available?
- Are the skills and knowledge in place?
- What is the culture and organization structure?
- What is the business and IT vision/strategy?
- Are measurement tools and technology already in place?
- Are there demands for "business as usual"?
- Which processes are in scope?
- What are the current and desired requirements of each process (scope, goals and objectives)?
- Which processes would most benefit from this program?
- Who are the ITSM process owners and key stakeholders?
- Who is the proposed measurement process owner?
- What is the maturity level of people, processes and tools?
- What metrics and targets are in use?
- What are the potential roadblocks?

Use the answers to these questions to formulate a list of gaps. This list can then be prioritized for the next step: plan the approach.

Plan the approach

The right approach for the organization depends on many variables, like:

- internal and external business drivers
- volume of change already taking place
- the readiness of the organization (list of gaps)

- senior management involvement
- resistance to change
- current workload
- skills and capability

Information from the initial review session can be used to select the best implementation approach. There are a number of questions to consider and answer:

- **Implementation phasing** – Are we going to implement one or more processes at the same time?
- **Structure of the measurement process and metrics** – Which processes and services will best help align IT with business goals and objectives?
- **Roles and responsibilities** – Who will be responsible and accountable for the measurement process?
- **Establishing policies and procedures** – Will new policies and procedures need to be considered?
- **Communication strategy and plan** – Who are the key stakeholders and what messages need to be crafted?
- **Data collection** – What data will be necessary for the measurement and metrics?
- **Establishing baselines** – How will the baselines be determined?
- **Setting targets and thresholds** – How will targets and thresholds be determined?
- **Storage of metrics data** – Where and how will the metrics data be stored?
- **Monitoring the metrics** – How will the metrics data be monitored?
- **Performance analysis** – How will the performance of the metrics be analyzed?
- **Performance tuning** – What are the criteria for conducting performance tuning?
- **Service improvement initiatives** – What is the selection process for improvement initiatives?

Implement the measurement process

Implementing the measurement process is best treated as a project. It should complete at least one process lifecycle before being transferred to operations. The high level steps are outlined as follows:

- train staff
- conduct the initial planning phase
- initiate communications plan
- create, install and configure MDB
- design, install and configure dashboards, scorecards, KGIs, CSFs, KPIs, KPMs and facts
- establish monitoring
- analyze results
- produce reports
- process tuning
- initiate service improvements
- transfer control to operational staff
- audit and review for compliance, effectiveness, efficiency and quality

This should be customized to meet organizational requirements

Optimize the measurement process

The measurement process should be reviewed internally for effectiveness and efficiency at regular intervals. This should help determine areas for improvement and optimization. The review should assess and report on the following subjects:

- if measurement program goals, CSFs and objectives are being met
- the quality of information (completeness, accuracy, validity)
- whether benefits have been realized and communicated
- the cost effectiveness of the measurement program
- the satisfaction of the users of the measurement program

Furthermore, service improvement initiatives should be assessed and recommended.

Based on the assessment and review of the measurement process, recommendations should be acted upon for improvement and optimization of the measurement process. These should include:

- where to initiate measurement program improvements
- when to add new or improved processes
- what to update (core attributes, targets, thresholds, benchmarks)
- what to automate (data collections, reporting)
- how to improve reporting and communications

Review and audit

Like all ITSM processes, the measurement process should be reviewed for compliance, effectiveness, efficiency and quality. Audits should be performed by an independent person or group rather than the measurement process owner or manager. The general intent of the review and audit is to determine:

- what was done right
- what went wrong
- what could be done better next time
- how to prevent issues from happening again
- the causes of the issues that occurred
- how we can learn from experiences and improve

Measurement program reviews and audits should be considered at the following times:

- shortly after implementation of a new measurement system
- before and after major changes to the measurement process
- at random intervals
- at regular intervals

Reporting techniques

The data gathered in the monitoring phase of the measurement process should be analyzed. A report on the information acquired should be given to the proper (management) audience. There are many techniques for the effective reporting of metrics. At the lowest level, classification of measures by themes helps improve reporting. Trending of individual metrics provides detailed information to operational management about the state of the process or service activities. Using aggregation methods, metrics are classified and grouped together by themes for process owners and senior management to determine the health of a process or service. At the highest level, using dashboards and scorecards, reporting techniques can help to visualize the end-to-end process or service in order to quickly determine value realized and opportunities for improvement. This section discusses some commonly used techniques.

Classification of measures

Measures can be grouped by themes and classified to produce strategic and tactical types of key indicators and metrics. Classification is a method of categorizing measures into groups that help steer, control, direct, justify, verify, correct and optimize value. Some examples of classification are as follows:

- **Key Goal Indicator (KGI)** - A KGI is used to confirm (after the fact) that a business or IT goal has been achieved.
- **Critical Success Factor (CSF)** - A CSF is a business term for an element which is necessary for an organization to achieve its mission.
- **Key Performance Indicator (KPI)** - KPIs are metrics used to quantify objectives to reflect the performance of a process or service.
- **Key Performance Metrics (KPM)** - Key performance metrics are a system of parameters or ways for undertaking the quantitative and periodic assessment of a process or service that is to be measured.
- **Key Fact Metrics (KFM)** - Key fact metrics are the quantitative data which provide fact-based information on the process activities during a period of time.

Figure 7 illustrates the classification of metric themes and their relative impact, from the tactical to the strategic level.

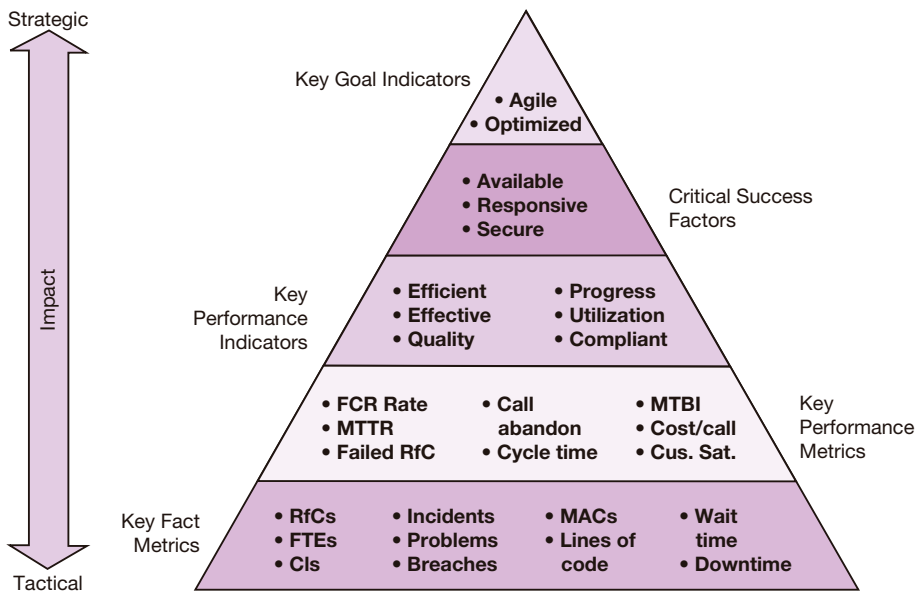


Figure 7 Sample classification of measures

Trending

Monitoring and reporting trends of individual metrics helps identify potential problem areas within a process or service. Trending helps pinpoint the hot-spots or weak links throughout the process or service. It typically includes monitoring the inputs, activities and outputs of the process over time. Thereby, it indicates variations over time and whether these variations are moving in the desired direction (better or worse). It also shows if improvements are required and if corrective actions are making a difference. Trending can be used to trigger alerts to

the metric owner. This person should then initiate a set of prescribed corrective actions or remedies. Figure 8 provides an example trending report for an incident management metric.

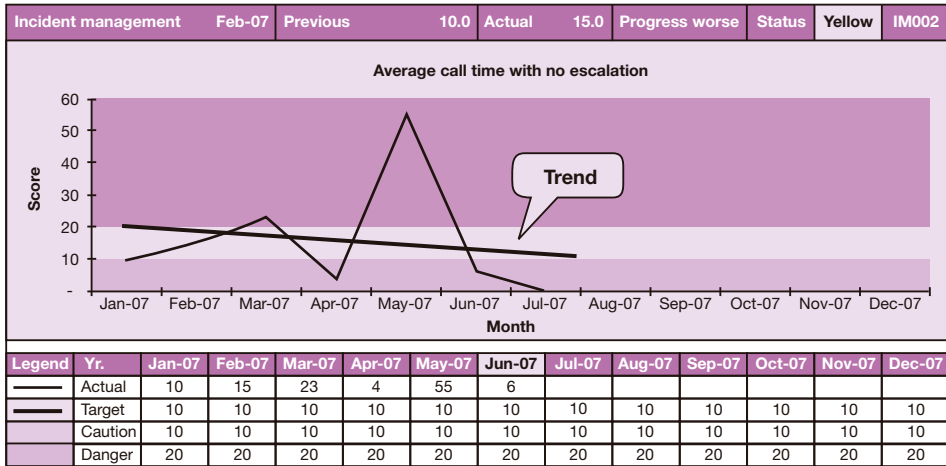


Figure 8 Sample trending report

Aggregation of metrics

Metrics can be aggregated together using indexing techniques. Then, they can be viewed as a group-theme to create key performance indicators. For example, a key performance indicator for quality may require looking at defect rates throughout the process and include the reported level of customer satisfaction. Figure 9 provides an example of quality for the change management process.

Alignment of key measures

Aligning the key measures requires a top-down view of what is important to the organization and its stakeholders. Then, a bottom-up build of the facts, metrics and indicators to support the desired outcomes. Executive management is most interested in executing strategy and vision to meet the goals and objectives. For them, KGIs, CSFs and KPIs that support strategy attainment are most important. Senior management are concerned with justifying, directing and controlling process and service delivery to meet the strategy and vision requirements. They need KGIs, CSFs, KPIs and KPMs that support operational excellence. Managers and staff are focused on process and service delivery execution, within the guidelines specified by senior and executive management. CSFs, KPIs, KPMs and KFM help them tactically to stay-the-course, see figure 10.

Dashboards

Dashboard reporting helps provide the instrumentation for management control. Summarized and visual in nature, dashboards make it easier to concentrate on what's important. Dashboards can also identify successes and problem areas at a glance. Dashboards can be configured and personalized to provide strategic, operational and tactical views of the organization, technology, processes, services and activities. For example, Figure 11 provides an example overview of performance, goals, benefits and initiatives for all IT service management processes.

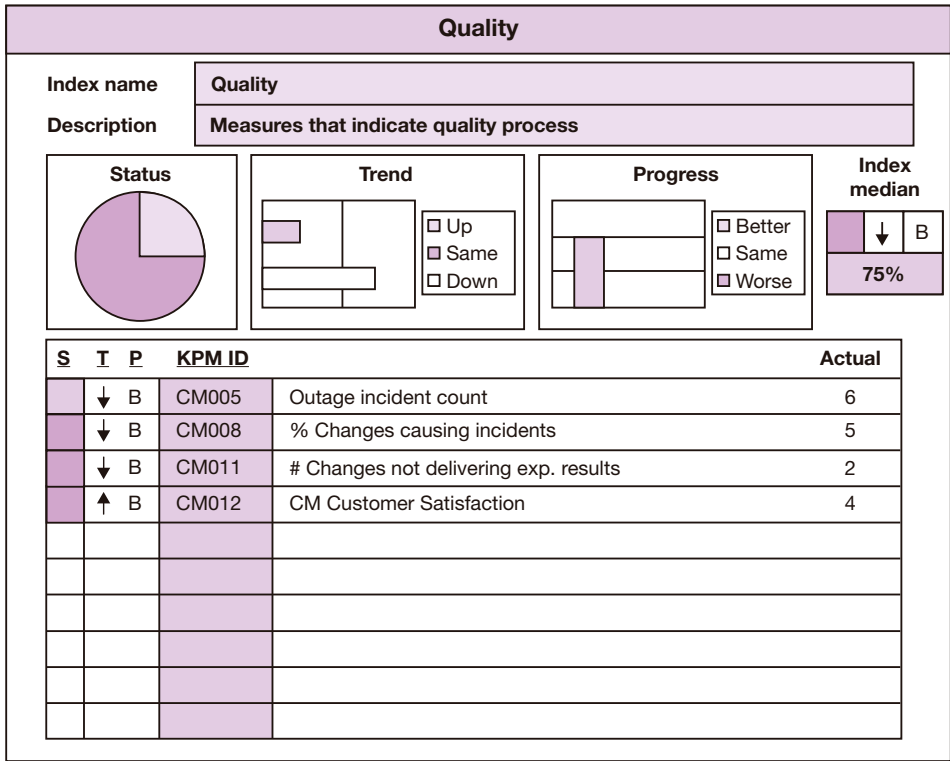


Figure 9 Sample aggregation of metrics

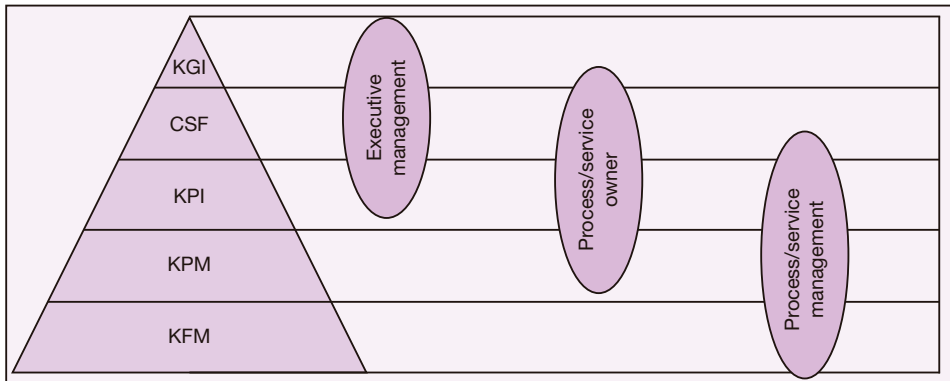


Figure 10 Alignment of key measures

Role-based dashboards

Role-based dashboards help make it easier to view, map and align relevant information by role. Figure 12 provides an example of mapping strategic information for a CIO, summarized IT service management results for senior IT management and specific process- and service-based results by process and service owners.

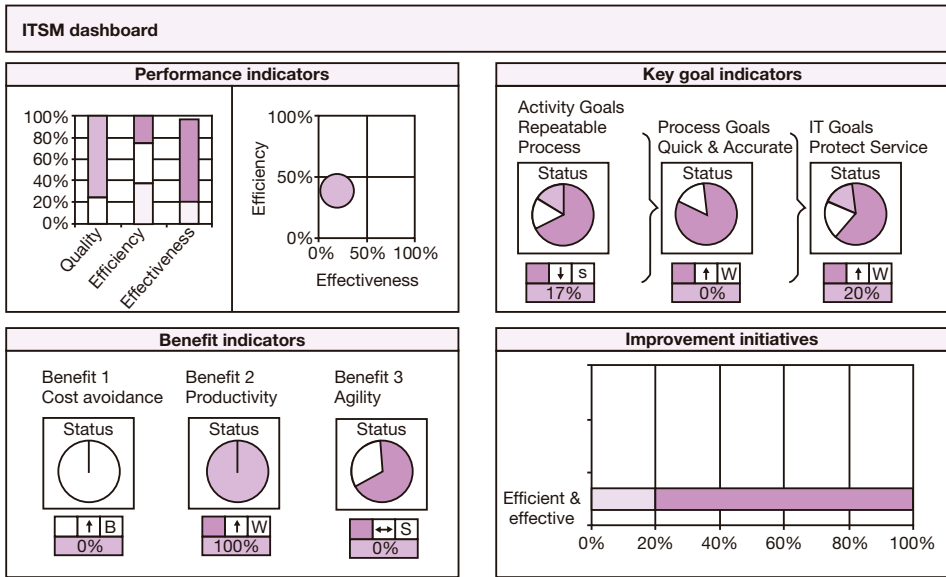


Figure 11 Sample ITSM dashboard report

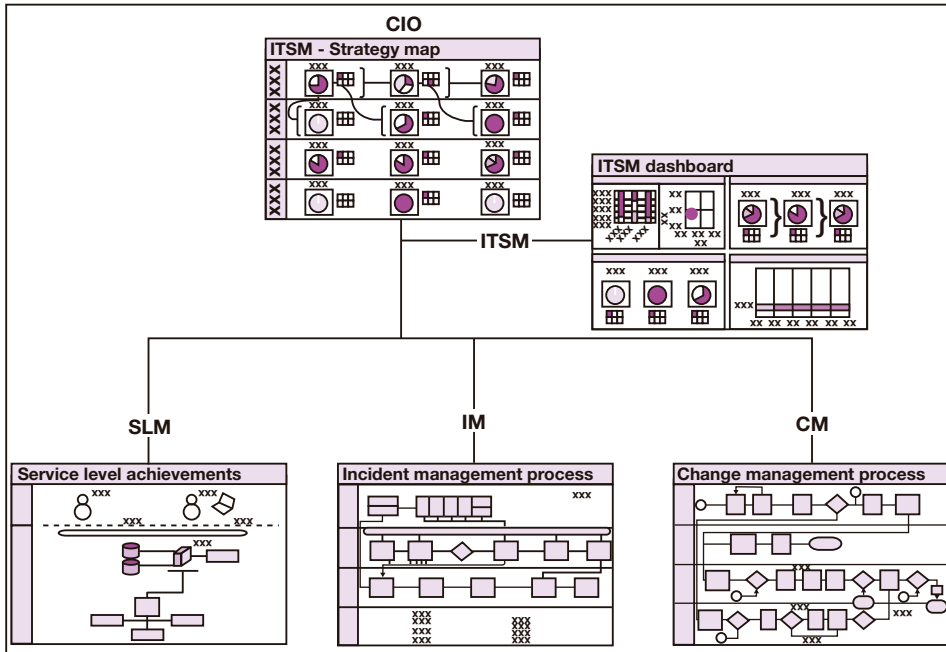


Figure 12 Sample roles-based dashboard hierarchy

Balanced scorecards

The balanced scorecard (BSC) is a methodology developed by Robert Kaplan and David Norton (1992). The balanced scorecard helps translate the organization’s strategy into performance objectives, measures, targets and initiatives. This popular methodology

prescribes breaking the strategy down into perspectives using cause and effect linkages; then developing and using objectives, measures and initiatives to support each perspective. Figure 13 provides an example of four BSC perspectives.

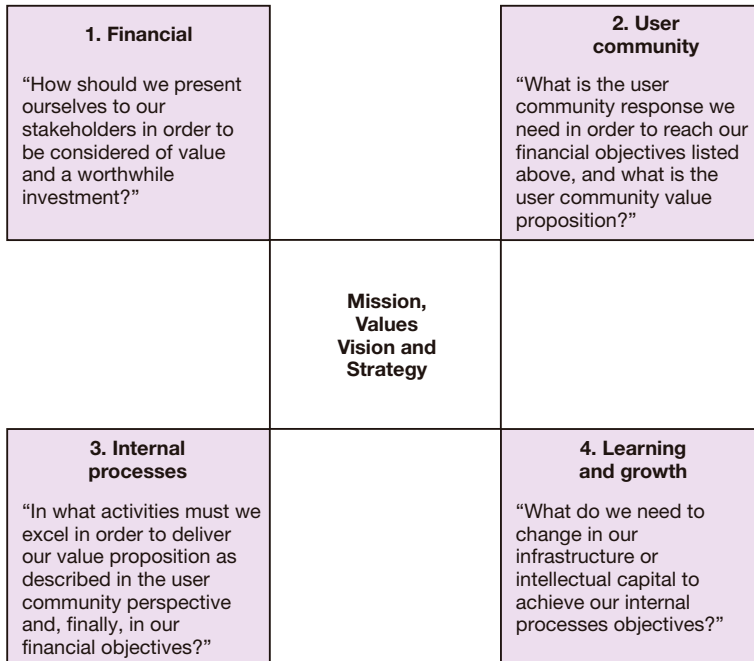


Figure 13 Sample BSC perspectives

General scorecards

General scorecards are used to present specific and summarized information by groups, themes or initiatives. Figure 14 provides an example of a series of scorecards related to a performance theme.

Cascading of scorecards

Using a cascading approach, scorecards should be designed top-down with the business goals and objectives in mind, then built bottom-up. This approach clarifies cause-and-effect linkages and helps ensure there is alignment and cohesiveness from top to bottom, see figure 15.

Strategy maps

Strategy maps are another form of a scorecard. They visually display the cause-and-effect relationships necessary to achieve the organization’s vision and mission. Figure 16 provides an example of a strategy map designed to increase the value of IT to the business.

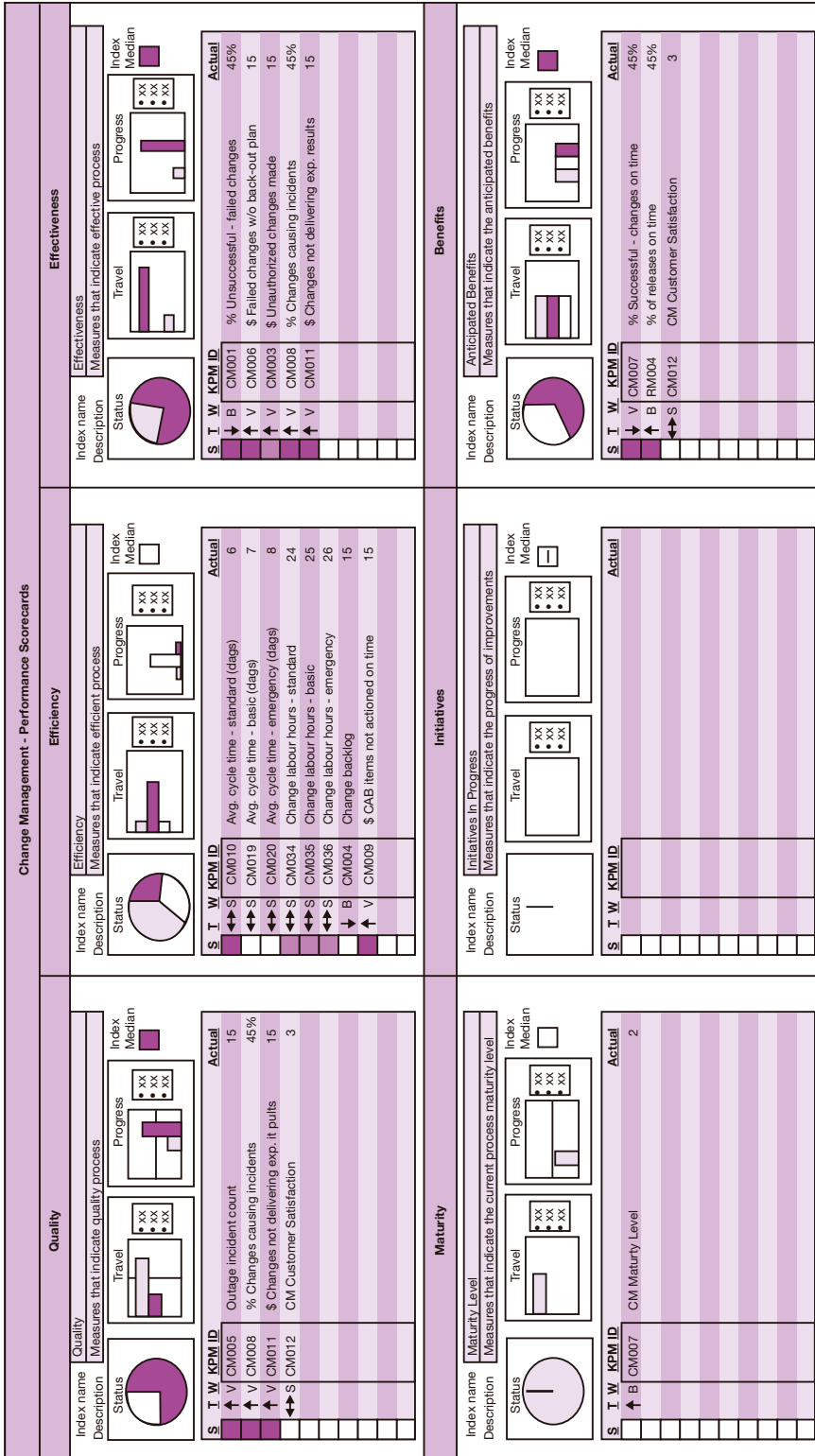


Figure 14 Sample general scorecards by themes

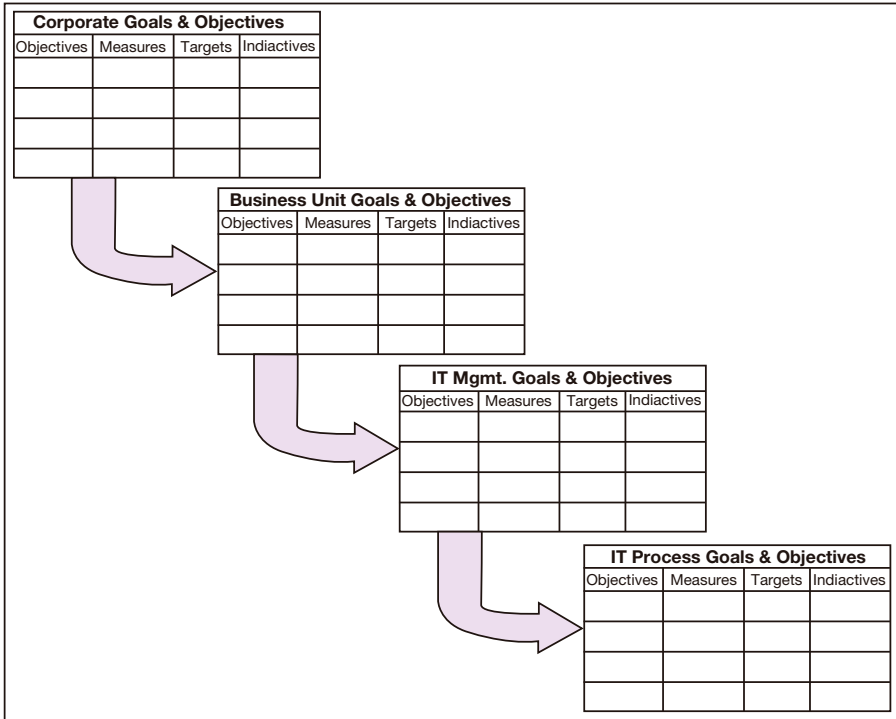


Figure 15 Cascading of scorecards

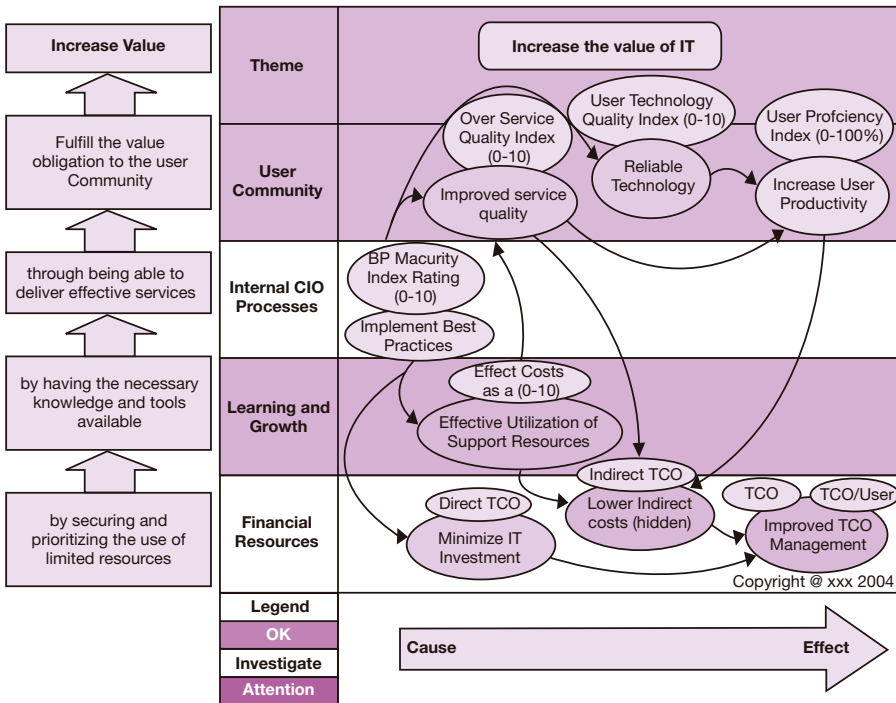


Figure 16 Sample strategy map for IT

Process map scorecards

Process map scorecards are another type of scorecard which help to:

- summarize the health of a process or service
- steer and control the process or service
- pinpoint hot-spots requiring attention
- predict where areas of improvement are required

Process map scorecards help view an end-to-end process or service as a whole. They are process- or service-centric regardless of who is responsible for the individual tasks or activities. Figure 17 provides an illustration of a process map scorecard for a change management process.

Summary

Implementing a measurement framework should help align IT with the business objectives and create value through continual improvements. It helps us to create a roadmap and keeps us from getting lost.

The measurement framework acts as the map; meeting the business goals and objectives are the destination, the critical success factors provide the directions and the metrics provide the sign posts to keep you on course.

The measurement framework presented by this article helps determine ways to:

- align IT with business objectives and verify results
- maintain compliance requirements for business operations
- drive operational efficiencies, effectiveness and quality

The framework is based upon Deming's continual improvement cycle, and comprises the following phases:

- **Tuning (Plan)** - The tuning sub-process is responsible for identifying improvement opportunities and recommendations for the subject process or service which is being measured.
- **Implementation (Do)** - The implementation sub-process is responsible for implementing the recommended changes through normal change management processes. As discussed, this phase contains the following sub-phases:
 - review what already exists
 - plan the approach
 - implement the measurement process
 - optimize the measurement process
- **Monitoring (Check)** - The monitoring sub-process is responsible for the data gathering, calculations and validation of the required measurements.
- **Analysis (Act)** - The analysis sub-process is responsible for comparative, causal and predictive analysis of the measurements to determine what corrective actions may be required.

After gathering and analyzing data, we should administer the information gathered and report on it. Commonly used reporting techniques that might be used for this are:

- classification of measures
- trending
- aggregation of metrics
- alignment of key measures

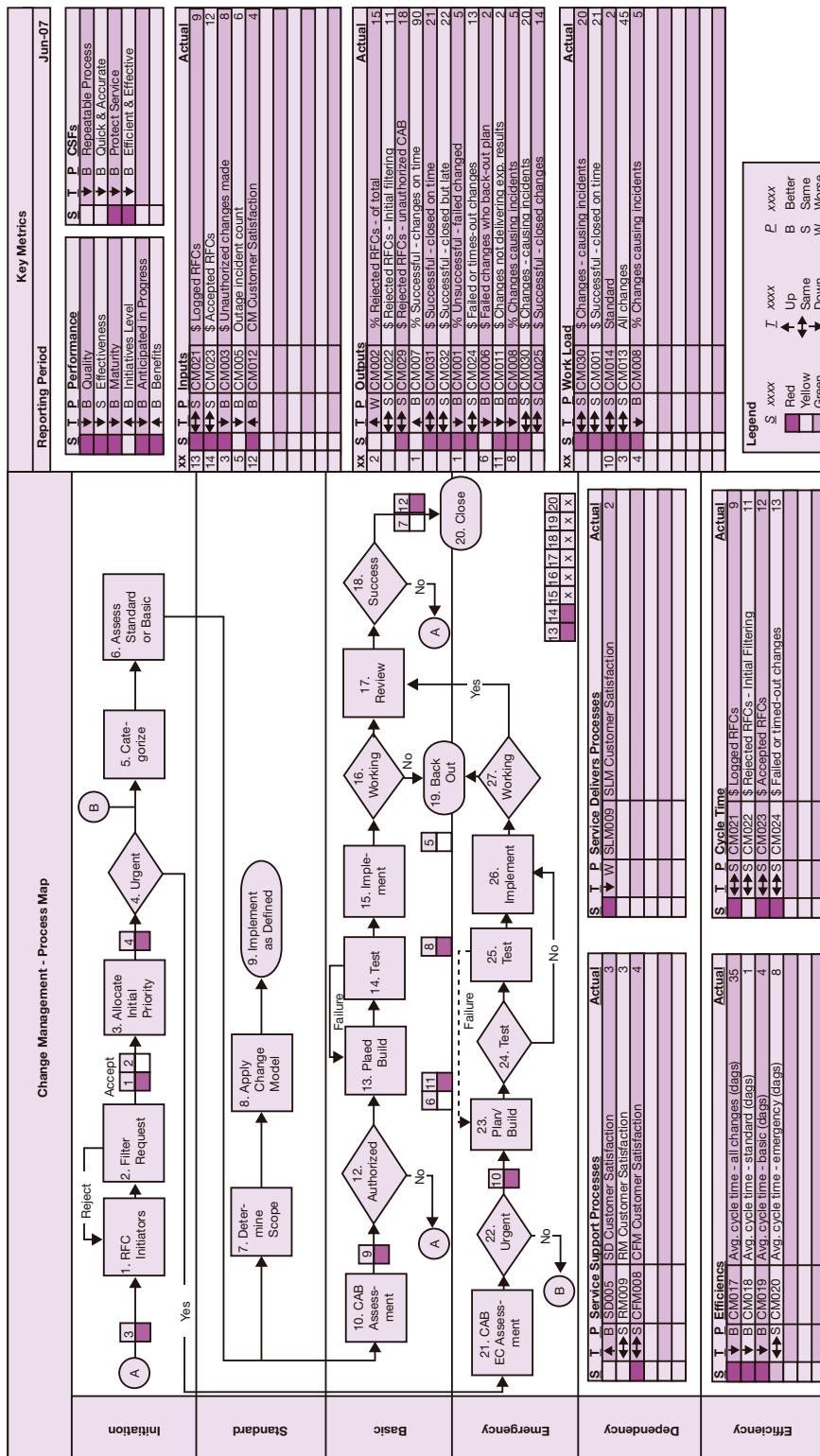


Figure 17 Sample process map scorecard

- dashboards
- role-based dashboards
- balanced scorecards
- general scorecards
- cascading of scorecards
- strategy maps
- process map scorecards

The measurement framework can be implemented as a comprehensive measurement program for all processes and services, or selectively for individual process or services.

Each organization may use this approach and the techniques discussed to create its own tailor-made measurement framework to improve its performance.

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REFERENCES

- Brooks, P. (2006). *Metrics for IT Service Management*. Zaltbommel: Van Haren Publishing.
- Deming, W. E. (1986). *Out of the Crisis*. Cambridge (MA, USA): MIT Center for Advanced Engineering Study.
- Kaplan, R., & D. Norton (1992). The Balanced Scorecard—measures that drive performance. *Harvard Business Review*, Vol. 70, No. 1, 71-79.
- Shewhart, Walter Andrew (1980). *Economic Control of Quality of Manufactured Product/ 50th Anniversary Commemorative Issue*. Milwaukee (USA): American Society for Quality.
- Smith, D. (2008). *Implementing Metrics for IT Service Management*. Zaltbommel: Van Haren Publishing.