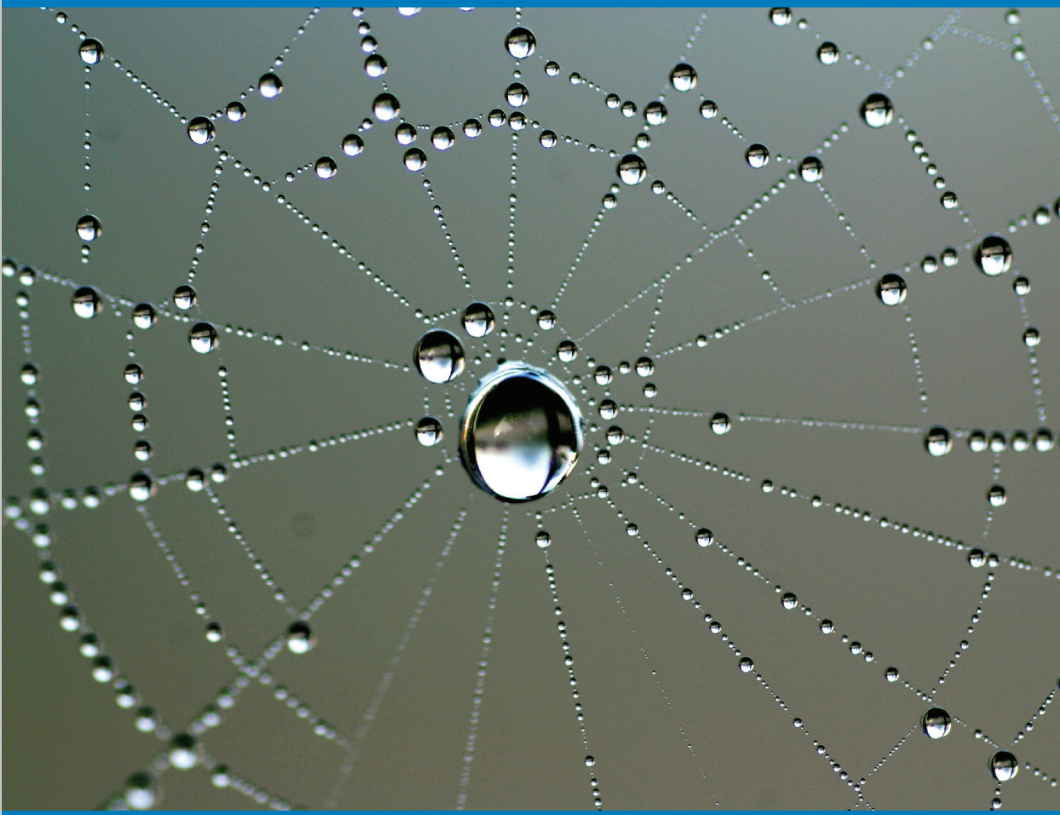
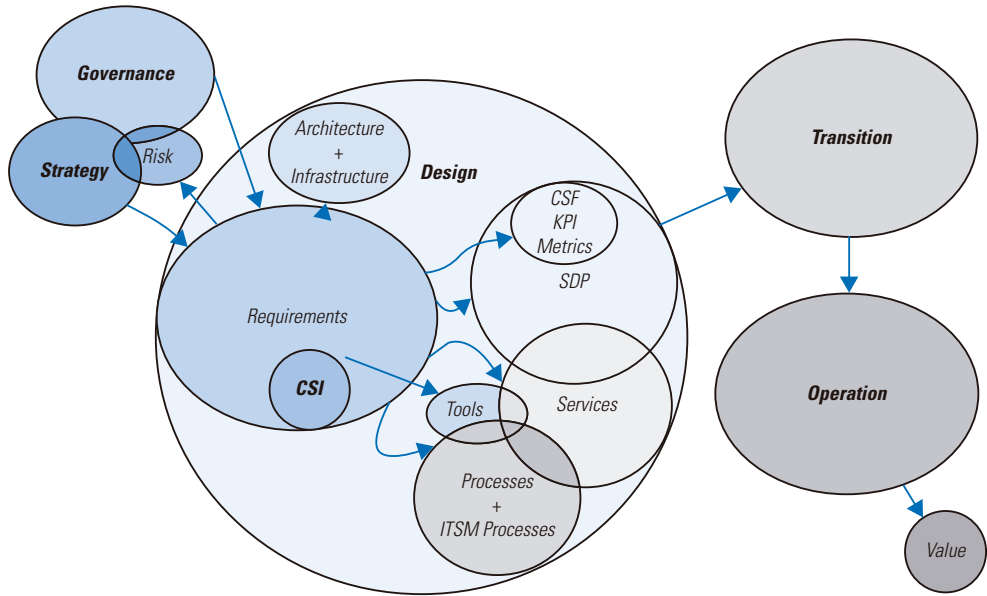


Metrics for Service Management

Designing for ITIL®



Metrics for Service Management



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Metrics for Service Management: Designing for ITIL®



Colophon

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1 Introduction

This book is designed to be practical; it avoids diagrams, process flows and detailed definitions where these are obvious. What managers need is a view of the goals and objectives of a project or program, and then an understanding of what methods, tools, resources, processes and so on are required to get it working. This book is primarily about design – the design of metrics for Service Management, which includes designing end-to-end service metrics. To measure services end-to-end, it is necessary to design process metrics, including Service Management process, technical and other supporting metrics.

1.1 Background knowledge

Ideally the reader of this book will already be familiar with Service Management, ITIL®, and ISO/IEC 20000 as well, perhaps, as PRINCE2, M_o_R and, perhaps, ISO/IEC 15504 (SPICE), CMMI, Six Sigma, Cobit and other relevant areas. The book only includes the smallest possible top-level introduction to any of the above for those readers who might not be familiar with a particular area. Anybody intending to achieve a level of maturity in Service Management is advised to read the books recommended in the bibliography - in particular, the five ITIL® lifecycle books - and to take a structured approach to professional development.

If you have not worked with metrics before, then it would be worthwhile reading the first chapters of this book to avoid some of the more common and dangerous pitfalls. Even if you have worked with metrics, it is probably wise to review these, as mistakes can be subtle and difficult to rectify later. Designing metrics is not simple or quick – if it seems so, then the metrics are likely to be at best inadequate and, at worst, dangerous and counter-productive.

Many organizations have suffered from severe unexpected consequences - directly as a result of applying metrics that were easy to measure and control, but not actually in line with business requirements. A well known example was the use of one metric ‘waiting list time’ to define improvements to the UK National Health Service – the result was that everybody met the metric, but the actual waiting lists remained, or, in fact, became longer and less fair. The overall result was a reduced quality of service and increased dissatisfaction even as the metric was reported as a success.

1.2 How to use this book

Mostly this book is designed to be used as a practical tool during workshops:

- Where services, business and technical, with their processes, are designed.
- Where organizational improvement must be addressed urgently.

- Where a merged, or re-organized, service delivery team can decide what measures can enable results to be achieved quickly to support longer-term improvement and deviations measured accurately.

Use this as a tool, for guidance. If a suggestion suits you, use it. If you need to modify it for your own situation, go ahead; this is not supposed to be a stone tablet! If you've got a tricky issue to discuss, take it along, so you can explore some possible metrics – at least that should provide a common starting point for discussion and, maybe, some ideas for ways forward.

The layout is uncluttered, designed to be easy to navigate quickly – to find an idea, for example, during a meeting. Where possible, repetition is avoided.

Each metric described includes a paragraph giving some context. This is a reminder that metrics do not stand in isolation. Often this context will include warnings of possible misinterpretation, and suggestions for refining the metric. With any luck, in the heat of the moment, these will be some of the most helpful parts. They're better read when actually designing a metric, rather than all the way through.

All metrics should include, for example, a RACI (Responsible, Accountable, Consulted, Informed) matrix to allow proper design of the metric to include the people accountable for it being achieved, those responsible for measuring and managing it and those consulted about its design, improvement or interpretation as well as those informed, through reports, dashboards, alerts or other means.

The Appendix contains the full form for recording a metric. Space does not permit the inclusion of all this detail for all metrics, so only the main descriptors of each metric appear in a table at the end of each chapter. The full set of electronic metrics is best used electronically, as an on-line Metrics Register that links to your Requirements, Continual Service Improvement (CSI) and Risk Registers and to the relevant Service Design Packages.

The flow of the book is contained in Figure 1.1 below. Notice that Design forms a major part of the book.

The book is organized as follows:

- *Introduction (this chapter), explaining the purpose and structure of this book*
- *Managing, metrics and perspectives: key principles of metrics*
- **Governance:** *the metrics required for effective governance*
- **Service Strategy:** *the metrics required for the first phase of the service lifecycle*
- **Service Design:** *the metrics required for the second phase of the service lifecycle*
- *Chapters exploring Service Design-related topics in more detail:*
 - *Classifications of metrics*
 - *Outsourcing and emerging technologies*
 - *Cultural and technical considerations*
 - *Tools and tool selection*

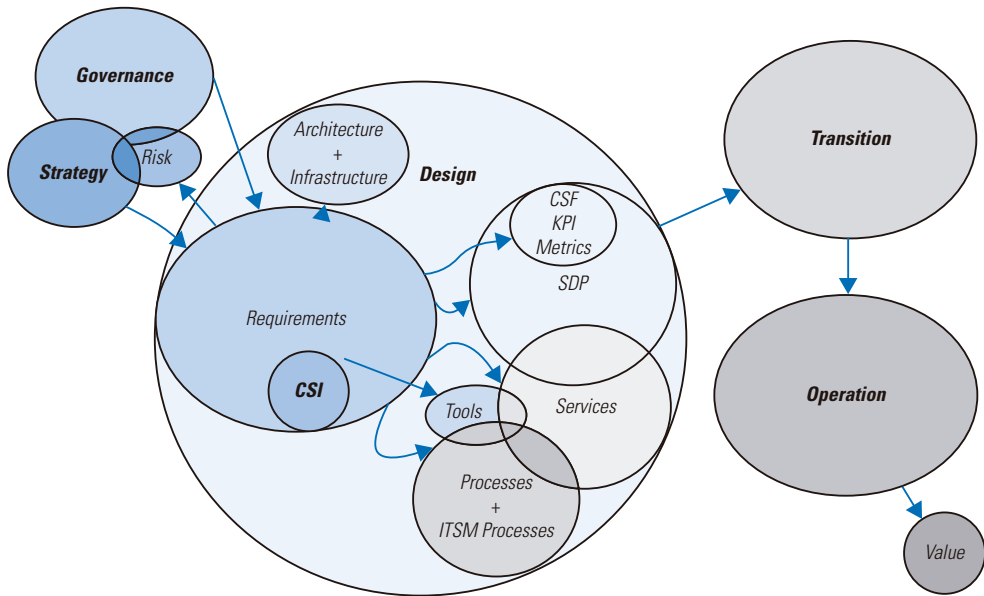


Figure 1.1 Metrics book topic flow

- **Service Transition:** the metrics required for the third phase of the service lifecycle
- Chapter exploring Service Transition-related topic in more detail: Service Transition and management of change
- **Service Operation:** the metrics required for the fourth phase of the service lifecycle
- **Continual Service Improvement:** the metrics required for the final ongoing phase of the service lifecycle
- Appendices]

The ultimate aim of Service Management is to produce Value; this is delivered during Service Operation and measurements facilitate in the definition and scoping of Continual Service Improvement. Corporate Strategy and Governance give rise to new requirements that drive the design of Services, Processes and Metrics. The design of metrics is critical to assuring the efficacy of the Service Lifecycle processes and in governing the delivery of value.

2 Managing, metrics and perspective

2.1 Managing

As with a lot of *folklore*, there are wise sayings on both sides of the question about how to use metrics as part of management:

‘You can’t manage what you can’t measure’ [attributed to Tom DeMarco developer of Structured Analysis]

‘A fool with a tool is still a fool’ [attributed to Grady Booch, developer of the Unified Modeling Language]

Both of these are true. Managing requires good decision-making and good decision-making requires good knowledge of what is to be decided. ITIL®’s concept of Knowledge Management is designed to avoid this pitfall.

2.2 Perspective

Relying simply on numbers given by metrics, with no context or perspective, can be worse than having no information at all, apart from ‘gut feel’. Metrics must be properly designed, properly understood and properly collected, otherwise they can be very dangerous. Metrics must always be interpreted in terms of the context in which they are measured in order to give a perspective on what they are likely to mean.

To give an example: a Service Manager might find that the proportion of emergency changes to normal changes has doubled. With just that information, most people would agree that something has gone wrong – why are there suddenly so many more emergency changes? This could be correct, but here are some alternative explanations of why this is the case:

- If the change process is new, this may reflect the number of emergency changes that the organization actually requires more accurately. Previously these changes might have been handled as ordinary changes without proper recognition of the risk.
- In a mature organization, a major economic crisis might have intensified the risk of a number of previously low-risk activities. It would be the proper approach for the Service Manager, recognizing changes related to these, to make them emergency changes.
- The change management process might have been improved substantially in the current quarter, so much so that the number of ordinary changes that have been turned into standard changes has led to a halving of the number of normal changes.

The number of emergency changes has stayed exactly the same, but the ratio is higher because of the tremendous improvement in the change process.

Even a very simple and apparently uncontroversial metric can mean very different things. As with most management, there is no ‘silver bullet’. Metrics must be properly understood, within context, in order to be useful tools. To ensure that they are understood, metrics must be designed. For best results, service metrics should be designed when the Service itself is designed, as part of the Service Design Package, which is why the ‘Design’ section in this book is the largest.

The metric template used in this book includes the field ‘Context’ specifically to allow each metric to be properly documented so that, when it is designed, the proper interpretation and possible problems with it can be taken into account. The design of a metric is not simply the measure and how it is taken; it must also make it clear how it will be reported and how management will be able to keep a perspective on what it means for the business - particularly its contribution to measuring value.

This is also a reason why the number of metrics deployed must be kept as small as possible (but not, as Einstein put it, ‘smaller’!). Metrics must also be designed to complement each other. In the example above, the ratio between emergency and normal changes is an important and useful one to measure, but it could be balanced by measuring the number of standard changes, the business criticality of changes and, perhaps, the cost of changes.

These would all help to embed the metric into a context that allows proper interpretation.

2.2.1 Metrics for improvement and performance

Metrics are needed not only to identify areas needing improvement, but also to guide the improvement activities. For this reason, metrics in this book are often not single numbers, but allow discrimination between, for example, Mean Time To Repair (MTTR) for Services, Components, Individuals and third parties – while also distinguishing between low priority incidents and (high priority) critical incidents. The headline rate shows overall whether things are improving, but these component measures make it possible to produce specific, directed improvement targets based on where or what is causing the issue.

Metrics are often used to measure, manage and reward individual performance. This has to be handled with great care. Individual contributions that are significant to the organization may be difficult to measure. Some organizations use time sheets to try to understand where staff are spending their time, and thus understand how their work is contributing to the value delivered. These tend to be highly flawed sources of information. Very few individuals see much value in filling in timesheets accurately, and those that do see them as useful find them inadequate records for capturing busy multi-tasking days.

There is a less subjective method – that of capturing the contribution of individuals and teams as documents in the Service Knowledge Management System (SKMS). For this to work, a good document management system with a sound audit trail is required, along with software that will identify what type of documents have been read, used (as in used as a template or used as a Change Model), updated (as a Checklist will be updated after a project or change review) or created (as in a new Service Design Package (SDP) or entry in the Service Catalogue). Each type of document update can be given a weight, reflecting the value to the organization (a new SDP that moves to the state ‘chartered’ is a major contribution, while an existing Request for Change (RFC) that is updated to add more information on the risk of the change would be a minor contribution).

Properly managed, such a scheme can give a very accurate and detailed picture of where in the Service Lifecycle work is being done, so missing areas (for example, maybe there are not enough Change Models being created) can be highlighted and the increased weighting communicated to the organization. If these measures are properly audited they can be used as incentives for inter-team competition as well as for finding the individuals worth singling out for recognition and reward. Being an objective system this form of reward, based on the actual contribution to value delivered, can be highly valued, even by very technical and senior staff, as well as being an incentive (and measure of progress) for new or junior staff.

In certain circumstances, external contracts particularly, penalty clauses may be required. Ideally these should be set so they are not triggered by minor deviations that can swiftly be remedied. Also, ideally, positive incentives should cover most of the relationship, with penalty clauses kept as a last resort. If penalty clauses are invoked frequently, then the business relationship is likely to, eventually, break down – before this happens, it would be wise to change supplier or have a fundamental reevaluation and renegotiation of the contract to avoid this situation.

2.2.2 Metrics from the top downwards

Metrics can be understood to work from the top downwards. Business measures (such as profit, turnover, market share, share price, price/earnings ratio) are the ultimate measures of success and all other metrics should, ultimately, contribute to the success of these metrics. Service Management identifies services; some deliver business results directly, some contribute indirectly. These can be measured by Service Metrics. Business services and internal services often depend on processes for their proper operation, and these can be measured by Process Metrics. Services and Processes rely on the underlying technologies that deliver these, and these can be measured by technology processes. Ideally, the sequence is Business Measure <- Service Measure <- Process Measure <- Technology Measure. Some metrics have value outside this direct relationship, but, where possible, metrics should be evaluated for how well they contribute to this value chain.

For the above to work, metrics, of whatever sort, must be designed as an integrated part of the design of any Service, Process, or Technology.

2.3 Full metric description

Useful metrics are more than just measures. A well defined metric should also have, these attributes (Description, Dependencies, Data)

- Be under Change Control in the Metrics Register
- Have a name/ID
- Have a unique reference
- Have an owner
- Have a version number
- Have a category eg:
 - Business Metric
 - Service Metric
 - Process Metric
 - Technology Metric
- Show Status (with transition dates and times) eg:
 - Created
 - Design phase
 - Approved/Rejected
 - Chartered
 - Testing
 - Operational (Not Active, No Data, Green, Amber, Red, Retired)
 - Retired
- Have secure access control
- Leave a clear audit trail
- Link to the Strategic, Tactical and/or Operational goals they support
 - If a KPI link to the CSF
 - Link to Business Objective
 - If Service link to Service Level Agreement (SLA)/Operational Level Agreement (OLA)/Underpinning Contract (UC) and Service Design Package (SDP)
 - If technical link to Operations Plan
- List the Requirements they measure
- List the relevant Stakeholders (RACI)
- Link to the process, procedure or activity they monitor
- Link to Test Plan
- Define the monetary value contributed
- Link to any Certification (eg ISO/IEC 20 000) they support
- Link to the relevant part of the Communication Plan(s) they serve
- Indicate the control loop operating them
 - Thresholds
 - Targets
 - Monitoring schedule
 - Norms
 - Action when over threshold (automatic or manual)
- Link to where they are benchmarked
- Link to their Service Improvement Plan (SIP) in the CSI Register

- Have Description
- Have a Formula defining it
- Link to data gathered
- Link to alerts
- Link to any relevant Incidents, Problems, Changes or Releases

A possible layout is included in the Appendix, with examples of how this works. The book uses the ID, description and formula for metrics, rather the full detail, to save space.

2.4 Goals, Critical Success Factors (CSFs) and Key Performance Indicators (KPIs)

A Critical Success Factor (CSF) is what it says it is – ‘Critical’. The easy test to see if something is a CSF is to ask: “If this doesn’t work, will the service have failed?” So to understand what the CSFs are, it’s important to establish what the goals are. Once CSFs have been established, then appropriate Key Performance Indicators (KPIs) must be developed to measure them – noting that one CSF may need a number of KPIs. Note that a KPI is not just a metric; it is a metric with a specific threshold value (the Indicator) above, or below, which the CSF is impacted.

For example: The goal of an automated teller machine (ATM) cash system is to dispense money. An ATM provides money and receipts. Availability of money is a CSF: an ATM that can’t give you money, the right amount, when you need it, is useless. A receipt is not a CSF because you can usually do without it.

You can usually say what your CSFs are (in the SDP) quite easily. Finding KPIs that measure them is a much more difficult job.

Thinking of the ATM example, and the CSF of providing money, here are some possible KPIs (all measured as an average percentage over all ATMs, and, for each ATM as a deviation from the average):

- percentage of time ATMs run out of money
- percentage of time an ATM customer gets the wrong amount of cash
- percentage of time an ATM customer gets forged banknotes
- percentage of time an ATM customer gets mugged within 15 minutes of drawing cash from an ATM

In each of the above cases, the ATM service may have failed the customer. In the first case, we don’t know how many customers have been let down. We could estimate it from the average number of customers expected at that ATM at that time of day, time of the month and time of the week (we’d need to measure all of these to make a reliable estimate). Or we could, perhaps, measure how many customers approach the

ATM and turn away – we'd need a camera fitted to the ATM to measure that, and somebody to examine the footage.

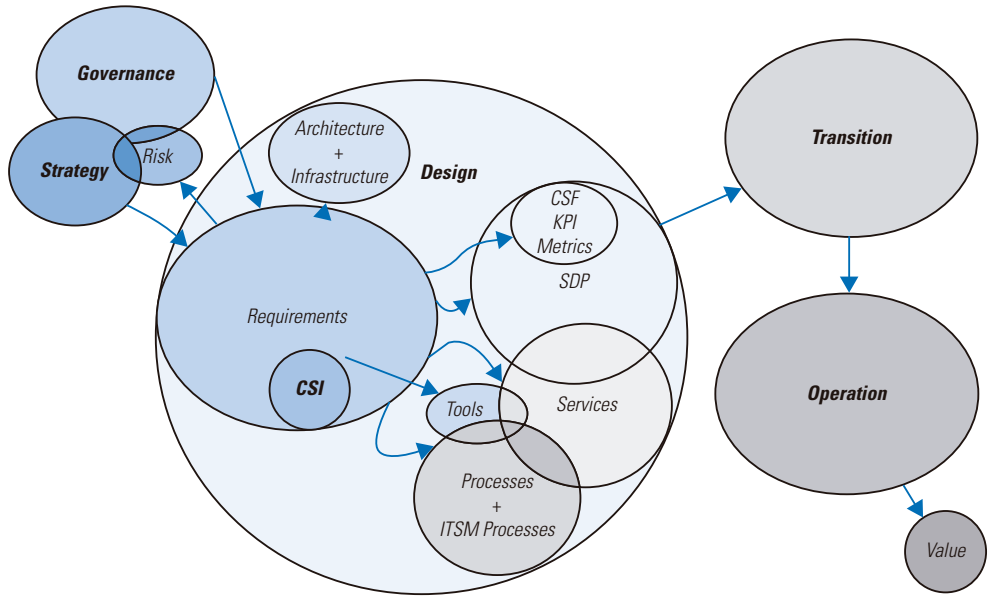
In the fourth example, we might think it isn't the business of the ATM service to provide security for customers for 15 minutes after they've drawn money – but measuring this would allow the bank to close ATMs in dangerous areas (where this measure is >1 per month, say), and/or install security cameras and guards to reduce the risk. These measures could enable the KPI to be revised downwards as well as the customer satisfaction to be increased

The point of this example is to show how to think of the interaction of CSFs and KPIs, to understand that there are likely to be a number of KPIs required to measure just one CSF

It's also important to realize that CSFs are defined in the SDP. Part of the job of designing a service is to decide what KPIs need to be measured – and then designing means of measuring those KPIs. If you look at the ATM example above, the KPI about forged banknotes might be very difficult to measure, as customers may only discover that a banknote is forged quite some time later – in fact the forged banknote might travel through a few hands before anybody realizes that it is forged. In a real example, where a bank found that lots of banknotes of a particular denomination were being issued from their ATM System, they could only respond by withdrawing that denomination until a new, less easily forged, banknote was issued by the mint. This example would show that having some technology in an ATM that checked if banknotes were genuine would help satisfy the CSF of providing the right amount of money to the customer.

GOVERNANCE

Chapter 3: Governance



3 Governance

3.1 Perspective

The board of directors is accountable for the governance of an organization, both corporate governance and corporate compliance. Service Management exists as a practice, in part to ensure that services operate according to these governance requirements and to account for compliance.

There is a two-way responsibility. The board, often through the Risk Committee, will communicate governance and compliance requirements and risks to the organization. The organization, including, specifically, Service Management, needs to alert the board, through the Risk Committee where appropriate, of potential risks to compliance or areas where further governance policy is required.

Governance, viewed as a process, can be measured; these measures can give the board confidence that it is governing appropriately and that the auditors will be satisfied with the level of compliance.

In the 'big picture' view, it is this confidence at board level that is the objective in measuring IT governance as part of Service Management.

In terms of the Management of Value, the job is to design metrics that define, and then measure, the Value Cascade. The Value Cascade goes from: Organization Goals → Program Objectives → Project Objectives → Value Drivers → Design Requirements → Design Solutions → Products.

3.2 Metrics

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPCM01	COBIT Compliance	Governance	Compliance Management	% compliance	Metric
Description	COBIT compliance percentage				
Formula	Level of compliance, measured by a compliance audit, internal or external. $\text{Compliance} = (\text{agreed compliance areas compliant}) / (\text{agreed compliance areas}) * 100$				
Context	For IT compliance, the best tool is COBIT, which has been developed for this particular purpose. There are various documents that show the relationship between COBIT and ITIL®. The best is probably the itSMF endorsed book: <i>COBIT User Guide for Service Managers</i> which is available for free download for members of ISACA from their site. From the point of view of metrics, it is easiest to use the result from internal COBIT evaluations to help drive CSI towards more compliance. The measure is not against all control objectives in COBIT - though that may well be the long-term objective - but against those compliance goals that IT management has agreed ought to be achieved.				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPSD01	Staff Training (Governance) + Projection	Governance	Development	% eligible staff trained	KPI
Description	What percentage of eligible staff have been through the prescribed training for this area. Also the projection of training to be taken in the next quarter.				
Formula	<p>From the project plan, find all staff trained on the Governance courses in the Development Plan. The metric is:</p> $\% \text{ eligible staff trained} = (\text{staff trained in Governance}) / (\text{staff to be trained in Governance from the plan}) * 100$ <p>Also measured and reported is the 3 month projection:</p> $\text{Projected eligible staff trained} = (\text{staff booked on Governance courses in next 90 days} + \text{staff trained in Governance}) / (\text{staff to be trained in Governance in plan in 90 days time}) * 100$				
Context	<p>Specific metrics for the different aspects of training are required. Each lifecycle and major area has its requirements. The percentage is relative to the plan - a development road map should be produced at the start of a Service Management program, showing what training is intended at which stage - see figure in Metrics book for a hypothetical example.</p> <p>This metric, along with the other developmental metrics keeps track of the overall development program. Without these metrics it is easy to lose track and suddenly find that half the service desk staff haven't had ITIL® Foundations training, or that a new board director is on the Risk Committee but has not attended the M_o_R training.</p> <p>The three month projected figure allows the accountable manager to book training to prevent shortfall in the metric in future. This also helps at the start of the project because the current metric may well be in the red, but, if the projection is at least amber, it shows that training is being booked correctly.</p> <p>The organization can decide if 'trained' means 'attended the course' or 'is certified'.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPFC01	Financial Plan	Governance	Financial Controls	% actions on time	Metric
Description	Is the Financial Plan up to date with meetings and action items on time?				
Formula	$\% \text{ actions on time} = (\# \text{ Financial meetings on time}) / (\# \text{ Financial meetings}) * 50$ $+ (\# \text{ actions on time}) / (\# \text{ actions}) * 50$ <p>This requires meeting management to be in place, using a document management system and workflow for meeting management.</p>				
Context	<p>Financial meetings should be arranged to plan for the annual budget, design financial reports, produce monthly reports, and report variations from the current budget.</p> <p>Actions measured should include actions to raise awareness and communicate costs, risks and other suggestions, relating to the implementation of Service Strategy, to the Risk Committee, Internal Audit and IT management.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
SSPFM01	Delivery cost/value per service	Governance	Financial Management	Cost/value	KPI
Description	Financial Management will be reporting the cost of delivering services as well as the value of the service to the business.				
Formula	$\text{cost/value} = \text{average} ((\text{total cost of service}) / (\text{total value of service}))$ $\text{Total value of service} = \text{value of service per user} * \# \text{ users}$				
Context	<p>Financial Management will be reporting the cost of delivering services. One major aim of Service Management is to reduce this cost. This metric gives the average cost/value ratio per service, per user.</p> <p>A drill down to see the cost of all services in order, also showing the value to the business.</p> <p>If this ratio can be driven down over time, it shows that the Financial Management for Services is successful.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
SSPFM02	Customer satisfaction with business alignment	Governance	Financial Management	Satisfaction	KPI
Description	Customer satisfaction with business alignment				
Formula	Average Customer Satisfaction from all Service Reviews this month				
Context	<p>The customer here is not the end user, but, rather, those business managers who take part in Service Reviews.</p> <p>Each Service Review should end with the customer representatives filling in a short survey that includes this measure.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
SSPFM03	Customer Satisfaction with IT business knowledge	Governance	Financial Management	Satisfaction	KPI
Description	Customer Satisfaction with IT business knowledge				
Formula	<p>Customer Satisfaction measured in monthly survey.</p> <p>This can also be averaged with complaints categorized as 'lack of business knowledge' with each complaint taken to reduce the previous survey result by 5%.</p>				
Context	<p>Customer satisfaction with IT business knowledge should be an entry in the monthly survey of the business and, where appropriate, end customers.</p> <p>If customers complain about Service Desk employees or other staff and this complaint is on the grounds of their lack of business knowledge, these complaints can be used to reduce the survey measurement. Since such complaints are unusual and indicate sharp dissatisfaction, each complaint should reduce the survey score by a percentage - suggested as 5%.</p>				

	<p>Though this measure is a top-level organizational measure, it should be recognized that many people contribute to it, in particular:</p> <ul style="list-style-type: none"> – Service Desk management – Service Transition management – Problem Management – Knowledge Management – Human Resources <p>It should be possible to identify contributions from these areas to identify improvements or recognize achievements.</p>
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ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPIA01	Internal Audit	Governance	Internal Audit Management (Cobit)	% actions on time	Metric
Description	Internal Audit planning and execution in place. That is, planned meetings occur on time and action items are dealt with on time.				
Formula	$\% \text{ actions on time} = \frac{(\# \text{ Internal Audit meetings on time})}{(\# \text{ Internal Audit meetings})} * 50$ $+ \frac{(\# \text{ actions on time})}{(\# \text{ actions})} * 50$ <p>This requires meeting management to be in place, using a document management system and workflow for meeting management.</p>				
Context	The process of planning for and then executing internal audits needs to be in place. The metric checks that, once the plan is in place, the milestones in terms of meetings and action items take place and are completed on time.				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GP20K01	ISO/IEC 20000 Progress	Governance	ISO/IEC20000	% progress	Metric
Description	ISO/IEC 20000 Progress				
Formula	<p>Project delay = sum of days late of actions and milestones</p> <p>Current estimated certification date = original estimated certification date + project delay</p> $\% \text{ progress} = \frac{(\text{Current estimated certification date} - \text{today})}{(\text{initial estimated project time} + \text{project delay})} * 100$				
Context	<p>Measurement is against an agreed roadmap to ISO/IEC 20000 implementation. This roadmap should list milestones and actions (usually implemented as part of CSI) that move the organization towards achieving the certification.</p> <p>This metric measures the most recently achieved milestone, projecting forward based on the delay to actions.</p> <p>That is, if all actions are completed on time, the progress follows the calendar in the roadmap. All delay to actions pushes the end-date out and increases the time to completion.</p> <p>If major work is done to bring the project back into line, then this metric can be re-calibrated to start from the time this new project starts.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPIT00	Strategic Alignment	Governance	IT Governance	Meeting Statistics	Metric
Description	IT Governance steering committee is aligned to corporate governance.				
Formula	% of meetings and actions conforming to plan.				
Context	<p>IT Governance is aligned to Corporate Governance. This means that policies and guidelines from Corporate Governance are incorporated into IT Governance.</p> <p>These documents will be revised periodically and changes and actions considered by the IT Governance committee.</p> <p>In order to be certain that this process is working, agendas, minutes and actions can be kept in the SKMS (Document Management System - DMS) and followed to ensure that they are keeping to schedule and that the actions are followed.</p> <p>This metric can be drilled into to find out what slippages are causing the target not to be reached.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPIT01	Strategic Non-Conformance	Governance	IT Governance	Incidents & Test Rejection	Metric
Description	Incidents and Test results can be caused by non-conformance to policy. This needs to be a closing category of both.				
Formula	Number of Incidents and Test rejections caused by non-conformance to policy.				
Context	<p>All tests within Service Transition need to have 'non-conformance' with policy, guidelines or standards as a reason for failure.</p> <p>An incident closing category showing that an incident has occurred as a result of a non-conformance with policy also needs to be created.</p> <p>Either of the above shows that operational integration of policy is not working.</p> <p>This is very far from foolproof, of course! It is possible that policy is ignored and no incident or failed test results.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPIT02	Strategic Alignment Documents	Governance	IT Governance	Document Alignment	Metric
Description	IT Governance documents track Corporate Governance documents				
Formula	% IT Governance documents with version modification time within 30 days of Corporate Governance documentation				
Context	<p>The documents that describe corporate Policy and Guidelines and those that describe IT will be kept in the SKMS. When changes are made to corporate documents, these should be reflected in the IT documents. This metric checks this using the versioning information in the DMS.</p> <p>For this to work the exact correspondence between documents must be established.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPIT03	Strategic Training	Governance	IT Governance	% Individuals trained	Metric
Description	Individuals trained in changes to IT Governance				
Formula	% of IT staff who have completed strategic update training - the update training should be revised for any major changes in strategy. This training can be simply a short on-line CBT describing the policy changes.				
Context	<p>Governance requires that it can be demonstrated that strategic policy is communicated to and then executed by employees. This measure of training ensures that this can be demonstrated by IT employees.</p> <p>This metric can be modified depending on maturity and what training is defined as strategic or required for good governance.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
GPPRI10	Action Resolution	Governance	Risk	% overdue (weighted)	Metric
Description	Resolution of actions arising from regular supplier and internal process owner meetings				
Formula	<p>For each action produce the weighted score:</p> <p>For Actions completed on time since the previous period:</p> <p>Action N = 0</p> <p>For late Actions:</p> <p>Action N = (6 - priority) * (days over target) / target days for this priority</p> <p>% Overdue = sum(Actions) / Number of actions * 100</p>				
Context	<p>Actions need to be classified according to priority, with target times for example</p> <p>P1 - urgent, high impact (3 days) P2 - urgent, medium impact (6 days) P3 - non-urgent high impact (8 days) P4 - urgent, low impact (10 days) P5 - non-urgent low impact (30 days)</p> <p>These actions are minuted and lodged in the Knowledge Management Database (KMDB), with the expected completion date, owner of the action and approver of it being completed [the customer of the action].</p> <p>The weighted score can be produced weekly.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
SOPAM01	Appropriate Rights	Operation	Access Management	% correct rights	Metric
Description	Access management has the granted the appropriate rights according to policy.				
Formula	$\% \text{ users and systems that have correct access rights} = \frac{\# \text{ users detected with wrong rights (and no authorized exception)} + \# \text{ systems detected with wrong access (and no authorized exception)}}{(\# \text{ users} + \# \text{ systems})} * 100$				
Context	<p>This must be measured from both angles:</p> <ul style="list-style-type: none"> – AAll individuals, new, retired or active have the correct rights for their position according to policy – All services, servers, network devices, applications and other assets are controlled through the Access Database if they are part of the Information Security Policy (there may be exceptions such as development machines that are not) <p>This can be monitored by an automated process that uses the HR database to find the status and department of individuals, then checks that these are properly reflected in the Access Database. Exceptions are reported and checked to establish that they have documented, authorized exceptions.</p> <p>To this can be added regular, random checks on users (when they arrive at work, for example) to ensure that their identity matches their access rights and systems, to ensure that all accounts are under control of access management.</p>				

ID	Name	Area	Process/Function	Unit	KPI/Metric
SOPAM01	Customer Satisfaction with Access Management	Operation	Access Management	Satisfaction	KPI
Description	Customer Satisfaction with Access Management				
Formula	<p>For all services, processes and functions that are agreed to be part of this measure, measure:</p> $1 < \text{Customer Satisfaction} < 10$ <p>This can be done through surveys from time to time, but also from feedback requested at the time of delivery - or shortly afterwards.</p> <p>The average weekly measure forms this metric.</p>				
Context	Access Management can give rise to frustration if processes are slow, cumbersome or difficult to understand. It is important to capture user feedback close to the time to ensure that such frustration is minimized.				

3.3 Processes

3.3.1 Governance processes

IT governance

IT governance must be strategically aligned with business governance; it must be able to demonstrate this, as well as the existence of an active Information Security Policy. This can be measured by attending the meetings of the risk steering committee, which is usually the method by which overall governance of risk is controlled by the board.

Document versions in the DMS can also be used to ensure that revisions are being tracked.

The actual measure of effectiveness will be internal and external audits. The above meeting and document records can guide these.

None of this is enough to show that the IT governance is actually being followed. It is difficult to measure this directly, but a crude measure is incidents or test rejections as a result of non-conformance.

ISO/IEC 20000

While Service Management is vital to sound IT governance – it is, in fact, the method whereby governance is delivered – it is not a standard, so it can't be measured and audited against standard values. As a framework, Service Management processes, such as those described in ITIL® can be implemented, but only a standard such as ISO/IEC 20000 can establish objectively that these have been delivered to the required level.

The way of ensuring that governance is adequate, risks minimized and services are under proper control, is to gain ISO/IEC 20000 certification.

Even if an organization has not yet taken a decision to achieve this certification, effort expended towards the achievement of ISO/IEC 20000 is rewarded by increased clarity of the actual level of control in the organization. The progress towards ISO/IEC 20000 can be used as the basis for progress assessments.

Consequently, a metric to measure compliance with ISO/IEC 20000 within the target scope, as well as for the organization as a whole, is an important measure for IT governance.

Risk Identification and Management (Board Risk Committee)

A systematic, continuous process must exist to identify risks and then manage them. This can be measured by checking that the Business Continuity Plan has been updated regularly and tested – part of which will include testing the IT Service Continuity Plan that supports it to ensure that it has been updated regularly and appropriately.

The measurable and auditable component of Risk Identification and Management is the Risk Register. This register should, under proper security and version control, contain the risks that have been identified by the organization. Each risk should follow a lifecycle so that progress from identification to resolution can be measured. The register will contain different classes of risk, from high-level Enterprise risk to risks related to a particular program, project, service, or requirement. The status of each risk will show assessments and responses, as well as links to the origin of the risk record – which may be a Service, Process, Service Design Package or Requirement from the Requirements Register.

3.3.2 Compliance management

COBIT is widely adopted as a tool for IT compliance, which has been developed for this particular purpose. There are various documents that show the relationship between COBIT and ITIL®. The best is probably the itSMF-endorsed book: *COBIT User Guide for Service Managers*, which is available as a free download from their site for members of ISACA.

From the point of view of metrics, it is easiest to use the result from internal COBIT evaluations to help drive CSI towards more compliance.

Internal audit management (COBIT)

The process of planning for and then executing internal audits needs to be in place. The metric checks that, once the plan is in place, the milestones (in terms of meetings and action items) take place and are completed on time.

Financial controls management

This relates to financial controls in IT, and how they reflect corporate financial control requirements. A full audit will reveal any flaws in the controls, but it is clearly important to know that controls are in place before that.

To some extent, this is a ‘chicken and egg’ situation. If financial controls are in place, then it is easy to measure and report how well the organization is complying with these controls. Without them, this is more difficult.

For a maturing organization, it can be worthwhile measuring some of the milestones necessary to work towards financial control:

- Is there an IT financial plan?
- In particular, from a governance perspective, is there a plan to implement Service Strategy and financial management for services?

Even if the plan is to implement full Service Strategy in the future, there should be action items in financial meetings to prepare for financial management for services.

Until Service Strategy is in place, financial meetings should have a standard agenda item to discuss progress towards this goal and raise suggestions, issues, risks and costs for the Risk Committee and IT management.

3.3.3 COBIT 5 and Service Management

The COBIT 5 framework is still under development at the time of writing (August 2011), but the review documents show how the aims are converging to similar conclusions and directions as ITIL®.

The COBIT 5 Framework recognizes Principles, Architecture and Enablers. It distinguishes between the Governance Processes (Evaluate, Direct, Monitor) and the Management Processes (Plan, Build, Run, Monitor).

The Value Cascade (called the ‘Goals Cascade’ in COBIT 5) goes from Stakeholder Needs → Governance Objective (Value Creation – consisting of Benefits Realization, Resource Optimization and Risk Optimization) → Enterprise Goals → Information and Related Technology Goals.

The Enablers of the Framework are:

- Service Capabilities
- Processes
- Culture, Ethics, Behavior
- Organizational Structure
- Information
- Principles and Policies
- Skills and Competencies

COBIT 5 divides the Goals and Metrics into Economical Goals, Quality Goals, Outcomes Metrics, and Enabler Performance Metrics.

COBIT 5 recognizes 36 processes, with, of course, much overlap between these and ITIL® processes, but more emphasis on governance and audit.

The processes, along with a rough link to the ITIL® V3.2011 equivalent, are shown in the table below. The links are not precise, but give a guideline.

Table 3.1 COBIT 5 processes and ITIL® V3 2011 process equivalents

COBIT#	COBIT 5 Process	ITIL® V3.2011 Process Equivalent
EDM1	Set and Maintain the Governance Framework	Portfolio Management/Service Management
EDM2	Ensure Value Optimization	Portfolio Management/Service Lifecycle
EDM3	Ensure Risk Optimization	Risk Register
EDM4	Ensure Resource Optimization	Service Transition
EDM5	Ensure Stakeholder Transparency	Service Catalogue
AP01	Define the Management Framework for IT	Service Management
AP02	Define Strategy	Service Strategy
AP03	Manage Enterprise Architecture	Service Design

COBIT#	COBIT 5 Process	ITIL® V3.2011 Process Equivalent
AP04	Manage Innovation	Product Management/Business Relationship Management
AP05	Manage Portfolio	Portfolio Management
AP06	Manage Budget and Cost	Financial Management
AP07	Manage Human Resources	Service Transition
AP08	Manage Relationships	Service Level Management/Business Relationship Management
AP09	Manage Service Agreements	Service Level Management
AP010	Manage Suppliers	Supplier Management
AP011	Manage Quality	Continual Service Improvement
AP012	Manage Risk	Risk Register
BAI1	Manage Programs and Projects	Service Transition/Management of Programs
BAI2	Define Requirements	Requirements Engineering/Business Relationship Management
BAI3	Identify and Build Solutions	Service Design
BAI4	Manage Availability and Capacity	Service Availability/Service Capacity
BAI5	Enable Organizational Change	Service Transition
BAI6	Manage Changes	Change Management
BAI7	Accept and Transition of Change	Release & Deployment Management
BAI8	Knowledge Management	Knowledge Management
DSS1	Manage Operations	Service Operation
DSS2	Manage Assets	Service Asset & Configuration Management
DSS3	Manage Configuration	Service Asset & Configuration Management
DSS4	Manage Service Requests and Incidents	Service Desk/Incident & Request Management
DSS5	Manage Problems	Problem Management
DSS6	Manage Continuity	IT Service Continuity/Business Continuity
DSS7	Manage Security	IT Security Management
DSS8	Manage Business Process Controls Monitor and Evaluate	Service Management
MEA1	Performance and Conformance	Capacity Management/Change Evaluation
MEA2	Monitor System of Internal Control Monitor and Evaluate	Change Evaluation/Operations
MEA3	Compliance with External Requirements	Requirements Engineering

SERVICE STRATEGY

Chapter 4: Service Strategy

