Best Practice Insights

Focus On:
ITIL® Continual Service Improvement
Updated for ITIL 2011

bmcsoftware

This publication by Anthony Orr has been revised to bring the content up-to-date with IT Infrastructure Library® (ITIL®) 2011. Orr is the BMC Software Director of Service Management and works within the Office of the CTO. He is one of the authors for the ITIL 2011 update and a senior ITIL examiner for APMG. Orr has more than 30 years of information technology experience.

We greatly appreciate the contributions of the following individuals to the original version of this publication:

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Note to Readers

This publication highlights key elements of *ITIL Continual Service Improvement* published by TSO (The Stationery Office) and includes commentary on important concepts from BMC ITIL experts. BMC commentary is highlighted in blue text.

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Foreword

As demands on business and its dependency on IT services continue to grow rapidly, it is vital that IT organizations continually evaluate and improve their IT services and the IT service management processes that enable those IT services. A formal, proactive continual service improvement (CSI) practice is required to meet and achieve service agreements.

Implementing CSI is about instilling the right attitude and driving the right behaviors until they become a way of life. IT providers must develop an embedded culture of measurement that continually tests the value, quality, performance, and compliance of the services within their portfolio and implements improvement initiatives that enable the desired business outcomes.

The following will always be true:

» What is not defined cannot be controlled.
» What is not controlled cannot be measured.
» What is not measured cannot be improved.

For years, IT-business alignment has been the mantra of successful IT service management. However, by definition, the act of aligning requires bringing together two separate entities, often with separate goals and objectives. In today's complex IT environment, determining the difference between an IT service and a business service is becoming more difficult. As the lines blur, seeking alignment is no longer enough — IT must become an integral part of the business. There can no longer be two separate organizations with separate goals and objectives; rather, there must be a single, integrated business operation functioning because of enabling IT services.

When can improvements be made? One of the key principles from the CSI publication is that opportunities for improvement can be found at every stage of the service lifecycle. There is no need to wait until a service is complete and in operation to begin improvement activities. Measure now! Improve now!

Gary Case, Pink Elephant
George Spalding, Pink Elephant

Chapter 1:
Introduction

The second major refresh of the IT Infrastructure Library® (ITIL®) was published in 2007 to meet advancements in technology and emerging challenges. In 2011, ITIL was updated again to address new challenges that developed based on new and enhanced models and architectures, such as outsourcing, cloud computing, and mobile commerce, to name a few.

Many people have a personal continual improvement plan (although they may not call it that). For example, perhaps you decide you want to become more physically fit. First, you define what "more physically fit" means to you, and then you measure your current fitness level and set a goal for where you want to be. You may then decide to start walking a half mile every morning, and once you accomplish that for two weeks, you might increase the distance to one mile. After a month at one mile, you might increase the distanced to a mile and a half, and so on. You measure your progress at regular intervals to determine where you are in relation to your goal. Once you meet your goal of a certain level of physical fitness, you select something else in your life that you want to improve, and the improvement process begins again.

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Continual service improvement (*CSI*) for IT is just that: You find an area of IT — one that is important to the business — and look for ways to improve upon it. [ITIL] defines CSI as "[a] stage in the lifecycle of a service. Continual service improvement ensures that services are aligned with changing business needs by identifying and implementing improvements to IT services that support business processes. The performance of the IT service provider is continually measured and improvements are made to processes, IT services and IT infrastructure in order to increase efficiency, effectiveness and cost effectiveness. Continual service improvement includes the seven-step improvement process. Although this process is associated with continual service improvement, most processes have activities that take place across multiple stages of the service lifecycle."[1]

The purpose of introducing the processes, roles, and responsibilities of CSI is to maximize the business value and focus of the IT services your organization provides, with a focus on the overall effectiveness of IT service management, the alignment of IT services with the business requirements, and the development of mature IT processes. CSI should be an ongoing process in your IT organization, with the goal of constantly measuring, analyzing, and enhancing both IT services and underlying capabilities and resources, which include the IT processes, people, suppliers, and technology.

Guiding Best Practice
There's a wealth of information about industry-accepted best practice guidelines available in the public domain. By starting with industry best practices and augmenting them with your own organization's best practices, you'll be confident that you are following the most current and effective practices in the IT field. And you'll be more competitive with other IT service providers because you'll be operating as efficiently and effectively as anyone in the industry.

The Service Management Lifecycle
Figure 1 illustrates the service lifecycle approach. A stage in service management is service strategy, with the goal of designing, developing, and implementing service management as both an organizational capability and a strategic asset. The next stage, *service design*, is focused on ensuring that IT services offered to the business fulfill the objectives of the business and the customer.

In *service transition*, the focus is on risk management and knowledge management, along with change management, service asset and configuration management, and related areas. *Service transition* creates a smooth ride from strategy, design, and development to operation. *Service operation* strives to effectively manage operational priorities, such as the availability of the IT services provided to the business; optimize the use of existing infrastructure; resolve issues; and control demand for services.

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1 *ITIL® Glossary and Abbreviations: English* (London: The Cabinet Office, 2011), http://www.itil-officialsite.com/InternationalActivities/ITILGlossaries_2.aspx. See *continual service improvement*.

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Improving the user experience and the quality of existing IT services is at the heart of the value delivered by CSI. While the other four stages are best performed with agility, CSI is actually most effective when it is embedded as part of each of these lifecycle stages.
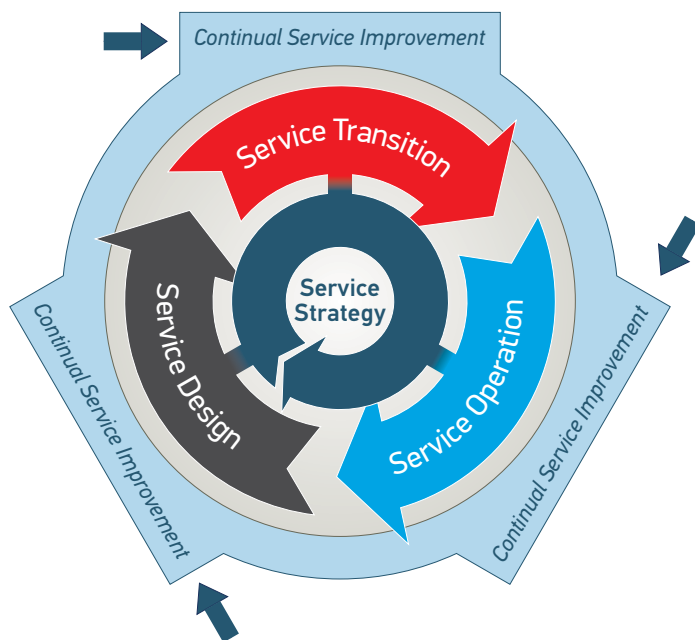

Figure 1. The ITIL service lifecycle. © Crown copyright 2011. Reproduced under licence from the Cabinet Office.

Why Read *ITIL Continual Service Improvement*?

Continual Service Improvement is the fifth publication in the ITIL series. But don't take this to mean that this is the last stage of the ITIL lifecycle. Rather, it should be an integral part of every stage. If you have areas needing improvement, then you can follow the CSI process, get some quick wins, and demonstrate to the business that they can trust IT. This will open doors and enable you to start working with the business on further strategic initiatives, which, of course, is the service strategy component of the ITIL lifecycle.

Summary

Put in place a CSI program so that you can take optimal advantage of your IT capabilities and resources. Find ways to make IT even more efficient, beneficial, and cost-effective so that IT can continue to drive business value. CSI will also help you to demonstrate value with metrics. By implementing a CSI program, you can develop baselines and maturity assessments.

Chapter 2:
Service Management as a Practice

Information in Chapter 2 is also discussed in the other ITIL books published by TSO. ITIL takes service management to the next level by discussing not only how IT must align itself with business objectives, but also how IT must be integrated with the business to truly provide the services the business needs.

Chapter 2 introduces some important definitions that provide a basis for the ITIL framework and introduces key concepts that are essential to service management success. Significant points stressed in this chapter are value creation, the importance of organizing for service management, and the service lifecycle. This chapter explains how services impact outcomes through improving the way tasks are performed and by reducing constraints. By focusing on outcomes, IT organizations can move closer toward business and IT integration. Refer to the ITIL glossary for the definitions of the following terms: *customers, users, suppliers, utility, warranty,* and *process*.

Like any organization that serves customers, you have resources at your command. However, you create value for your customers only when you transform those resources into something useful for the business.

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This process is exactly what service management strives to achieve. ITIL defines *service management* as "[a] set of specialized organizational capabilities for providing value to customers in the form of services."[2]

ITIL defines *service* as "[a] means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks."[3]

ITIL defines *IT service* as "[a] service provided by an IT service provider. An IT service is made up of a combination of information technology, people, and processes. A customer-facing IT service directly supports the business processes of one or more customers, and its service level targets should be defined in a service level agreement. Other IT services, called supporting services, are not directly used by the business but are required by the service provider to deliver customer-facing services."[4]

There are three key types of service providers, which include internal providers within a business unit, a shared services unit that supports more than one business unit, and an external service provider.

Stakeholders

Everyone in an organization should be considered a stakeholder for service management. Service is everyone's responsibility, no matter what role they play or how they play it to deliver and support services for their customers.

There are also external stakeholders to be considered, which are the customers, users, and suppliers. These stakeholders, along with the organizational stakeholders, are an example of the agency principle, which is a concept associated with the customer and supplier model. This means that customers hire suppliers to meet certain outcomes that the customers do not want to perform themselves.

Utility of Service

Customers want to achieve business outcomes by having services that are fit for their purpose. Utility is "[t]he functionality offered by a product or service to meet a particular need. Utility can be summarized as 'what the service does,' and can be used to determine whether a service is able to meet its required outcomes, or is 'fit for purpose.' The business value of an IT service is created by the combination of utility and warranty."[5] Utility of a service needs to support the customer performance or remove a constraint. Customers can become very frustrated with a service that is fit for their purpose but lacks sufficient warranty for their use.

Warranty of Service

While utility is about what a service does, warranty is focused on how you deliver the service. Warranty of service can be used to communicate to customers about service delivery in terms of commitments to *availability, capacity, continuity*, and *security* of the utilization of services. These are key process areas in service design.

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2 Ibid. See *service management*.

3 Ibid. See *service*.

4 Ibid. See *IT service*.

5 Ibid. See *utility*.

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» *Availability* means that the customer can use your service under the terms and conditions you have mutually agreed upon.
» *Capacity* ensures that the customer will be able to utilize the service at a specified level of business activity or that demand will be fulfilled at a specified quality level.
» *Continuity* guarantees that the customer will be able to use the service even if you experience a major failure or other unexpected event.
» *Security* means that the customer's utilization of services will be free of specific risks.

Many of the services IT provides are considered commodities. It's important to realize that you create a competitive advantage when you are able to deliver a certain level of warranty to your customers.

Customers, both internal and external, need to be confident that you can effectively and consistently support their business strategies. Since service providers are constantly matching others' service offerings, you must be constantly improving your value proposition to stand apart. Use one or more of the service management processes to drive these improvements. Utility and warranty are expressed via the service catalog.

Service Assets
According to ITIL, resources and capabilities are types of assets that organizations can use to create value for their customers. *Resources* are direct inputs to produce a service, while *capabilities* are the organization's ability to utilize resources to create value. You can create differentiation and retain customers by developing distinctive capabilities that are difficult for your competitors to replicate.

Processes, Governance, and Management Systems
Processes have input or triggers, define actions and activities, and have an output or specific results. Processes also have metrics and deliver their primary results to a customer in the form of services. Processes are enabled by capabilities and resources, such as a Service Knowledge Management System (SKMS), within or external to the organization. Processes should follow enterprise governance standards and have policy compliance built into them.

Governance ensures that the required processes are executed correctly. Processes are executed by people and sometimes enabled with technology implementations, such as the management systems. It is important that processes are collaborative and integrated appropriately, so that the output from one process provides appropriate input to the next process for the service that is delivered or supported. Processes should also be efficient, effective, and economical for the services that are supported by the process.

Service Lifecycle
The service lifecycle is dynamic, in that each stage of the lifecycle supports each of the other stages. Specialization and coordination across the lifecycle is very important for the delivery and support of services. The service lifecycle should work as an integrated system with feedback mechanisms for continual improvement.

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Remember, CSI should be a dynamic aspect of the lifecycle stages. If you don't make adjustments where a problem first occurs, the costs of future corrections escalate. That's because the problems often are compounded as a project moves further along the lifecycle toward the operation phase. Utilize a CSI register to log improvement opportunities from each stage of the service lifecycle. The register can be a database or a structured document for recording and managing improvement opportunities throughout the lifecycle.

The *Continual Service Improvement* publication describes the *service portfolio* as the "spine" that forms the framework of the service lifecycle. Refer to the ITIL publications for service inputs and outputs in each of the lifecycle stages.

Figure 2 shows how CSI supports the entire lifecycle and can be embedded effectively in each stage.
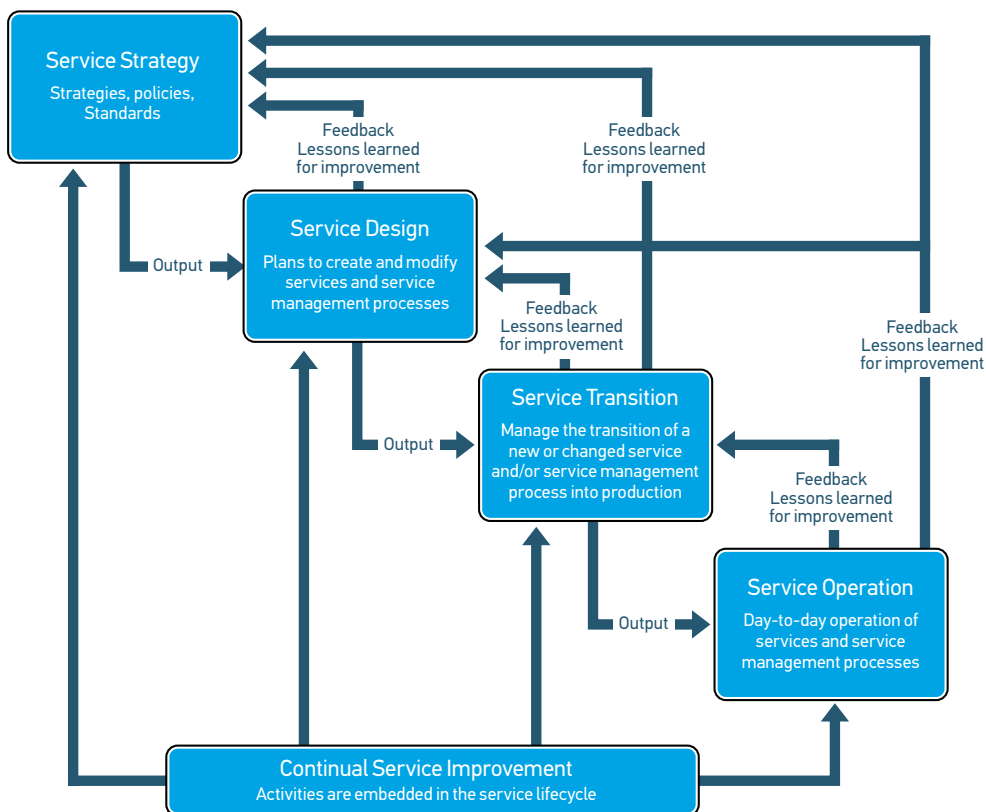

Figure 2. CSI supports the entire lifecycle. © Crown copyright 2011. Reproduced under licence from the Cabinet Office.

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Look at the Big Picture

Regardless of whether IT services are provided internally or externally by service providers, the IT organization is ultimately responsible for bringing together the relationships, knowledge, and methods necessary to deliver these services in the service operation stage of the IT service management lifecycle.[6]

Summary

The ITIL framework for IT service management enables you to improve from a balanced perspective focusing upon process integration across the service lifecycle: the four Ps: *process*, *products*, *people*, and *partners*. By implementing CSI, you will be on the lookout for redundancies, errors, poor use of resources, and ways to scale the use of IT as your organization grows, including expanding or using a partner network. You'll also ensure that business-critical services are stable, reliable, and secure. What's not to like about CSI?

The ITIL framework for IT service management enables you to improve from a balanced perspective focusing upon process integration across the service lifecycle: the four Ps: *process*, *products*, *people*, and *partners*.

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6 Ibid. See *IT service.*

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Chapter 3:
Continual Service Improvement Principles

CSI is primarily concerned with making sure you achieve maximum or higher-performing efficiency and effectiveness in all services you deliver throughout the service lifecycle, while keeping costs in line. With this goal in mind, this chapter outlines important principles of CSI.

Essentials of CSI

The *purpose* of CSI is to ensure that services are aligned with changing business needs by identifying and implementing improvements to IT services that support business processes.[7] CSI is an iterative process, adding more value with each iteration. CSI *objectives* include improving quality at each stage of service management, while maintaining customer and user satisfaction. The *scope* of CSI covers six primary topics: continual service improvement principles, continual service improvement processes, methods and techniques, organizing for improvement, technology considerations, implementing continual service improvement, and critical success factors.

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7 Ibid. See *continual service improvement..*

Continual Service Improvement Approach

Service improvement needs to be aligned with the business vision, mission, goals and objectives. The continual service improvement approach helps engage the business perspective for IT decisions. All IT projects for improvement should have business relevance. Figure 3 shows the continual service improvement approach that could be used to help decide the value of your CSI initiative and understand if business targets are obtained.
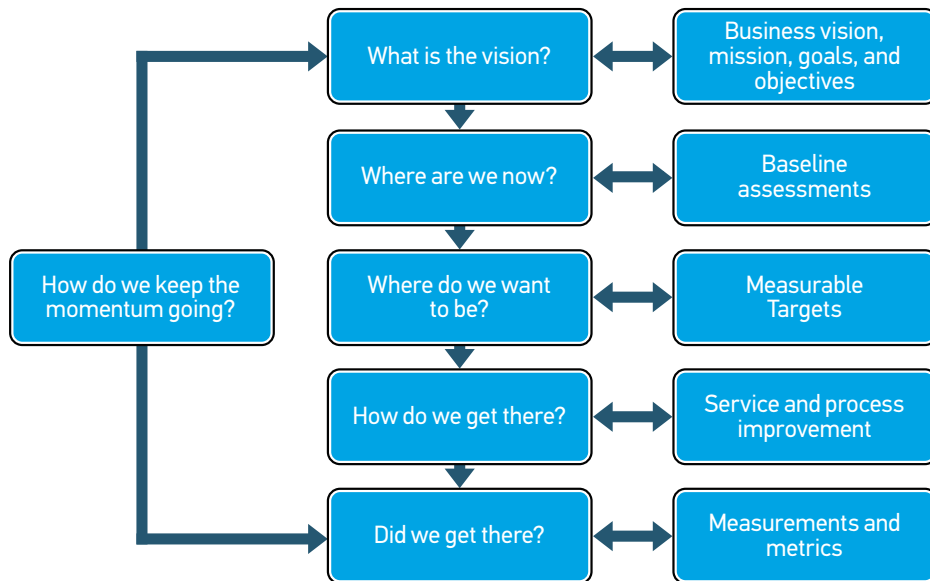

Figure 3. Continual service improvement approach, © Crown copyright 2011. Reproduced under licence from the Cabinet Office.

The Seven-Step Improvement Process

The whole idea of CSI is that improvement should be a constant goal so that IT is always maximizing its value to the business. One way to ensure this is to follow a model that moves the process along in an organized manner. Data or information gathered from the knowledge at one level of the organization becomes the data input for the next level. Figure 4 illustrates ITIL's seven steps to improvement. They include: identify the strategy for improvement, define what you will measure, gather the data, process the data, analyze the information and data, present and use the information, and implement improvement. Using this process together with the continual service improvement approach will help ensure program and project success.
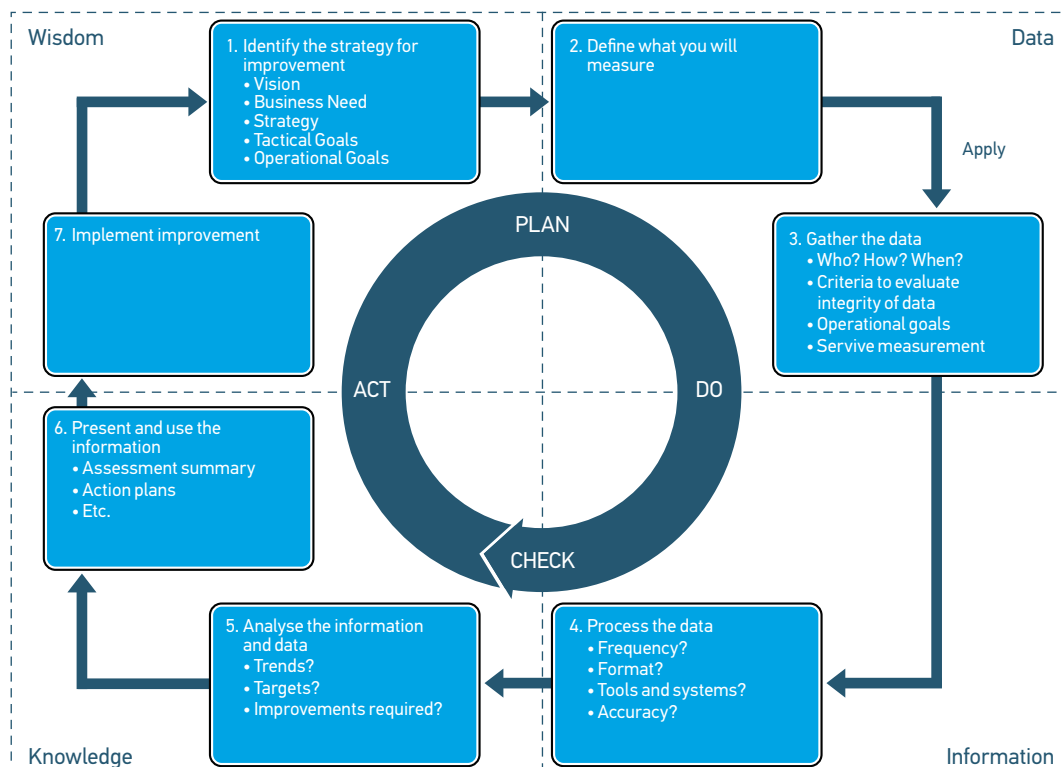
Figure 4. Seven-Step Improvement Process. © Crown copyright 2011. Reproduced under licence from the Cabinet Office.

The Business Value of CSI

The following terms are important to a discussion of CSI:

A *benefit* is a gain that comes as a result of improvements made. Benefits may or may not be expressed as financial results.

An *improvement* is an outcome that shows measurable changes as compared to a previously measured state. This can be an increase (such as in first call resolution rate) or a decrease (such as in number of calls to the service desk).

Intangible benefits are also called "soft benefits" because they can't easily be viewed in terms of their financial impact. While they aren't much help in making a financial justification, they can tell a persuasive story that may influence the business.

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Return on investment (ROI) is "[a] measurement of the expected benefit of an investment. In the simplest sense, it is the net profit of an investment divided by the net worth of the assets invested."[8]

Return on value (ROV): a measure of expected benefit that builds on the strict financial justification of ROI while taking into consideration nonfinancial factors, including competitive, functional, process, relationship, and strategic.

Value on investment (VOI) is "[a] measurement of the expected benefit of an investment. Value on investment considers both financial and intangible benefits."[9]

Measurement is critical to CSI, and the Seven-Step Improvement Process offers guidance for this process. Measurement helps to validate decisions, set the direction for activities to meet objectives, justify whether a course of action is required, and identify a point of intervention if changes and corrective actions are needed.

Why Should You Care About Soft Benefits?

Soft benefits are just as important as financial benefits. For example, consider a project to improve an order management application. A decrease in the lag time from when an order is placed to when it is shipped will not only allow you to invoice more quickly, but will also likely result in increased customer satisfaction. Customers who appreciate this benefit might increase their orders, resulting in more revenue for your company. Similarly, a project to increase the accuracy of orders shipped will avoid costly returns and reshipments and will also increase customer satisfaction, which can have a very positive effect on your customer retention figures.

Soft benefits may have a positive impact on your IT organization as well. As part of your CSI efforts, you'll likely seek input from all IT employees. This empowers the workforce, especially if action is being taken based on the input collected. The more successful you are with CSI, the less overtime will be expected from the IT workers due to unforeseen service issues. Finally, the better service IT can provide to its customers, the more pleasant IT will become as a place to work and the more valued people will feel. This can lead to a decrease in employee turnover, resulting in a reduction in new employee training and an increase in productivity.

Making the Case for CSI

If you can identify and articulate the benefits of CSI, you will be better able to justify the service improvement process to your IT organization and to the business customer. Be sure to describe the cost savings and/or revenue that will be generated from your CSI efforts.

Open communication between the CSI team and the business customer is critical. By making sure you have a clear picture of where things are and where the customer wants them to be, you will be better able to make

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8 Ibid. See *return on investment*.

9 Ibid. See *value on investment*.

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a business case for how you plan to get there. You'll also be better able to justify the costs and predict the benefits of achieving that goal.

IT plays a more important role in the business than ever before. Now, IT goes beyond the support role to enable critical business operations. This integration of IT and the business results in increased scrutiny of IT's quality, including its effectiveness, efficiency, reliability, and other factors. Changing technology also is a driver behind the need for the IT team to implement CSI. Technology drivers include advising the business about IT-related opportunities that match the business's long-term goals, maintaining quality during change procedures, and more.

How Does CSI Benefit the Business?

A large insurance company provides an excellent example of how CSI can benefit your business and, ultimately, your company's bottom line. The company's IT organization has been in the process of adopting ITIL for several years and is continually looking for areas to improve upon. One year, the focus was on improving problem management and knowledge management, with a goal of improving the first-call resolution rate from 65 to 85 percent (the ITIL benchmark for best-practice organizations).

Here are some key numbers: The first line of the service desk received 2.5 million calls per year. At $18 per call, the company was spending $45 million per year just for the first level of support. But it doesn't stop there. Thirty-five percent, or 875,000 calls, were escalated to the second level of support, where costs more than doubled to $37 per call. Second-level support was costing the company more than $32 million per year. And if a call was escalated to the third level of support — and 50 percent, or 437,500, of second-level calls were — the cost rose to $60 per call, for a total of more than $26 million per year. Increasing the first-call resolution rate by 20 percent would save the company $33.5M annually, calculated as follows:

> Number of additional calls resolved at first level: 20% of 2,500,000 = 500,000
>
> Dollars saved by not escalating to second level: 500,000 x $37/call = $18,500,000
>
> Dollars saved by reducing number of calls escalated to third level:
>
> > 500,000 x 50% = 250,000 calls
> >
> > 250,000 x $60/call = $15,000,000
>
> Total potential savings annually: $18,500,000 + 15,000,000 = $33,500,000

Were they successful? Read on …

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Knowing the Costs Helps You Calculate ROI

You'll need an understanding of how much a CSI program actually costs in order to calculate the ROI. By quantifying the benefits of CSI, you more easily gain buy-in from the business and from upper management for future CSI efforts. Calculating benefits should be an ongoing process, as both business drivers and technology itself can change rapidly. Ways to measure the ROI, VOI, and other benefits of CSI include periodically assessing the benefit(s) of specific improvement efforts that have been made and estimating the effect of proposed organizational changes.

> For an implementation to be successful, you must ensure that a CSI manager is accountable for adopting the best practices and sustaining them throughout the organization.

CSI Register

All improvement opportunities should be recorded and categorized into initiatives. As initiatives or possibilities for improvements are identified, they should be categorized into short, medium, or long term and also categorized into small, medium, or large undertakings. Each improvement should follow the CSI approach, starting with the understanding of the business value of the initiative. The CSI publication gives an example of a CSI register.

Service Level Management: A Key Factor in the Changing Role of IT

Service level management (SLM) is critical to the success of your CSI efforts. ITIL defines SLM as "[t]he process responsible for negotiating achievable service level agreements and ensuring that these are met. It is responsible for ensuring that all IT service management processes, operational level agreements, and underpinning contracts are appropriate for the agreed service level targets. Service level management monitors and reports on service levels, holds regular service reviews with customers, and identifies required improvements."[10]

Today more than ever, IT is an integral part of the business and a key enabler of all critical business processes. The measure of an IT team's success also has changed. The current definition of IT success is intricately linked to performance and is gauged by the service level that IT provides to the business. For example, a high rate of server availability is meaningless if the critical business application it supports is not available.

This chapter reviews the principle of CSI ownership. For an implementation to be successful, you must ensure that a CSI manager is accountable for adopting the best practices and sustaining them throughout the organization. Ownership also includes ensuring there are sufficient resources to support the CSI activities, such as monitoring, analyzing, evaluating, and so on.

SLM is discussed in detail in the *ITIL Service Design book*.

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10 Ibid. See *service level management*.

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Controlling Quality and Consolidating Improvement

The Deming Cycle for quality improvement has great applicability to CSI. It consists of four key phases, "Plan-Do-Check-Act,"[11] with the goal of improving quality as a process matures over time. During implementation of a new or revised process, you'll need to perform all four steps. The four steps are related to the Seven-Step Improvement Process as follows:

» **Plan**
  1. Identify the strategy for improvement
  2. Define what you will measure
» **Do**
  3. Gather the data
  4. Process the data
» **Check**
  5. Analyze the information and data
  6. Present and use the information
» **Act**
  7. Implement improvement

The Deming Cycle illustrates that it's important not only to follow the four essential steps, but also to consolidate the improvement into the organization to ensure that the change becomes permanent.

Sometimes thinking small may be the best way to achieve large improvements. By using the Deming Cycle to move through a series of small, planned improvements, large improvements and adaption to change can be made over time. This iterative approach to a series of smaller improvements avoids the infrastructure stresses of a "big-bang" approach.

The Deming Cycle in the Real World

Returning to the insurance company example from page 13, since the company's IT organization has been implementing ITIL for several years, they now have clear metrics for costs per call for first, second, and third levels of support. They also have metrics on how many total calls are received at the first level of support and how many are escalated to the second and third levels. Now they can compare these metrics to industry benchmarks and analyze where improvements can be made. Improvements might be in incident management, problem management, or service level agreements (SLAs). They might decide to try to reduce the cost per call, increase the first-call resolution rate, or reduce the number of incidents. The IT organization might make some changes, then measure again to see where they are in relation to the goal, and so on. This is a continual Plan-Do-Check-Act process.

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11 W. Edwards Deming, *Out of the Crisis* (Cambridge, MA: The MIT Press, 1986).

Summary

Begin with the end in mind. Decide which frameworks, models, standards, or systems you would like to implement. Follow the seven-step process. For some companies, it makes sense to choose just one area to begin with. Work on it until your team has that mastered. Then add another and master that one. The goal is not to try to implement every framework, model, standard, and system, but to strive to continually improve all that you do at every stage of the service lifecycle.

Now is the time to start your CSI program. Don't think that you need all the metrics defined, all measurement tools assembled, and all personnel in place before getting started. The important thing is to make progress, even if it's small. Then you'll be able to take greater strides in evaluating progress and suggesting changes that will make each stage of the lifecycle run more smoothly and produce the best possible results for your business customer. Utilize the CSI register from each stage of the lifecycle to identify improvement opportunities. Be sure, above all, to involve your business counterparts in articulating their goals and objectives. If you don't know what the target is, you won't know when you've hit it or by how much you've missed. Bottom line: Without a target, you can't demonstrate success.

Chapter 4:
Continual Service Improvement Processes

Chapter 3 introduced the Seven-Step Improvement Process and its interaction with the Plan-Do-Check-Act cycle. This chapter discusses the seven-step process in more detail, as well as how other ITIL processes contribute to CSI.

The Seven-Step Improvement Process

The Seven-Step Improvement Process for CSI is not only critically important to CSI, but also addresses every stage of the service management lifecycle. The following ITIL definitions are important to this discussion:

» *Key performance indicator* (KPI): "[a] metric that is used to help manage an IT service, process, plan, project or other activity. Key performance indicators are used to measure the achievement of critical success factors. Many metrics may be measured, but only the most important of these are defined as key performance indicators and used to actively manage and report on the process, IT service or activity. They should be selected to ensure that efficiency, effectiveness and cost effectiveness are all managed."[12]

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12 *ITIL® Glossary and Abbreviations*. See *key performance indicator*.

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» *Critical success factor* (CSF): "[s]omething that must happen if an IT service, plan, project, or other activity is to succeed. Key performance indicators are used to measure the achievement of each critical success factor. For example, a critical success factor of 'protect IT services when making changes' could be measured by key performance indicators such as 'percentage reduction of unsuccessful changes,' 'percentage reduction in changes causing incidents,' etc."[13]

The seven steps consist of the following:

Step 1: Identify the strategy for improvement.

Step 2: Define what you will measure.

Step 3: Gather the data.

Step 4: Process the data.

Step 5: Analyze the data and information.

Step 6: Present and use the information.

Step 7: Implement improvement.

> The organization's goals are at the center of the entire process and drive it to completion.

As the *Continual Service Improvement* publication points out, this iterative process becomes a spiral of improvement, with each end result becoming the starting point for a new Step 1.

The steps flow from one to the next and then loop back to start the process again. The organization's goals are at the center of the entire process and drive it to completion.

How Does DIKW Fit with CSI?

Key to the success of any CSI effort, and this Seven-Step Improvement Process in particular, is the Data-Information-Knowledge-Wisdom (DIKW) methodology. Using the DIKW model, your organization can move from gathering isolated bits of *data* to drawing conclusions that yield *information*, to combining information with experience to gain *knowledge*, to developing *wisdom*. Understanding the DIKW model is key to development and the interrelationships of your Service Knowledge Management System (SKMS), Configuration Management System (CMS), and Configuration Management Database (CMDB).

DIKW and the People Factor

In the DIKW model, wisdom is not attainable without people. The insurance company discussed in previous examples recognizes that people are one of the key factors in successful ITIL adoption. As a result, it has a continuous awareness program that constantly highlights the importance of ITIL. They run business

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13 Ibid. See *critical success factor*.

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simulations and encourage people to take the continually offered ITIL classes. They are always looking for ways to improve in accordance with the CSI methodology. And they are constantly collecting metrics on people, processes, and technology to ensure that improvements are being realized.

How Do You Implement the Seven-Step Improvement Process?

Please refer to the *Continual Service Improvement* publication for a detailed description of each step. This section of this book will focus on augmenting the ITIL guidance. For this discussion, we use an example of rolling out a new service, an electronic check-in kiosk at an airport.

Step 1: Identify the strategy for improvement.

What is the vision? What are the business objectives? Why improve? Before an improvement activity is started, it is important that the answers to these questions are understood. How will the improvements in IT help the business? It is very important to understand the value to the business for all IT improvements. If a potential improvement has no business value, it should not be done. Today, there should be no IT projects without business justification. The CSI register can help provide you with insight to help with decision making because it contains a wealth of information related to business plans, requirements, governance, and other important details.

Step 2: Define what you will measure.

Measurement is the foundation of CSI. If you can't measure it, you can't manage it, and if you can't manage it, you can't control it. So you'll need to decide what you can measure and find a way to measure it, keeping in mind the tools you already have available. This chapter reviews a variety of areas of measurement, such as service levels, customer satisfaction, business impact, supplier performance, and market performance.

It may be that the customer wants metrics on something that you can't measure. If that's the case, then don't include that metric in an SLA. Remember also that SLAs depend on operating level agreements (OLAs) and underpinning contracts, so if the measurements needed at any of these levels are not available, then you will have an issue measuring the SLA. You may have to think about measuring from the bottom up. Sometimes organizations will use "best effort" as a metric, but if the metric matters, this needs to be changed into factual data.

You can use technology to measure many elements, but not all. Can technology measure how many people are in line at the airport check-in kiosk at a given time or how many leave the line and go to the check-in counter if the line gets too long? This may require someone physically being there to monitor the situation. Understanding this helps organizations mature to be more proactive by anticipating end-user needs.

When you are rolling out a new IT service, you need to work closely with the business to determine what data you should collect. For example, before installing electronic check-in kiosks at an airport, you'll need information on departing flights so that you will have an idea when you might experience peaks in traffic. You'd also want to track how many people actually use the check-in kiosks, and monitor how long it takes a

customer to check in and get a boarding pass, from start to finish. And what would be the impact if the kiosks are not operating?

Make sure the definitions are clear. If you are measuring availability, will that be measured from the customer point of view (can they check in at the kiosk quickly and easily?), or should it be from a technical point of view based on monitoring tools? Similarly, are you measuring availability from a service point of view (hopefully), or on a server-by-server basis? Are maintenance windows excluded from the availability calculations? And what about planned outages outside maintenance windows — are they factored into the business availability metric?

Be sure to gather metrics based on established SLAs. If the SLA says that the kiosks will be available 100 percent between 5:30 a.m. and 12:30 a.m., then you will want to measure IT's success in meeting this agreement.

Also, from a time perspective, what should IT be accountable for, and thus, measured on? The business might want the check-in time at the kiosk from start to finish to be less than a minute, and everyone who travels by air would most likely agree. IT can enable fast transaction processing time, but what happens if a customer starts the process, then has to search to find the correct credit card, is very slow in pushing the buttons, or scans the credit card backward so it doesn't register at first? Does IT want to be measured on total transaction time when some of the elements are not in IT's control? The user experience matters!

Remember, someone has to make sense of all the data. Most IT organizations are inundated with data, and you have to make intelligent decisions about what data is useful. This might be a full-time job in some organizations. Be sure also to define how the data will be presented to key stakeholders. What will the reports look like?

If you skip this step, you will most likely end up gathering data and producing many reports that will not be used. Remember, data needs to be transformed for decision making.

Step 3: Gather the necessary data.
This section explains how gathering data is synonymous with service measurement, and it requires having monitoring in place. Monitoring will change over time, so service operation and CSI need processes to help address what needs to be monitored and the purpose for monitoring. Pay special attention to collecting technology metrics, process metrics, and service metrics.

Your CSI activities will most likely focus on only a small part of the data you collect through monitoring activities. Quality of the data is critical, whether you are collecting data manually or through technology. Always be on the lookout for opportunities for improvement, such as preventing problems, reducing costs, or providing better service.

Think about how other processes might affect the process you are focusing on. With the airport check-in kiosk, you may want to collect data on other check-in methods: online and counter check-in. You may also

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want to gather data regarding delays or failures of these other check-in methods to see how they affect the traffic at your check-in kiosks. If the online system fails, is there a peak in the traffic at the kiosks? What is the usual flight departure schedule? And how many minutes before a scheduled flight departure does usage peak at the kiosk? You'll need this information for effective capacity management, especially the strategy for demand management.

Develop KPIs to measure value, performance, quality, and compliance. For example, a KPI for the check-in kiosk might be that the transaction processing time after the customer presses the "submit" button is one second or less.

You may also want to conduct customer surveys to measure the value of the service you are providing. In the kiosk example, perhaps the system could print out a brief survey along with the boarding pass, with instructions to give the completed survey to a flight attendant.

These seven tasks in Figure 5 will assist you with monitoring and data collection procedures.

Task 1 — Define monitoring and data collection requirements

Task 2 — Define frequency of monitoring and data collection

Task 3 — Determine tool requirements for monitoring and data collection

Task 4 — Develop monitoring and data collection procedures

Task 5 — Develop and communicate monitoring and data collection plan

Task 6 — Uppdate availability and capacity plans

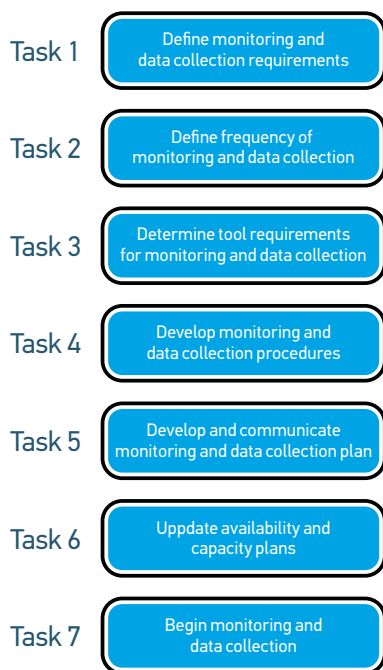Task 7 — Begin monitoring and data collection

Figure 5. Tasks for monitoring and data collection procedures. © Crown copyright 2011. Reproduced under licence from the Cabinet Office.

Step 4: Process the data.

After you have collected the data, you'll need to provide it in the required format. To do so, start with the business vision. This drives IT goals, goals drive objectives, objectives drive CSFs, and CSFs drive KPIs. You can then draw appropriate metrics from the KPIs. See Figure 6.
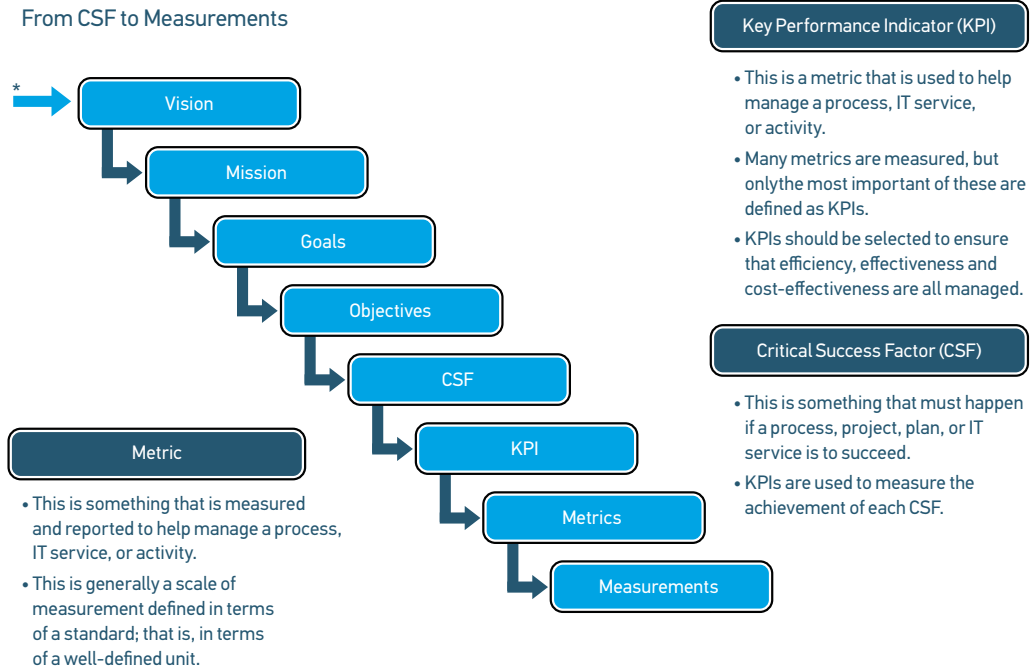
From CSF to Measurements

* → Vision

Mission

Goals

Objectives

CSF

KPI

Metrics

Measurements

Metric
- This is something that is measured and reported to help manage a process, IT service, or activity.
- This is generally a scale of measurement defined in terms of a standard; that is, in terms of a well-defined unit.

Key Performance Indicator (KPI)
- This is a metric that is used to help manage a process, IT service, or activity.
- Many metrics are measured, but onlythe most important of these are defined as KPIs.
- KPIs should be selected to ensure that efficiency, effectiveness and cost-effectiveness are all managed.

Critical Success Factor (CSF)
- This is something that must happen if a process, project, plan, or IT service is to succeed.
- KPIs are used to measure the achievement of each CSF.

Figure 6. Relationships among metrics, CSFs, and KPIs. *© Crown copyright 2011. Reproduced under licence from the Cabinet Office.

This is really about turning data into information. Remember to translate from IT language into business language so that the information is business related and business insightful.

How frequently do you need to process the data? What should the report look like? How will you know the data is accurate? These are all areas to evaluate.

You probably want to know on a minute-by-minute basis how the system is performing in terms of capacity, bandwidth, and user response time. But how often do you need to provide the availability report to the business? Daily? Weekly? The business may want a daily report when a system is first installed and rolled out, or if you've had outage issues, but reports may be required less frequently later on.

You may want to process data about the online check-in system frequently, maybe even hourly. As mentioned earlier, if the online check-in system is down — or transaction processing time is longer than normal — then traffic at the kiosk will most likely increase. You also want the business to keep you informed of any special offers for check-in at the kiosk. For example, what happens if the business offers bonus frequent flier miles for check-in at the kiosk, and you haven't taken measures to increase capacity?

If the lines at the kiosks get too long, do the counters need to be more fully staffed? How do you monitor this? And how frequently do you compare the actual results with the KPIs?

You should identify the outputs of activities, such as data and decisions, and determine the output of the procedures, such as the level of detail quality, the format, and so on.

Step 5: Analyze the information and data.
In this step, you are converting information into knowledge. In analyzing the data, look for answers to questions such as the following:

» Is the service meeting the goals and objectives set out in the service strategy, service design, service transition, and service operation stages of the lifecycle?
» Are you meeting the established SLAs?
» Are the business goals being achieved, and is the process adding value to the business?
» What sorts of trends do you see?
» Can you identify any bottlenecks in the process?
» How can the service be improved?
» Do you need to take corrective action?

> Sometimes you need to look "outside" of your world for factors affecting the measurements and the overall business.

Evaluate the data and information carefully, taking into account all relevant factors. Sometimes you need to look "outside" of your world for factors affecting the measurements and the overall business. Perhaps the monitoring data shows that, for the past five days, the number of customers checking in at the airport kiosks for flights during two 90-minute windows has increased considerably. Do you determine that customers are increasingly buying into the idea of using the kiosks?

If you check the number of customers who checked in online for the same five days, and online check-ins have also increased, what do you conclude? Is there a mileage bonus for online or kiosk check-in, or are more people flying for some reason? Was there a holiday? If you find out that the peak is a result of customers checking in for two flights to the United Kingdom, what does this tell you? Perhaps you explore what's going on in the UK, and learn that there is a big, worldwide championship football (soccer) match there this weekend. That may explain the spike in overall customers flying to the UK this week, which may be just

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a temporary spike. But that means you may need to prepare for a spike in kiosk check-ins at the UK airport after the weekend for customers returning home.

On the other hand, perhaps more customers are getting accustomed to the kiosk check-in, and you may need to add capacity because of market demand. Carefully scrutinizing the data collected, along with external factors, will enable you to know whether or not you need to implement any improvements. Sometimes you simply need to know from your business counterparts what they are planning and how that plan will impact the IT resources that the business services rely on. For example, is the business increasing the number of flights to cater for the football match this weekend? Often better communication is all that is needed. The SKMS can be a valuable asset at this time.

What if you want to make a change to the system? You'd most likely want to evaluate the information in your reports so that you select a day to make the change that historically has low traffic. If your reports show that the service is consistently meeting all of the targets, then perhaps it's time to create new targets and KPIs.

It's important to review trends over a period of time and determine what led to results for specific periods. If results are not meeting your expectations, this will help you to determine whether you need more analysis to understand what is impacting your ability to meet objectives. This enables you to become more proactive so that you can deliver better overall service in the future.

Step 6: Present and use the information.

This chapter focuses on taking your knowledge and presenting it to the business and other stakeholders. It identifies four distinct audiences: customers, senior IT management, internal IT, and suppliers.

Who needs the knowledge you have created? This relates to Step 1, where you solicited business input. Make sure that the reports are useful and appropriate to the audience.

For example, does the person who manages flight schedules need to know about an issue with the kiosk check-in process? Probably not, but the people responsible for check-in services, scheduling counter staff, and overall customer satisfaction might find the information helpful for their decisions.

In this step, you'll work with the business to turn the knowledge into wisdom — making strategic decisions based on everything you know. The business will be most interested in learning how IT has performed in regard to the agreed upon SLAs. Is the kiosk processing boarding passes within one second of submission? Was the system available 100 percent of the time it was supposed to be? If not, how are you going to address this issue?

Senior IT management is interested in factors such as customer satisfaction, success in CSFs and KPIs, and performance related to cost/revenue targets. What are the results of the end-user customer survey? Are your internal customers satisfied? Did you meet the availability target for the check-in kiosk within the expected budget?

Internal IT managers want to know how they can improve upon the existing level of service. For example, if the time that it takes to check in through the kiosk is longer than expected and lines are forming, what is the cause? Do you need to post a service representative at the kiosk to help those who are using it for the first time?

Be sure to report how the service is benefiting the business. If the check-in kiosk has reduced check-ins at the counter by 15 percent, then you may have saved the business the cost of counter staff.

Don't distribute a report to IT or your stakeholders unless you have reviewed it to ensure that it makes sense and contains no errors. Releasing wrong or incorrect data will impact current and future confidence in the CSI process.

Step 7: Implement improvement.

This section focuses on executing the necessary corrections for improvements identified through the previous six steps.

Based on the analysis of the information, you turned data into knowledge and then converted the knowledge to wisdom for making strategic decisions. Fill in the gaps related to capabilities and resources needed for service delivery and support. Now it's time to take corrective action — and it needs to be timely and immediate. Do you need to post someone at the kiosk to help first-time users? If so, get someone stationed there tomorrow. Is the kiosk check-in system failing at peak hours because it's over capacity? If so, you may want to get extra capacity from a server farm rather than prolonging the problem by waiting to procure, provision, and put in place extra servers.

Make corrections based on business priorities and compliance requirements. Once you've implemented a correction, then the process goes through the service lifecycle again.

Several IT Processes Contribute to CSI

Several IT processes are essential to success with CSI. Figure 7 summarizes what processes contribute to the various stages of CSI. For a detailed discussion of how these processes contribute to CSI, see the *ITIL Continual Service Improvement* book.

	Data Collection and Monitoring	Data Measurement	Data Analysis	Data Sharing	Taking Corrective Action
Service Level Management	x	x	x	x	x
Availability Management	x	x	x	x	x
Event Management, Incident Management, and Service Desk	x	x	x	x	
Information and Security Management	x	x	x	x	
Financial Management	x				
Problem Management			x	x	
Change Management					x
Release Management					x
Capacity Management	x	x	x	x	

Figure 7: IT processes and CSI

Summary

Focus your CSI efforts on the things that matter the most to the business and its customers, and expect these requirements to evolve over time. The only constant in both life and business is change; therefore, you need to be prepared for both the known and the unknown changes that occur in your IT environment. CSI is the mechanism to control and limit the "surprises" — and to enable a stable, reliable, and effective service to the business and its customers. By focusing on the CSI approach and the Seven-Step Improvement Process, you will be poised for success.

Chapter 5:
Continual Service Improvement Methods and Techniques

This chapter stresses that CSI efforts should focus on processes that will have a significant impact on the business. It reviews guidance for assessments, benchmarking, service measurement, metrics, return on investment, service reporting, and other service management processes. A key point is the need for the cost and effort of a CSI project to be balanced against the business value. Specific methods and techniques are suggested to help focus CSI on the processes that are of the highest value to the business and to help implement CSI projects effectively and efficiently. The chapter reviews examining the costs for CSI activities, such as labor, tooling, training, and consulting.

Using Assessments to Obtain Measurement Results

Assessments are the basic mechanisms for measuring improvements, or lack thereof, in particular aspects of IT process capability. Three typical levels of scope are (1) process or technology only; (2) people, process, and technology; or (3) people, process, technology, and broader business issues such as the culture of acceptance and the capability to improve processes over time.

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The first step in structuring an assessment is choosing or defining a maturity model and then choosing or defining maturity attributes to be measured at each level. When assessments are reported, they should be reported with specific reference to the maturity model used. The assessments can be conducted by the sponsoring organization or with a third party and should be reported using levels in the maturity model.

The *maturity* of processes is distinct from the *value* of those processes to the organization. If a process is immature but important to the organization, the organization may be in a vulnerable position. If a process is mature but not important to the organization, then the organization may be overinvesting in that process.

Assessments are conducted at key stages of the improvement cycle: at change evaluation, project initiation, midstream, and after the process is in place. Assessments are effective at answering the question, "Where are we now?" They are also an important part of identifying gaps between the current status of measured services and where the organization wants them to be. Additionally, if a common maturity framework is used, assessments can be used in comparison to industry benchmarks.

Sample Gap Analysis

Assume that a goal for an insurance company was to improve the first-call resolution rate from 65 to 85 percent. But after a year, measurement showed that the service desk was still struggling with the rate of 65 percent. Management was concerned that something was wrong with the data. Why were the improvement efforts not successful?

Through careful incident analysis, IT management discovered that unauthorized changes were causing a great deal of downtime, resulting in numerous calls to the service desk. They decided to focus on the change management process, with the goal of reducing unscheduled interruptions caused by unmanaged and unplanned changes.

This effort reduced the total number of incidents logged with the service desk, since the number of unscheduled outages was reduced. The effort also resulted in the added benefit of reducing the average time of first-call resolution, and thus the cost from $18 to $15 per call. Service desk technicians had been spending a great deal of time identifying the causes of outages, which were often unscheduled changes. The average time spent per call decreased when unscheduled changes were reduced. The overall impact on the bottom line was significant.

Benchmarking for Best Practice

How will you know when you've achieved your goals unless you have a yardstick by which to measure your progress? Benchmarking entails measuring or evaluating your IT processes as compared to established best practices — either internal or industry-wide. You can also use benchmarks, however, to determine the risks of closing the gaps between your processes and best practices versus not closing them. By using the best practices in the industry as a benchmark, you will have a high standard of comparison; your processes

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— and performance — will improve on the way to achieving your goal. Resistance to change will diminish as team members see evidence of progress.

Some of the areas to benchmark may include how your IT spending compares to similar organizations based on a percentage of revenue or how IT spending compares for similar functions in the organization. It may also help you to identify the value of a long-term sourcing contract and identify the most appropriate sourcing option. You may also want to explore comparing the cost and performance for internal service providers.

Using Benchmarking to Obtain Measurement Results

Benchmarking differs from assessments in that it compares particular processes to other similar processes. Benchmarking can consist of straightforward comparisons between similar processes within the same organization, or it can extend to an industry-wide search for best practices. Benchmarking, like assessments, can lead to the identification of gaps between the organization's current level of effectiveness with regard to people, processes, and technology, and the level of effectiveness IT wants to attain.

As with assessments, it is essential that benchmarking efforts focus on the goal of making improvements; measurement results should never be treated as an end in themselves. The focus should be on improving the quality of IT services, and in particular on improving those IT services that have the biggest impact on the business. Be sure to involve your customer (the business manager who is acquiring the services), service broker (for example, the cloud computing service provider), user or consumer of services, and internal service provider in benchmarking, in addition to external parties.

The insurance company in our example hired a best practices company to evaluate specific areas and processes in IT. The best practices company provided industry benchmarks as a basis for comparison and to show what IT should be striving to achieve. An external consulting organization can provide a bipartisan view, one not influenced by internal politics.

What's Important to the Business?

Everything IT does should be in support of a business requirement. As such, IT should strive to be seen by the business as a key enabler of business activities, and IT should have a solid understanding of each service level requirement.

A *service level requirement* (*SLR*) is defined by ITIL as, "[a] customer requirement for an aspect of an IT service. Service level requirements are based on business objectives and used to negotiate agreed service level targets."[14]

The *Continual Service Improvement* publication discusses three categories of goals and metrics, including financial, learning and growth, and organizational metrics (also called process effectiveness metrics). Focus any measurements on the results of IT services, not on the effort expended to achieve those results.

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14 Ibid. See *service level requirement*.

It's a Matter of Metrics

A *metric* is defined by ITIL as, "[s]omething that is measured and reported to help manage a process, IT service, or activity. See also *key performance indicator*."[15] Metrics are used to quantitatively assess processes, generally in subject-specific areas.

Supporting CSI activities involves collecting data regarding three types of metrics:

Technology metrics measure such things as the availability and performance of various components and applications.

Process metrics are used to assess how well a process is working, in terms of its quality, value, performance, and compliance. All of this information is used by CSI to plan process improvements.

Service metrics are a collective measurement of all the component metrics and show the success or failure of a service from one end to the other. Service metrics should measure service performance from the customer point of view.

Metrics tend to track KPIs and can also track resource use, productivity, and trends, among other things. CSFs flow from the objectives to KPIs to metrics to measurements. Start by initially tracking only two to three KPIs per CSF. KPIs can be either quantitative or qualitative.

An example of a quantitative metric is number of incidents resolved at first contact. Customer satisfaction is a qualitative metric.

Measuring and Reporting Frameworks

Remember, everything IT does should be in support of the business. As such, use your CSI process to make sure that the services you are providing meet the business's needs, within the allocated budget. Adopt one or a combination of measuring and reporting frameworks to organize CSI measurement data and to extract and report CSI results.

ITIL discusses the Balanced Scorecard and SWOT [Strengths-Weaknesses-Opportunities-Threats] analysis in detail. The Balanced Scorecard approach strives to balance four different perspectives with respect to the measurement of IT services: (1) the customer receiving the service; (2) the operational excellence of the internal processes themselves; (3) the ability of IT service to improve (learn and grow) over time; and (4) the financial costs associated with providing the services.

What Does a Balanced Scorecard Look Like?

Using our insurance company example, a balanced scorecard for the customer self-service online quote generator might look like Figure 8.

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15 Ibid. See *metric*.

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Financial Goal	Performance Indicator	Customer Goal	Performance Indicator
» Reduce costs associated with 800 customer service line	» Costs reduced by at least 20%	» Service available 24x7 » Quote is easy to use » Quote can be obtained in 7 minutes or less » If having difficulty, online chat person is available	» Availability is at 99.99% » Percent of customers abandoning the quote system midway is less than 15% » Customers consistently can enter information and get a quote in less than 7 minutes » Online chat person is available within 30 seconds

Innovation Goal	Performance Indicator	Customer Goal	Performance Indicator
» Reduce the time to enter information and process a quote	» Customers can get a quote within 5 minutes	» Service is available 24x7 » Most customers who start the online calculator actually finish it	» Availability is at 99.99% » 90% of customers who start the process enter all the information and request a quote

Figure 8: Sample balanced scorecard

SWOT Analysis

A SWOT analysis is a framework for structuring and evaluating projects by considering the existing and possible strengths, weaknesses, opportunities, and threats. Typically strengths and weaknesses are *internal* considerations, while opportunities and threats are *external* considerations. A SWOT analysis is an effective way to generate the inputs and considerations for possible strategies. It can, therefore, be an effective strategic planning tool. However, a SWOT analysis is a description of conditions, not a strategy itself. SWOT analyses must be carefully aligned with the organization's vision, mission, goals, and objectives in order to be of value. A SWOT analysis can be conducted at a variety of organizational levels, as well as for a service or process.

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SWOT Analysis in Action

In the insurance company example, a SWOT analysis might look like Figure 9.

Strengths	Weaknesses
» Superior technology » Skilled staff » Management committed to innovation » Market leader in auto insurance	» Budget cuts » Majority of staff satisfied with the status quo and opposed to change
Opportunities	**Threats**
» Expand services to cover additional customers or segments (for example, travel insurance or boating insurance) » Expand services to new regions » Enhance remote claims-processing through advances in wireless technologies	» Unpredictable events such as major hurricane or earthquake » Competitive pressures » Increased regulatory requirements

Figure 9: Sample SWOT analysis

While a SWOT analysis is a useful tool for looking for areas to improve upon, in IT, many prefer to talk about "hindrances to success" instead of "threats." Hindrances to success are typically aligned around six areas: political, economic, social, technical, environmental, and legal. Analyzing any of these areas will almost always help you discover areas that can be improved. Below are examples of each.

Political: "Don't tell me how to do my job." Protecting turf

Economical: Requirement to do more with less

Social: "It's not my job." "We've always done it this way."

Technical: Do we have the tools to do our job? Are they integrated?

Environmental: The day shift doesn't talk to the night shift.

Legal: Compliance issues

A Balancing Act

When implementing a new service or product, you need to balance resources, the functionality of the product or service, and the schedule. By using tension metrics, the team is forced to focus on more than one of these three factors. ITIL defines *tension metrics* as, "[a] set of related metrics in which improvements to one metric

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have a negative effect on another. Tension metrics are designed to ensure that an appropriate balance is achieved."[16] Tension metrics help teams share responsibilities across their roles. See Figure 11.
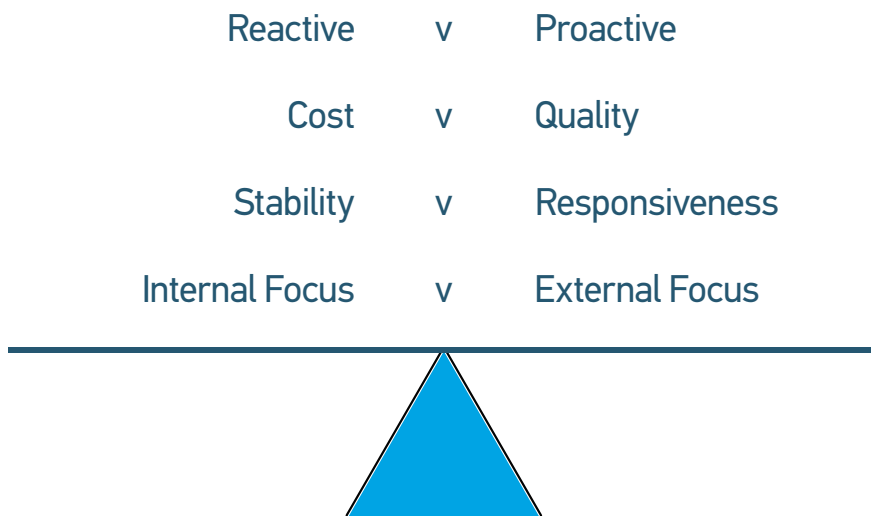
Reactive	v	Proactive
Cost	v	Quality
Stability	v	Responsiveness
Internal Focus	v	External Focus

Figure 10. Tension model

Providing Meaningful Reports on Services
Although a tremendous amount of data is collected by IT each day, only a small amount of it is important to IT managers. A large portion is more appropriate and useful for business managers. Some of the most significant types of data relate to past performance, especially past events that could be a threat to future performance, as well as IT's plans to mitigate any potential threats. Be sure to provide the right data in the right format to the right person, without extraneous information.

Another meaningful report is one that tracks the cost of keeping a service up and running (operations), versus the time spent on improving the alignment of the service to meet business needs (innovation).

Measuring IT Services from a Customer Perspective
It's all well and good to measure the performance of individual components and systems, but, in the end, what matters most is the customer's experience relating to the service you have provided, including when this service has been provided via SaaS. This involves a moving away from measuring relatively simple "on/off" metrics, such as server uptime or application response time, to measuring user satisfaction with the business function, such as the accounts payable or human resources (HR) system.

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16 Ibid. See *tension metrics*.

User satisfaction may need to be measured against the levels promised by the formal service level contract with the SaaS provider (as compared to the less formal, internal service level agreement) and based on the elements of that contract that are monitored and measured. Keep in mind, these are not typical IT metrics that are being measured, but instead this shows how IT supports end-user results based on how they consume IT resources.

Obtaining Business Buy-In

ROI is a critical piece of information when determining whether to move forward with a new service or process improvement. You're not likely to get support from the business for a new service or service improvement unless you can make a clear business case to support it and describe its business value. You'll need to outline the value on investment as well. And remember, even though you are asking the business to make a financial investment in an improved service, you aren't asking for a handout. In fact, the change you propose may well deliver future cost savings to the business.

Everybody Wants Something

Consider the needs and wants of the various stakeholders. For example, the CFO wants to know how long it will take to achieve payback for the investment, as well as the projected ROI. The business executives want to know how much costs will be reduced, how the change will affect the business, what the benefits will be, and how much value they will get on their investment. The IT managers are concerned with translating benefits of ITIL into benefits for the business.

Establish a baseline before making any changes. Having a baseline helps you prove the value of the changes you implement. You'll want to measure before, during, and after the change is implemented.

Sometimes taking no action will result in a detriment to the business. To make that case to the business, document how failing to make the needed change is likely to have a negative impact on the business and on IT.

With proper data collection and analysis, companies can target the customer specifically based on past patterns of purchase. Similarly, CSI programs provide structure in data collection and analysis of metrics on various service performance factors. This enables you to fully understand the effects of services on the business and — based on specific knowledge — target improvements leading to increased business effectiveness, efficiency, and profits.

Be sure to define the criteria for success well before you implement any changes. That way, you'll know when you've achieved your goal and will be able to prove it to all stakeholders. Success might include accelerating the time market, increasing customer retention, and growing marketshare. IT can contribute to success by increasing agility, managing knowledge, enhancing knowledge, and reducing risk. For example, IT service management success can be enabled with cloud computing, social media, and mobility.

Measuring Success

Once the improvement has been implemented, you'll want to measure how much benefit it is providing. Keep in mind factors such as how well the improvement has matched the intended outcomes of the changes you've implemented, whether you have gained as much value and ROI as you predicted, and whether you will need additional improvements.

Be sure that you wait a sufficient amount of time after implementation before beginning to measure your progress. If you begin your assessment too soon, you may not see all of the benefits you expect to see, as some benefits may occur farther along in the process.

Be on the Lookout for Unexpected Benefits

A large oil company realized ROI from its service management implementation much quicker than expected (within two months) when they added contracts and contract relationships as configuration items (CIs) to their configuration management database (CMDB). Through this activity, IT learned that they were paying significant maintenance costs for systems that still existed on paper but that had not been part of the infrastructure for years. They eliminated these maintenance payments, resulting in substantial cost savings.

> Take a measurement of the process performance before you implement a change so that you will be able to see how much progress you make as a result of the change.

The project was part of a CSI effort to increase the accuracy and completeness of the CMDB for the purposes of troubleshooting and risk and impact analysis. The cost savings were a nice, unintended benefit.

Asking Questions from a Business Perspective

Obtain business input in deciding which CSI initiatives to implement. Seek ways to either improve existing services or improve how a service is built or modified. Ask questions similar to the ones listed below:

What is our baseline? Take a measurement of the process performance before you implement a change so that you will be able to see how much progress you make as a result of the change.

What is in the CSI register? IT and the business should collaborate to determine the desired outcome of the change. Outcomes can be quantitative (e.g., percent of guaranteed availability) or qualitative (e.g., service desk personnel who speak courteously to customers). Ask the business to specify both long- and short-term goals and objectives.

What are the essentials? Prioritize all of the items in the CSI register to determine which are the most important to address. Maintain a focus on mission-critical services, even though you may also implement some services that are not mission critical.

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Can we pay for that? Another consideration in prioritizing improvement projects is who will pay for them and how much they will cost. In some cases, IT will bear the expense; in others, the business may pick up the cost.

What is the likely outcome? Make sure that IT and the business work together to specify both what they require of an improvement project and what they expect will happen once it is finished.

What did we achieve in the end? Once the service operation team monitors and reports their findings, the CSI team needs to work with the business to determine opportunities for improvement.

What Metric Should You Use?

ROI refers to the measurement of cash flows, but the fact is that value takes many forms. Value on investment (VOI) is the total measure of expected benefits. Used alone or with ROI, it allows decision makers to take into account those benefits that are usually considered intangible. Examples of these intangible benefits include the higher competency of the IT department, increased business throughput, the value of compliance, improved business agility, and so on. Return on value (ROV) is another measurement that is used to help analyze factors beyond the strict rigor of ROI analysis, such as competitive, functional, process, relationship, strategic, and other values.

Choosing the most appropriate measurement tool depends on your organizational goals and IT roles. For example, are you screening a new project? Measuring internal effectiveness? Evaluating a brand new project? The motivation for doing the project dictates how you will begin the measurement process. Keep in mind that rigorous, established financial metrics might not help you measure innovation. However, the more intangible variables can be difficult to measure. So what should you do? Make sure to address this issue by clearly articulating your goals.

Regardless of the technique employed, every IT manager should become comfortable with the various metrics and be able to articulate value and justify projects. Consider designating an expert within the department who can identify which metric to employ. If all else fails, seek a specialist outside of your company. Setting the right metric and creating measurable, actionable value outputs will not only help you assess your current state, but also guide your decision-making process and help you avoid costly, painful mistakes. It will also help you prove success after the improvement has been implemented and monitor for unintended consequences.

The Importance of Availability and Capacity Management

The *outputs* of other service management processes are among the key *inputs* to CSI processes. For example, *availability management* provides data about the effect of infrastructure deficiencies, as well as process or procedural deficiencies, on business services.

Availability management data helps CSI pinpoint failures. Find the weak links or the single point of failure, and make the needed corrections to improve availability so that you can meet your SLAs.

Capacity management is focused on ensuring that IT responds to the ever-changing needs of the business and the related changes in processing capacity required. Capacity management also provides value to IT support by supplying information about the organization's use of technical skills and competencies as they relate to capacity.

The ROI from CSI focused on capacity management can be huge. A leading auto manufacturer reduced costs by $500 million by eliminating excess servers and server capacity. The cost of managing a server is three times its purchase price. The right capacity — including virtualized servers — at the right time is huge. With today's economic climate, this is an area for a significant potential ROI for many companies.

CSI and ITSM-related guidance

The *Continual Service Improvement* publication discusses related guidance (various frameworks, models, standards, and systems). Tables 11 through 15 summarize some of the main points in the chapters. See the CSI publication for more details.

Acronym	Full Name	Author or Owner	Use/Purpose	Certification Available?
ITIL®	Information Technology Infrastructure Library	Office of Government Commerce (UK)	Principles of IT service management via the lifecycle approach; maximizes how people, process, and technology operate together	YES
COBIT®	Control Objectives for Information and related Technology	IT Governance Institute	Originally for audits of IT and Sarbanes-Oxley compliance; has evolved into an overall IT management framework	YES
PMBOK	Project Management Body of Knowledge	Project Management Institute (PMI)	A compendium of the evolving body of knowledge about the project management profession	YES
Prince2	Project IN Controlled Environments, v2	Office of Government Commerce (UK)	A written record of logical, organized steps for managing projects	YES

Figure 11. IT frameworks

Acronym	Full Name	Author or Owner	Use/Purpose
CMMI	Capability Maturity Model Integrated	Carnegie Mellon University's Software Engineering Institute (SEI)	The model used most often to measure process maturity

Figure 12. IT model

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Acronym	Governing Body	Purpose
ISO	International Standards Organization	Creates the standards and code of practice for IT service management; provides company certifications
ISO/IEC	International Standards Organization/ International Electrotechnical Commission	Creates the standards and code of practice for IT service management worldwide

Figure 13. IT standards

Standard	Most Recent Version	Purpose	Certification Available
ISO/IEC 20000	2005	Helps organizations gain control and efficiency by integrating and managing linked activities using ITIL service management as a basis	ISO Auditor

IT service accreditation against the standard |
ISO/IEC 27001	2005	Helps organizations identify appropriate security controls and use an information security management system to mitigate business risks	
ISO/IEC 17799	2005	Helps organizations develop security standards and identify security management practices in response to a risk assessment	
ISO/IEC 15504	2006	Gives organizations a means to assess process capability; also known as Software Process Improvement and Capability dEtermination (SPICE)	
ISO/IEC 19770	2006	Provides a means by which an organization can prove it is performing software asset management (SAM) at a level adequate to meet corporate governance requirements as well as effective overall ITSM	

NOTE: The term "ISO XXXXX Certified" is given to any organization that successfully passes an ISO/IEC audit.

Figure 14. ISO/IEC Standards applicable to ITSM

Name	Definition	Purpose	Certification
Six Sigma	A quantitative description of how a process is performing	Process methodology to improve products or processes by reducing the number of errors or defects to less than 99.99966 percent (less than or equal to 3.4 per million possible defects)	Six Sigma Green Belt Six Sigma Black Belt
Six Sigma DMAIC	Define, Measure, Analyze, Improve, Control	To incrementally improve existing products or processes (Note: The ITIL CSI process is similar to Six Sigma DMAIC.)	Six Sigma Master Black Belt
Six Sigma DMADV	Define, Measure, Analyze, Design, Verify	To achieve Six Sigma quality with new products or processes	
Lean Manufacturing (a.k.a. Lean Production)	A customer-focused quality system	To pursue CSI process that focuses on the value to the end user (customer)	Lean Six Sigma

Figure 15. IT systems

Summary

Some of the methods and techniques that drive CSI include using assessments to obtain measurement results, developing a sample gap analysis, benchmarking, using a balanced scorecard, and SWOT analysis. It's important to use reporting frameworks to help guide the direction of CSI projects and to help manage them, and to use output from other service management processes as input for CSI.

Begin by focusing on the goals you want to achieve. Note the gaps in capabilities and resources. Do these gaps relate to the business issues to be solved? Then add objects that focus on the business issue using the foundation as the overall service blueprint. If you cannot add capabilities internally in the organization to address the gaps, utilize a third-party supplier. As it relates to the discovered gaps, the initial goal is not to try to do everything, but to focus and prioritize your efforts based on business need and strive to continually improve all that you do at every stage of the service lifecycle.

It may make sense to implement more than one standard at the same time. For example, ITIL and COBIT together will help you achieve the business goals and objectives of improved service management and adherence to internal and external compliance standards.

Be sure to focus on asking questions from a business perspective. This includes understanding your baseline, knowing what's in the CSI register, determining who will pay for the project, and focusing on the desired outcome.

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Another key area of focus includes availability and capacity management. Availability management can help to identify potential failures so that IT can make the needed corrections to improve availability. Capacity management can ensure that IT responds to business needs. An increasing number of organizations are moving more services to the cloud, for example, to help deliver cloud services with more agility, savings, flexibility, and alignment. Cloud computing puts the capacity of the public and private infrastructures at your disposal to use when and where it's needed.

Chapter 6:
Organizing for Continual Service Improvement

This chapter of the *ITIL Continual Service Improvement* publication focuses on the roles and responsibilities required to successfully carry out CSI efforts. The key to success in CSI activities is assigning the right people to the right roles and making sure everyone involved understands who is supposed to do what.

Essential CSI Roles

ITIL identifies various CSI roles such as Generic Service Owner, CSI Manager, Generic Process Owner, Generic Process Manager, Generic Process Practitioner, Reporting Analyst, and Business Relationship Manager, along with other roles.

The Generic Service Owner role is accountable for the delivery of a specific IT service and has a wide range of responsibilities related to that service. That individual is also responsible for CSI and the management of change for the service. The Generic Service Owner is the primary stakeholder.

The *CSI Manager* is specifically focused on CSI efforts. The other roles have been described in previous ITIL

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books and have major responsibilities outside the realm of CSI; however, they have specific new responsibilities with regard to CSI.

The *CSI Manager* is responsible for the overall CSI effort and, as such, is responsible for the success of it. The role of *Generic Process Owner* is accountable for the overall quality of a particular IT business process. See the *Continual Service Improvement* publication to clarify the distinctions among the primary responsibilities of these roles.

The CSI manager's role is to make processes as efficient as possible and link them back to the business goals and objectives. This requires varies skills, such as project management, organization facilitation, negotiation, and process management.

Who Owns CSI?

Be sure to have an owner for your CSI activities. If there's no owner, there's no responsibility. The CSI owner or the CSI manager will review suggested improvement opportunities and then prioritize them before making a recommendation about these opportunities to senior management. Make sure the data that is gathered isn't wasted; give it to the CSI owner for collection and analysis. Also make sure to complete the RACI (Responsible-Accountable-Consulted-Informed) model related to the CSI activities. (This model is described on the following page.)

> Service Level Management helps determine the levels of IT service the business requires, whether those levels of service are being provided, and any reasons why the appropriate service levels are not being met.

Service Level Management

SLM is important to the Seven-Step Improvement Process, which drives CSI activities. SLM goes beyond a simple SLA. SLM helps determine the levels of IT service the business requires, whether those levels of service are being provided, and any reasons why the appropriate service levels are not being met.

Through continual discussions with the business and IT, SLM improves service quality. SLM can trigger a service improvement plan (SIP). An SIP results when SLM and CSI identify areas needing improvement. Problem management and availability management also may be involved in initiating an SIP.

If you plan to outsource the delivery of services, be sure that you establish a protocol for improvement with the third party so that SIP activities are budgeted for early in the process. Otherwise, the third party may have little or no motivation to make the needed changes.

The RACI Authority Matrix

To effectively meet the business needs with your CSI initiative, you'll need to manage processes and services that run across typical organizational divisions. This approach is essential to effectiveness but can also lead to confusion about roles among those involved. An authority matrix can help to clarify roles and responsibilities, as well as reveal any gaps in responsibilities.

The ITIL publications refer to one particular authority matrix: the RACI model. Using the RACI model, you can summarize the roles involved in a CSI effort as follows:

R = who is **Responsible** for getting the job done;

A = the one person who is **Accountable** for each task;

C = who is **Consulted** for their input and knowledge; and

I = who needs to be **Informed** about process implementation and quality.

For a complete discussion of the RACI model, refer to the *ITIL Service Design* book.

Transforming Your Organization with CSI

Start by establishing a CSI owner who is accountable for the CSI program. This ensures someone has a vested interest in the long-term success of the CSI efforts.

As you begin to implement CSI, keep in mind that focusing on improving a single process isn't always enough because most processes are both affected by and often embedded into other parts of the organization. The focus should be on improving a business outcome with the organizational capabilities and resources, including the people, processes, suppliers, and technology.

Service improvement typically results in organizational change, and change is often the greatest challenge. By human nature, people react to forced changes with resistance. In order to increase the probability of achieving the results you desire, consider using an organizational change approach such as the Eight Steps to Transforming Your Organization by John P. Kotter of Harvard Business School.[17] This approach is discussed in more detail in Chapter 8.

Summary

It is essential that every individual involved in a CSI effort understands his or her role and responsibilities, as well as those of the others involved in the CSI effort. An authority matrix can be used to help clarify who is involved in the CSI effort and in what way.

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17 John P. Kotter, *Leading Change*, (Boston: Harvard Business School Press, 1996).

Chapter 7:
Technology Considerations

This chapter reviews technology requirements that support CSI. It emphasizes how activities for ongoing improvements depend upon using software that monitors and reports on services and processes. These solutions can enable IT organizations to be more proactive by monitoring, identifying issues and trends, and analyzing key components of IT services. IT service management tools have evolved from point solutions into integrated solutions that can help manage IT based on business objectives. Many product suites are now available as Software as a Service (SaaS).

The following areas are addressed as technology considerations for CSI:

» Tools to Support CSI Activities

» IT Service Management Suites

» Systems and Network Management

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- » Event Management

- » Automated Incident/Problem Resolution

- » Knowledge Management

- » Requesting Services (Service Catalog and Workflow)

- » Performance Management

- » Application and Service Performance Monitoring

- » Statistical Analysis Tools

- » Software Control/Software Configuration Management

- » Software Test Management

- » Information Security Management

- » Project and Portfolio Management

- » Financial Management for IT Services

- » Business Intelligence Reporting

Tools to Support CSI Activities

This chapter discusses technology, including service management solutions for monitoring, controlling systems and infrastructure components, and managing workflows. The solutions you choose should support core IT service management processes and governance, and should be integrated.

When following effective CSI principles, you can deliver more value to the business by managing IT from a business perspective, known as business service management (BSM). ITIL defines *Business Service Management* as "The management of the business services delivered to business customers…"[18]

IT Service Management Suites

Enterprises are dynamic. ITSM needs are likely to change over time, driven by shifts in the business environment, growth of the IT infrastructure, business expansion, and advancements based on the ITSM maturity level. The service desk solution you choose should be flexible so that you can adapt your

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18 *ITIL® Glossary and Abbreviations.* See *business service management.*

implementation to meet evolving business needs. For example, you may want to move from an on-premise solution to a SaaS offering, or vice versa. Or you may want to add new process capabilities over time, such as implementing a change management solution or service catalog to complement your help desk solution. To improve communication and collaboration you may also want to add integration with social media at some future point, or perhaps make provision within the system for the emerging trend of users bringing their own devices to the workplace.

Key Technology to Support IT Service Management Suites

Select an IT service management suite that is compatible with ITIL processes and is supplied with an integrated with a CMDB. Let's look at an example of how taking an integrated approach can be effective in support of CSI:

The CMDB shows the current infrastructure — all CIs and their relationships with each other. Incident management measures what is going wrong in the infrastructure. Problem management — leveraging configuration data from the CMDB — analyzes what went wrong and proposes changes to make sure the issue doesn't occur again. Next, change management implements the proposed changes to remove the root cause of the incident. The CMDB is then updated to show the improved infrastructure. This illustrates the continuous improvement cycle in the service management processes, resulting in a more stable environment by removing root causes and thus preventing incidents from recurring.

To ensure effective CSI, the architecture must provide discovery and reconciliation capabilities to capture CIs and their relationships in the CMDB. The CMDB is part of the overall configuration management system (CMS) and service knowledge management system (SKMS). ITIL defines *CMS* as, "[a] set of tools, data and information that is used to support service asset and configuration management. The CMS is part of an overall service knowledge management system and includes tools for collecting, storing, managing, updating, analyzing and presenting data about all configuration items and their relationships..."[19] The CMS is the foundation that supports the complete IT service lifecycle. A CMS may include various IT management tools and databases, such as an asset database, a change management system, or a CMDB. It's up to you to decide what type of configuration you want for your CMS.

The CMS, which is used to manage configuration data, will help your IT organization to solve its problems from a business perspective. Through the use of a CMS, IT management applications have access to cataloged IT configuration data. By accessing this information, the CMS can provide your IT organization with the data to make well-informed decisions, thereby increasing IT's value to the business. The SKMS follows the DIKW model and helps transform data from the CMDB and information and knowledge from the CMS to actionable decisions for the end consumer.

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19 Ibid. See *configuration management system*.

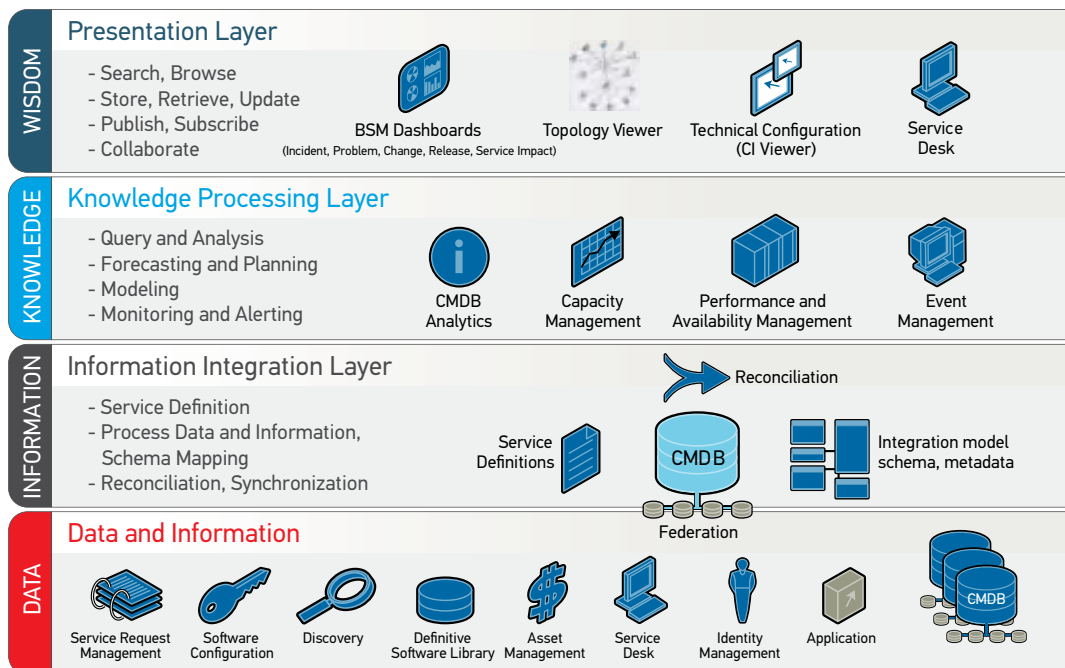ITIL® is a Registered Trade Mark of the Cabinet Office.

Figure 16. Sample service knowledge management system (SKMS)

One of the key benefits of an integrated IT service management suite is being able to provide a single source of truth for data from all areas of the service lifecycle. This includes incidents that turn into problems, changes that create incidents, and so on. The technology you select should include good reporting capabilities and standard interfaces for inputting data into industry-standard reporting packages and dashboards.

Due to a lack of actionable reporting capabilities, organizations often face difficulties in making the right operational, financial, and contractual decisions that support service management. Traditional reporting often relies on static reports that provide important information overviews but lack functionality to allow users to drill down into a deeper level of analysis.

A useful extension to your CMS and SKMS strategy is the addition of some kind of mobile device management (MDM) capability. The inexorable rise in the use of mobile and tablet devices, coupled with the growing trend for a "bringing your own device" (BYOD), mandate that organizations take control of a layer of business-critical infrastructure that is most likely undermanaged at present.

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Look for a technology solution that provides reporting capabilities that enable point-and-click analysis and reporting across business service configurations, linking incident and problem data from the service desk with configuration and relationship data (from the CMDB). The solution should also link contract, software license, lease, and warranty information. By combining this process data into a consolidated view, you can analyze service desk performance, along with supporting IT configurations and assets, to determine how effectively you are supporting your critical business services.

Systems and Network Management

Solutions for systems and network management provide a variety of data to support service management objectives. For example, they generate error messages that feed into incident management and availability management processes. This information can be integrated within the CMS to provide increased visibility into the experience of the end user. These tools can also be used to support the release of patches and to push upgrades on the network.

If upgrades are not done properly, they can cause system outages. Even the most thorough change planning process is not enough. It must be accompanied by an efficient way to execute many software changes on a variety of devices with precision, thereby improving first-time deployment success rate, achieving desired deployment objectives, and creating audit trails for regulatory compliance and internal governance policies. Look for a solution that automates the discovery, packaging, provisioning, configuration, patching, and repair of software, including operating systems, purchased and custom applications, content, and predefined software configurations.

Automated Incident and Problem Resolution

Automated incident and problem management solutions can help reduce the number of manual, labor-intensive processes related to incident and problem resolution. This technology can identify root case and resolve issues, which can also prevent service outages. It can also be used to document audit-related information.

Most IT organizations start the CSI process with incident and problem management. You can begin by analyzing all of the incidents to find out which ones have the biggest impact on the business. Review the incident reports to identify areas experiencing recurrent incidents where you can improve upon the services. At the same time, look at your incident management process to discover any problems with SLAs. You can also use the service desk to collect customer satisfaction data, which is another key indicator of areas for improvement.

Event Management

Events occur when a tool senses an error condition or that a threshold has been met. Event management solutions that can correlate events and perform impact and root cause analysis to filter out the false messages are particularly useful to CSI.

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Event management is an ideal candidate for CSI. Look at your event management reports, coupled with a service impact tool, to determine areas where events occurred that caused the greatest impact on the business. The reports will indicate weak areas in the infrastructure where improvement programs will be beneficial.

Determining which IT events are creating the greatest effect on the business is a common challenge. Because many enterprises have acquired a large number of monitoring tools that often do not integrate with one another, it can be even more challenging to identify which events are related to incidents and whether each is a source or symptom of the problem or changes.

An effective event management solution should allow you to detect IT problems so you can concentrate on resolving issues quickly — before there is an impact on critical IT services. The solution should be able to handle events from a broad set of sources (including mainframes, distributed systems, networks, databases, and applications) and forward the event to incident, problem, or change management. It should translate the event into information that enables IT to resolve incidents and problems faster by filtering, prioritizing, enriching, correlating, and automatically handling events according to business and operational priorities.

> The technology you choose should integrate with your existing IT investments so that you don't have to get rid of your existing technology to support new solutions.

It is important to remember the focus of the process disciplines; event management is neither incident management nor problem management but provides input to both, including change management. The technology you choose should integrate with your existing IT investments so that you don't have to get rid of your existing technology to support new solutions.

Knowledge Management

Knowledge management solutions let you learn from experience so that you don't have to start from scratch each time you need an answer to a question. Problems can be resolved faster by using a solution that offers accurate access to previous cases. The tool should be able to address the symptoms of current incidents or problems based on past knowledge.

Knowledge management uses information from problem management to help determine root cause analysis. Root cause analysis is important in defining the weak link in the infrastructure, or the single point of failure in a chain of events. Problem management works with availability management and capacity management to eradicate problems and restore services. A proactive problem management team is key to building knowledge items and to CSI overall.

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Any delays in resolving IT incidents can cause delays in business processes — negatively affecting the company's bottom line. Knowledge management solutions must enable both external and internal call centers to perform more efficiently, enabling support agents to have at their fingertips access to a vast array of information needed to resolve problems.

An effective solution lets users search across multiple sources and create their own trouble tickets. It should provide enforceable authoring processes and modifications to ensure that the knowledge is consistent and up to corporate standards, all in a timely manner.

It's also becoming increasingly common for IT support conversations to be conducted in social collaboration platforms. These exchanges can provide a rich source of knowledge that can be used to address future occurrences of a given problem. A contemporary knowledge management solution will allow you to search social sources in addition to the more traditional structured knowledge repositories.

Service Request and Fulfillment (Service Catalog and Workflow)

Service request management (SRM) solutions help you to define the service catalog, manage requests, and provide workflow to fulfill those requests. SRM solutions enable IT to provide business services cost effectively, helping IT deliver greater business value.

SRM technology is evolving, giving employees one-stop, online shopping for all the services they need. It's like having a service supermarket at your employees' fingertips. It's an efficient, accurate, and very low-cost way of raising requests, making the business benefits significant. The SRM solution should employ standard, repeatable, best-practice processes for handling requests. This approach also reduces business risk and gives management greater insight into service delivery quality and costs. Quality of service and costs are both key focus areas for CSI.

SRM also enables all service requests to be tracked for later auditing — critical for regulatory compliance. A comprehensive SRM solution should enable you to track service request turnaround times against SLAs, another key area for CSI.

Performance Management

Performance management solutions collect data related to availability, capacity, and performance. The solutions analyze responsiveness, traffic, workloads, and resource data usage. They also predict performance and generate data required to report SLAs.

A comprehensive performance management solution is a key tool in your CSI toolkit. Recall that the metrics related to SLAs are a key indicator of customer satisfaction, which in turn is a key indicator of where you should focus your improvement efforts. A good performance management tool can help you find the weak links or bottlenecks in your IT infrastructure. Then you can concentrate your improvement activities on services that are not meeting SLAs and/or have low customer satisfaction numbers.

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Managing the availability and performance of your business processes is critical to the success. Business processes are executed by your personnel and by your business applications. This requires that all the technology components needed to deliver each application must be available and performing well for your processes to execute smoothly.

This is a challenging task because business applications have multiple levels of complexity that make it difficult to identify the root cause of problems. Furthermore, business processes often have cross-application dependencies. As a result, even if one application is performing as intended, a business process may not be executed properly because of a dependency on another failing application.

Application and Service Performance Monitoring

This section of the *Continual Service Improvement* publication focuses on how to understand the user experience pertaining to service provisioning. The publication reviews how solutions need to monitor the end-to-end delivery of services and provide metrics such as availability, server efficiency, transaction response time, and so on. This information enables IT managers to analyze how services are delivered at various points, as well as look for improvements. It provides usage trend data to support availability and capacity management processes and enhances your ability to meet service level agreements.

Business service delivery depends on the completion of end-user transactions. With today's complex infrastructures and siloed organizations, IT is often unable to provide consistent, end-to-end service availability and performance to the business. When problems occur, determining the origin and cause takes too long and costs too much (in terms of both IT resources and negative business impact).

Look for a solution that improves the quality of business services by detecting, isolating, and resolving business transaction problems across the enterprise from the perspective of the end user. This technology can help IT to understand if there is a problem "before the phone rings" and ensure applications meet business requirements, while improving customer satisfaction. For the purposes of CSI, this technology is key to improving service quality.

Statistical Analysis Tools

Your CSI efforts can be greatly enhanced by leveraging statistical analysis solutions for reporting and supporting other processes, such as availability and capacity management. These tools should support analysis of mean time between failures, demand management, workload analysis, and so on. The solutions should be able to group data, model services, and provide predictive models to support growth.

Statistical analysis tools are another important element of the CSI manager's toolkit. These tools can perform "what-if" analyses if you are planning to add new business services. They also help with business resource planning and workload analysis. These capabilities enable the CSI manager to proactively see the effects on the infrastructure of a new service, solution, or offering.

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Most enterprises have significant overcapacity in non-Unix servers. Having extra "room to grow" may not sound like a problem, but the reality is that the cost to acquire these systems is trivial compared to the ongoing cost of operations, backup, power, cooling, and so on. Companies now view data center optimization — through server consolidation, cloud computing, and virtualization — as the preferred method to decrease server sprawl and increase efficiency, scalability, and overall IT effectiveness, while also decreasing operational management costs.

> Be sure that software test management solutions integrate with incident management so that you can conduct tests on incidents that might affect production versions of software.

Capacity management solutions can address these challenges for both physical and virtual environments by providing high-level, in-depth performance analysis and reporting capabilities to explain where their performance and capacity levels are today. This includes providing comprehensive management of distributed server performance and capacity, including the ability to properly size, consolidate, and understand both current and future capacity requirements through response-time modeling.

Software Version Control/Software Configuration Management
Solutions should be available to provide version control that supports all of the applications.

Software Test Management
Solutions can be used for release management and deployment testing. Be sure that software test management solutions integrate with incident management so that you can conduct tests on incidents that might affect production versions of software.

Sixty to 80 percent of incidents are caused by failed changes or improperly implemented software applications. A key focus of any CSI effort is to lower change-related incidents. A software testing tool enables you to test and quickly find areas of concern, to quickly find the root cause, and to eradicate the issue before it affects the business service.

One approach to testing involves automating the problem resolution process. Analogous to a black box flight recorder on an aircraft, technology can capture a synchronized, real-time log of user actions, system events, performance metrics, configuration data, and code execution flow when a problem occurs. By recording the actual application execution, it can eliminate the need to manually document and reproduce issues before resolving them. This capability significantly contributes to the CSI process by improving efficiency for development, testing, and support teams.

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Security Management

It's important to protect the network, systems, and applications. Solutions should ensure that only those people who are entitled to access the network have access to it.

Access management is defined as the process of granting authorized users the right to use a service, while preventing access to unauthorized users, which can be a significant risk and vulnerability to the IT environment. The ITIL guidelines stress the importance of integrating technology, processes, and people. Identity management is an important component in ensuring the "people" dimension of the security management challenge is effectively controlled.

Integrating the identity management solution with other components of a BSM approach allows other solutions to share and leverage this identity data. This data sharing significantly increases the value of the identity management solution, as well as that of the other solutions.

Because protecting your IT environment is so important, comprehensive identity management is another important tool for the CSI toolkit. You need to be able to track any activities from unapproved users in the system and then eradicate unauthorized access.

Project and Portfolio Management

The business of IT can be managed through solutions that provide resource management, portfolio visibility, project management, and so on.

To be successful with project and portfolio management, you must be able to effectively manage the entire lifecycle of every service, from request to retirement. Many IT organizations are already addressing the management of deployed services by using available service management tools and solutions. These tools enable IT to maintain service delivery at agreed-upon levels and provide effective support. They also enable IT to understand the relationships of the services to the underlying technology components that support them and the business priorities of the services. With these solutions and tools, IT can manage service delivery from a business perspective. An effective solution will enable you to continually evaluate the quality of the services you are delivering and search for areas needing improvement.

Financial Management

Financial management of IT services is critical to ensuring you have sufficient financial resources to support the IT infrastructure. Many IT organizations track resource and service use to bill for shared IT resources. Solutions collect data from a variety of sources and provide reports that analyze costs. The solutions should interface with the CMS to manage costs for each CI. Financial management tools help IT to budget more accurately and evaluate the effectiveness of services.

One of the most important roles of the CSI manager is to analyze the cost benefit of any improvement efforts. Obviously, you will want to focus on improvement activities that provide the greatest benefits at the lowest cost.

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Asset management solutions play an important role in financial management. They can help you proactively seek and achieve improvements related to lowering the cost of asset ownership and mitigating compliance risk. You can also seek improvements around software license costs by using software usage frequency information to align licensing with actual software usage.

Business Intelligence/Reporting

There should be a common repository of service information and business-related data. Solutions should reduce the administrative costs of managing processes and improve the quality of IT service provisioning.

Dashboards are valuable because they allow you to see at a glance the overall IT service performance and availability levels. Customers and users are interested in a service view of the infrastructure; a technical view is generally not as relevant to them.

Providing proper management visibility into key IT performance indicators can help you run and maintain an effective IT organization that consistently meets the demands and needs of the business. These indicators can also help you identify areas for improvement in your CSI efforts.

BSM dashboards, for example, address this challenge by providing interactive access to key service support metrics to help IT management make decisions based on business requirements and accelerate the alignment of IT with business goals. With this insight, IT managers can get the right data at the right time to improve the success of their IT support functions. However, bear in mind, that the ultimate challenge is actually linking the business data to IT data.

Summary

To promote CSI, organizations should look at the big picture and leverage solutions that support gathering, processing, analysis, and presentation of data. The solutions should be able to monitor each level of the service hierarchy, as well as support reporting activities related to SLAs, OLAs, and underpinning contracts. Remember, reporting should enable decisions.

The solutions should also be able to help IT meet the growing needs of supporting the increased demand due to the growth of mobile devices and greater expectations of service from the end users. The tools gather data and information. However, astute CSI managers will reconcile any information obtained from reporting sources against their own personal experience to ensure that proposed improvements will truly enable the organization to provide consistently better services. Service impact tools are critical to comprehending how business services will be affected by certain actions. Gaining this understanding will enable you to get greater control over your IT environment while reducing complexity and risk.

Best-practice service management process models, whether purchased as a foundation or developed in-house, can also be an invaluable asset. You can get reliable reporting out of your tools only if they are used in a consistent manner, so process documentation is a crucial part of a successful CSI initiative.

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Chapter 8:
Implementing Continual Service Improvement

The *ITIL Continual Service Improvement* publication looks at several aspects of implementing CSI, including different approaches, governance, organizational changes, and the importance of effective communication.

Getting Started

The *ITIL Continual Service Improvement* publication reviews several steps in preparation for a CSI effort. These include identifying and filling the key roles, identifying and initiating data gathering and data reporting processes to monitor the relevant metrics, and scheduling monthly service review meetings within IT prior to service review meetings with the business.

Once these precursors are complete, the big question is where to start the CSI effort. ITIL outlines three possible approaches, each with a different starting point but all focused on identifying possible improvement opportunities.

Service Approach: For this approach, start by identifying a particular service "pain point" and then work with the service owner to identify possible improvement opportunities.

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Lifecycle Approach: This approach can be effective for improving services before they are implemented into the production environment. In this case, start by examining the effectiveness of the handoffs that occur from one lifecycle stage to the next to identify improvement opportunities.

Functional Group Approach: This approach is useful when a particular function is failing repeatedly. In this case, start by identifying the specific function that is repeatedly failing as the improvement opportunity. This type of CSI effort can work well as a pilot for a broader CSI effort.

Back to our insurance company example: The company had a variety of disparate business units and realized that a single approach would not be effective. So the company used all three approaches, based on what worked best for each business unit. In addition, they created an entire department that just focused on organizational change and the "people factor." This department developed its own methodology — tailored specifically for the company — to overcome change resistance.

Gaining a Strategic View Through Governance

Approach governance with a strategic view. You'll need to adopt a service management perspective — focusing on providing business services, rather than on the individual technologies and systems. An added benefit is that an organization focused on service management is typically more proactive and is more aligned with the business. To govern is to put in place a set of rules and standards and then to ensure adherence to them. This is mostly done through the four Ps [*process*, *products*, *people*, and *partners*]. CSI becomes critical to the success of alignment and adherence to the governance standards set forth. The CSI implementation needs to review, consider, and understand all the business, corporate, and IT governance controls and work on monitoring and reporting on them.

Consciously Attending to Organizational Change

For successful CSI, you'll need to address the "softer aspects" of organizational change. Pay particular attention to this, particularly because service-aligned CSI requires the involvement of representatives from different functions working together in new ways. Aspects of organizational change include overcoming resistance to change; gaining commitment from participants; empowering, motivating, and involving participants; and central to all of this, establishing effective communication.

ITIL recommends the approach in John Kotter's Eight Steps to Transforming Your Organization[20] as a model for addressing the organizational change required in CSI. Refer to the *Continual Service Improvement* publication for a detailed discussion of the eight steps.

An Organizational Transformation

The first step in Kotter's model is to create the urgency or need for change. In our insurance company example, many people in the company were content to operate as they had for years. Then, in a short period of time,

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20 Kotter, *Leading Change.*

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two major hurricanes hit in areas where the company provided insurance, and the company's profit margins dropped dramatically. This huge decrease in profit margins created an urgent need for change. Management realized that they either had to become more efficient and effective as a company, or they would face major layoffs. They decided to seek areas where they could become more efficient and productive. The aftermath of the hurricanes provided the urgent need that started this approach to CSI.

Attaining institutional change requires persistence. A common pitfall is for CSI teams to be disbanded before changes have truly taken hold. The strong pull to revert back to the old way of doing things can win out if the focus on CSI is not maintained.

You can institutionalize change by hiring people who are service focused to begin with, training both new and existing staff on the core values of ITIL and on maintaining a service focus, and consistently reinforcing behaviors and attitudes that align with CSI goals.

Organizational Culture Is Key
For CSI to have maximum benefit, the CSI way of doing things needs to become an integral part of the organizational culture. The path toward CSI becoming part of an organization's culture begins with the behavior of individuals.

Changing employees' behaviors requires positive role models in the form of senior management who truly embrace CSI and demonstrate their commitment by consistently following CSI-prescribed processes. It also requires continual feedback for employees and reinforcement through alignment of employees' development goals and compensation.

The Importance of Effective Communication
Effective communication is key to the success of your CSI effort; in particular, communicate often on matters regarding any changes to the established way of doing things.

As communication works its way down through the strategic level to the tactical level and finally to the operational level, much of the original focus and impact can get lost. To alleviate this, be sure to target clear communication to every level of the organization. Also, remember to keep people informed about why certain actions are taking place, not just *what* the actions are.

Summary
Pick an approach that will help you reach your first goal, and do not be afraid to start small. Demonstrating success is still the most powerful way to get more resources. Success with CSI requires a different way of thinking and, ultimately, organizational change. The "CSI way" needs to be part of the organizational culture, starting from the top. Communicate continually to employees at all levels about the importance of CSI, as well as progress made.

Chapter 9:
Challenges, Risks, and Critical Success Factors

The *Continual Service Improvement* publication outlines in bullet points the key challenges you may face as you set out on your CSI initiative. It also presents critical success factors (CSFs), including a CSI owner and appropriate technology to support CSI. Finally, it summarizes the risks in undertaking a CSI initiative. By their nature, many of these points are overlapping; for example, *not having management commitment* is a challenge, while *management commitment* is a CSF.

Collaborative executive commitment is critical to successful change. If you don't have the support of upper management, success will be very difficult to achieve. You'll need executive support when dealing with a particularly difficult change model or if you encounter resistance from others. Numerous examples exist of CSI projects that were huge successes — the common denominator in all was strong executive commitment. Similarly, there are numerous examples of unsuccessful CSI projects — all with little or no executive commitment.

Summary

Use the lists in Chapter 9 of the *ITIL Continual Service Improvement* publication as a starting point to review your own unique situation and to prepare strategies for addressing the challenges, meeting the CSFs, and alleviating the risks.

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Conclusion

Don't wait another day to start your CSI program. Even the best IT organization has room for improvement, and there is always opportunity to increase the value that IT provides to the business.

CSI should be an integral part of each stage of the service lifecycle — from strategy, to design, to transition, to operation. Carefully follow the CSI approach and Seven-Step Improvement Process, and combine them with the Plan-Do-Check-Act and Data-Information-Knowledge-Wisdom methodology to get the most from the data you collect. Analyze the information thoroughly, and collaborate with your business counterparts to make sound decisions based upon what's important to the business.

To be successful in your CSI efforts, follow the guidance in this booklet, but be sure to refer to the *ITIL Continual Service Improvement* book for a more detailed discussion of key points. Select technology that enables you to monitor performance, identify issues and trends, and manage IT from a business perspective. You'll also want to keep an eye on the end-user experience with a service — and not just the infrastructure components supporting it — to ensure that the service is operating as expected.

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Continual service improvement can transform your business by utilizing new processes and technology or those that can evolve from your current assets (capabilities and resources). New technologies, such as cloud computing, are transforming business services. Whether CSI is transformational or evolutionary, the goal is improvement of business services for value realization.

As you work on your CSI efforts, be sure to update these activities regularly as your organization moves forward to meet the demands of new service delivery models and increased end-user expectations. The need for greater agility and lower costs has encouraged more organizations to move services to the cloud. Many organizations are taking a SaaS-first approach to service management. The services you provide will need to meet end-user expectations in an environment where more personal devices are used in the workplace and end-users expect them to be managed, just like corporate resources.

It's critical that you also ensure that any SaaS-based solutions you choose can maintain any existing or proposed integrations between systems. You must also deliver services while supporting a proliferation of mobile devices. And you need to address and accept how users are relying on social media as part of IT service management.

Find an area that's important to the business and focus your initial CSI efforts there. The time to start your CSI initiatives is now.

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