Lesson 9 Study Guide
Metrics and Measurement

Metrics and Measurement

Welcome to the eighth chapter of your Study Guide. This document is supplementary to the information available to you online, and should be used in conjunction with the videos, quizzes and exercises.

After your subscription to the course has finished online, you will still have the Study Guide to help you prepare for the Continual Service Improvement exam - if you've not taken the exam by the time your subscription expires.

At the end of each Lesson as you progress through the course, you'll be prompted to download a new chapter of the Study Guide. By the end of the course, you'll have 18 chapters that build up into the full guide.

This Chapter contains the Study Guide information for **Lesson 9 – Metrics and Measurement.**

Use this Study Guide in conjunction with your own notes that you make as you progress through the course. You may prefer to print it out, or use it on-screen.

After each Lesson, you can consolidate what you have learnt whilst watching the videos and taking the quizzes by reading through the chapter of the Study Guide. If you progress on to do the Continual Service Improvement exam, your Study Guide will provide you with vital revision information.

Remember, your Study Guide is yours to keep, even after your subscription to Continual Service Improvement Course has finished.

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Study Guide Icons

Watch out for these icons as you use your Study Guide. Each icon highlights an important piece of information.

	Tip – this will remind you of something you need to take note of, or give you some exam guidance.
	Definition – key concept or term that you need to understand and remember.
	Role – a job title or responsibility associated with a process or function.
	Exercise Solution – suggested solution to one of the exercises you will complete throughout the course.
	Purpose or Objective – for a particular process or core volume.

Lesson Contents

This lesson covered some further topics related to the metrics that underpin CSI.

We studied:

- **The types of metric**
- **How many Critical Success Factors and Key Performance Indicators?**
- **Tension Metrics**
- **Goals and Metrics**
- **Organizational Metrics**

Syllabus Reference

The information in this lesson relates to syllabus section CSI04. You can use your syllabus document to identify areas in the CSI volume for further reading as part of your self-study.

Metrics and Measurement

There are 3 main types of metrics that support Continual Service Improvement activities, and need to be collected in every organization.

These are:

- **Technology metrics**
- **Process metrics**
- **Service metrics**

A metric is a scale of measurement defined in terms of a standard or well-defined unit. Metrics are a system of parameters or ways of quantitative assessment of a process that is to be measured. Metrics also include the processes to carry out such measurement.

Metrics define what is to be measured. They are often specialized by their subject area. This will mean that they are valid only within a certain domain, and cannot be directly benchmarked or interpreted outside it.

Generic metrics can be aggregated across subject areas or business units. Generic metrics could include areas such as customer satisfaction, which can be compared across domains.

Metrics are used in business models such as the Capability Maturity Matrix. They also support processes such as Knowledge Management.

Metrics are used to track trends, productivity, resources and more. Many metrics are defined as Key Performance Indicators because of their importance to the business.

How Many CSFs and KPIs?

One question that many organizations struggle with is how many Critical Success Factors and Key Performance Indicators to put in place.

We looked at some guidance that can be tailored for your organization.

	Critical Success Factor	*"A Critical Success Factor is something that must happen if a process, project, plan or IT service is to succeed. Key Performance Indicators are used to measure the achievement of each Critical Success Factor."*

Critical Success Factors for Continual Service Improvement could include:

- The appointment of a Continual Service Improvement Manager – without whom we cannot progress effectively
- The adoption of Continual Service Improvement within the organization – again a fundamental early step in adopting an improvement culture

Critical Success Factors should help us to define what success looks like. Key Performance Indicators help an organization define and measure progress toward organizational goals.

Once an organization has analyzed its mission, identified all its stakeholders, and defined its goals, it needs a way to measure progress toward those goals. Key Performance Indicators are those measurements.

Key Performance Indicators are quantifiable measurements agreed beforehand, that reflect the Critical Success Factors of an organization.

Qualitative and Quantitative

Key Performance Indicators can be qualitative or quantitative.

Qualitative measures are related to, or expressed in terms of, quality. Qualitative research is based on individual, often subjective, analysis. Customer Satisfaction is an example of a qualitative measure.

Quantitative measures are based on quantities or numbers. This means they can be more objective – such as number of incidents, first time fix rate and so on.

We need to a balance of quantitative and qualitative measures to get a holistic view of a service.

Once Critical Success Factors and Key Performance Indicators are defined, we can start to define the measurements and metrics that support them.

We worked through some examples.

Critical Success Factor
Improving IT service quality
Key Performance Indicator
A 10 percent increase in customer satisfaction rating for handling incidents over the next 6 months
Metrics
▪ Original customer satisfaction score ▪ New customer satisfaction score
Measurements
▪ Incident handling survey score ▪ Number of survey scores

Critical Success Factor
Reduce IT costs
Key Performance Indicator
A ten percent reduction in the cost of handling printer incidents
Metrics
- Original cost of handling printer incidents   - Cost of the improvement effort   - Final cost of handling printer incidents
Measurements
- Time spent on incidents by 1st and 2nd line staff, and their average salary   - Time spent on Problem management by staff, and their average salary   - Time spent training 1st line support on workarounds   - Cost of a service call to a 3rd party vendor, and time and material from the vendor

So, how many Critical Success Factors and Key Performance Indicators should we have?

The opinions on this are varied. Some recommend that no more than six to eight Critical Success Factors, and two to three Key Performance Indicators per Critical Success Factor, are defined at any given time.

This is to ensure we do not put too much effort into reporting, and only focus on what is important.

It is recommended that in the early stages of an improvement program only two to three Key Performance Indicators for each Critical Success Factor are defined, monitored and reported on.

As the maturity of a service and service management processes increase, additional Key Performance Indicators can be added.

Based on what is important to the business and IT management, the KPIs may change over time.

Tension Metrics

Support teams have to constantly balance these 3 areas:

- **Resources**
- **Features**
- **The schedule**

The product or service a team can deliver is the result of trade-offs between these three elements.

Tension metrics can help create balance by preventing teams from focusing on just one element. For example, if the business is focused on delivery to schedule, a manager may flex the resources and service features in order to meet the defined delivery schedule. This unbalanced focus will lead to budget increases or lower product quality, or both.

Tension metrics help create a balance between shared goals, and help to deliver a product or service according to business requirements - within time and budget.

They can be seen as a tool to create shared responsibilities between team members with different roles in the service lifecycle. They will prevent one team taking a short cut or dodging a task, which will have consequences elsewhere in the lifecycle.

Goals and Metrics

Each phase of the service lifecycle requires very specific contributions from the key roles within Service Design, Service Transition and Service Operation.

Each of these individual elements has its own specific goals to meet. Goals are set for each lifecycle phase, and must then be reflected within the goals and objectives set for each individual role.

For example, Service Transition needs to manage changes to support business requirements. To fulfill this, Service Transition staff need goals and objectives related to how they manage changes.

The quality of the overall service will be determined by how well each role meets its goals, and how well conflicting goals are managed.

To support effective management, it is crucial that organizations measure performance by applying a set of metrics to each goal.

Many IT organizations have developed a set of abstract, high level measures over time. Personal objectives such as adding value or following certain methodologies do not help to support the service lifecycle. We need more detailed measures that are aligned to the lifecycle and business drivers.

The way to resolve this issue to use what we already have.

When a service is designed, business requirements are translated into Service Level Requirements. This is, in effect, translating business needs into IT terminology. These requirements can be used to define how our processes and staff should be measured, ensuring all our measures are fully aligned to business goals.

In order to achieve alignment between IT and business goals, it is necessary to break down goals and metrics.

Goals and metrics can be classified into 3 categories:

- Financial metrics
- Learning and growth metrics
- Organizational or process effectiveness metrics, which are broken down into product and process quality metrics

The table below shows some examples of Service Quality Metrics.

"Measure	Metric	Quality goal	Lower limit	Upper limit
Schedule	% variation against revised plan	Within 7.5% of estimate	Not to be less than 7.5% of estimate	Not to exceed 7.5% of estimate
Effort	% variation against revised plan	Within 10% of estimate	Not to be less than 10% of estimate	Not to exceed 10% of estimate
Cost	% variation against revised plan	Within 10% of estimate	Not to be less than 10% of estimate	Not to exceed 10% of estimate
Defects	% variation against planned defect	Within 10% of estimate	Not to be less than 10% of estimate	Not to exceed 10% of estimate
Productivity	% variation against productivity goal	Within 10% of estimate	Not to be less than 10% of estimate	Not to exceed 10% of estimate
Customer satisfaction	Customer satisfaction survey result	Greater than 8.9 on the range of 1 to 10	Not to be less than 8.9 on the range of 1 to 10"	

CSI table 5.6 Examples of service quality metrics

Organizational or process effectiveness metrics can be further broken down into product quality metrics and process quality metrics.

- **Product quality metrics** are metrics supporting the contribution to the delivery of quality products
- **Process quality metrics** are the quality metrics related to efficient and effective process management

Organisational Metrics

To be effective, measurements and metrics should be woven through the complete organization, touching the strategic as well as the tactical level.

Metrics should be able to be linked back to an organization's objectives and values.

To successfully support the key business drivers, the IT service manager needs to know what and how well each part of the organization contributes to the final success.

It's important when defining measurements for goals that support the IT services strategy, to remember that measurements must focus on results and not on efforts. Focus on the organizational output, and try to get clear what the contribution is.

Each stage in the service lifecycle has its own processes and contribution to the overall service. Each stage of the lifecycle also has its roles, which contribute to the development or management of the service.

Based on the process goals and the quality attributes of the service, goals and metrics can be defined for each role in the processes of the lifecycle.