TECHNOLOGY BRIEF: SERVICE LEVEL MANAGEMENT IN A BUSINESS CONTEXT

Managing Service Levels from an Organizational Perspective

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IT SERVICE MANAGEMENT PRACTICE

Transforming IT Management.

Table of Contents

Executive Summary

Challenge

Traditionally, businesses operate under strategic objectives that are outlined to direct the organization towards an overall goal. These objectives are the basis for departmental targets. Typically, these objectives will translate into specific tactics for improving productivity, decreasing costs, growing margins, improving customer satisfaction and a number of other measurements that improve the performance of the business. While these objectives and goals are established for the business operations, in many organizations they are not translated into measurable tactics for IT. This lack of alignment for measurable success tends to cause a disconnect in communication. In today's competitive marketplace, organizations must have better insight into their operating costs and performance levels to drive greater profitability. Alignment of IT with the business through defined and measurable services is one method for gaining better visibility and establishment of a common language.

Opportunity

Establishing Service Level Management (SLM) metrics from a business viewpoint is key to realizing optimal Service Management success. By applying and understanding IT Infrastructure Library (ITIL®) best practices, CA has a proven approach to help you manage SLM throughout your entire organization while achieving better IT and business alignment. CA has learned through many customer interactions that they typically start with a Service Desk as their initial entry into Service Management, which is in a service support type of role. ITIL v2 has spent a lot time on the role of the Service Desk and the service support process area, which has become the enterprise's face to IT and the backbone for the typical IT support processes. Incident, problem, and in many cases, change management issues are now well understood and are being effectively managed. SLM is the most appropriate next step towards evolving your IT group into a service-focused and business-aligned organization.

Benefits

Understanding the different layers of SLM within your organization can provide you with the following benefits:

- By moving towards SLM, your organization can better understand the functions of IT by establishing baselines for performance, availability and accountability. The result is that IT can deliver services with an accurate understanding of costs and performance and clearly communicate to your consumers.
- The goals established by your business are better understood and aligned with the IT department.
- IT is working (like other departments) towards the strategic objectives of your business.

SECTION 1: **CHALLENGE**

Effectively Managing Service Levels Throughout Your Organization

Different layers within an organization can have many different views of the key performance indicators that, in many cases, make up the service levels for IT. The challenge is to get everyone in the organization to understand how service levels managed at each layer can affect the overall success of the organization. This technology brief focuses on how you can align service levels among the three layers within your organization, which are: the business, service operations and the IT infrastructure.

Business Service Levels

From the business executive's viewpoint, service levels are included in contracts or Service Level Agreements (SLAs) that are based on meeting customer satisfaction to drive business revenue. In today's environment, an unsatisfied customer means loss of business and revenue. In order for the business to understand and react appropriately to a service measurement, it must be in a language that has alignment to their goals and tactics. Examples of some business scenarios where service levels could be defined include:

- The billing department produces and distributes invoices in an accurate and timely manner through automated process systems, allowing a company to quickly process invoices to expedite receivables.
- Customers have online access to their accounts and their user experience is excellent due to agreed-upon response times. This results in positive customer satisfaction and increased retention ratings from online customers.
- Sales agents can quickly quote and execute an order through the order processing system, thereby increasing the time to contract.

Service Operations Service Levels

The service operations layer serves as middle ground for alignment of IT and the business. This layer allows for the definition of IT services and the alignment of those services to business processes. In many organizations this layer is represented by the Service Desk or Service Catalog. At this layer the measurement of IT services are mapped between the upper layer (business measurement) and the lower layer details (the technical attributes of the service). Some examples of service levels that the service operations layer would measure include:

- Performance and/or availability of the automated invoice management system.
- Customer service ratings, performance measurements for the online Internet site.
- Response times, availability, and others of the order processing application.

IT Infrastructure Service Levels

From the infrastructure layer, SLAs, traditionally, are the operational metrics that are monitored and measured to understand IT performance. These SLAs are more focused on systems or processes that make up the services and are often based on technical IT metrics. The main responsibility of the infrastructure layer is to help ensure availability of the systems. The metrics at this layer are responsible for establishing preset thresholds to help ensure that systems that are about to cause a violation, which could result in down time or loss of a component of a service, are dealt with appropriately to prevent service outage. These metrics are also referred to as Operational Level Agreements (OLAs). Examples of OLAs can include:

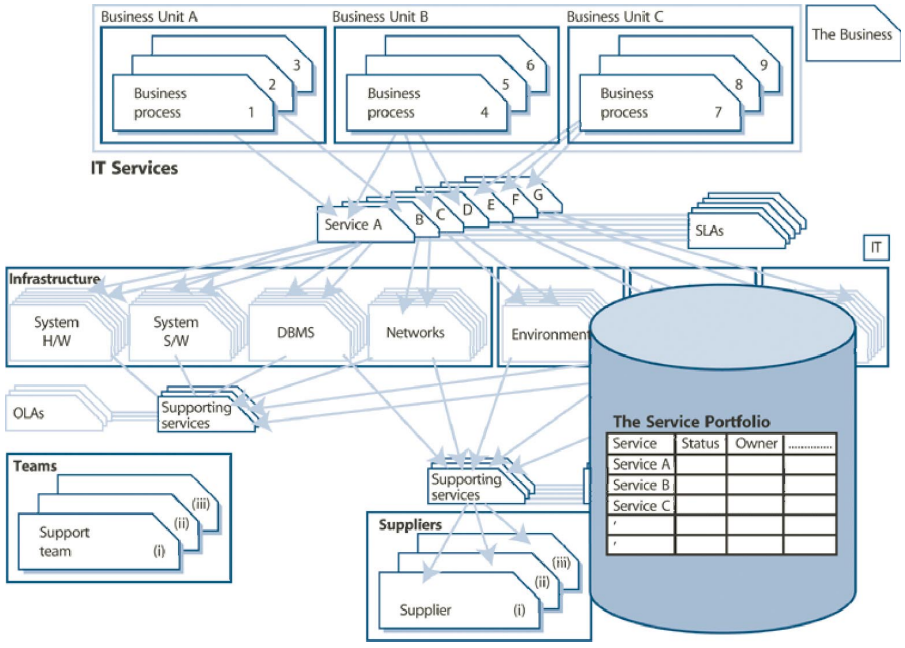
- CPU utilization (that is, must not exceed 95% CPU for more than 5 minutes) for the invoice processing server.
- Network throughput of the host web server.
- Transaction process time on the database server must be less then 3 seconds.

Figure A below, taken from the Official Introduction to the ITIL Service Lifecycle1, illustrates the different relationships within an organization and how they interact when developing SLAs. The business processes are supported by IT services. For example, an online banking system could be supported by IT services such as data backups, batch data feeds, and software upgrades, etc. Each one of these services would get published to the Services Catalog along with associated service level agreements.

FIGURE A

SLM and the Role of the Service Portfolio/Service Catalog.

BUSINESS/SERVICE/SLA RELATIONSHIP



The IT services are comprised of IT Infrastructure components such as System Hardware, Software components, Databases, and Network components, etc.

From an IT Service Design perspective, it is best to take a top-down approach where you identify the major services that support the business process first. Once the IT services are identified, you can decide what IT infrastructure components really need to be monitored. Traditionally, the business and IT organizations have operated in silos and IT would have the tendency to monitor IT Infrastructure components without regard to the business goals provided by the services. This, in some cases, leads to meaningless SLAs that do not reflect the needs of the business.

Defining Service Level Requirements Across the Organization

The SLM approach to aligning the business with IT starts with an analysis that focuses on the core services provided by the organization. SLM is a continuous or ongoing process, so you should start off slowly by looking at one or two key business services that you want to model. Once you pick a service, you should start by asking the relevant business departments what type of service quality is expected. It is important to put quantifiable metrics around the service levels that are expected. This top-down approach is based on the business objectives. It's important in the initial design phase for the IT organization to truly understand the needs of the business. The design at this level should focus on metrics such as availability, response times and costs, and not on size of CPUs, network router capacity, and transaction times, etc.

The type of questions that should be answered during the business assessment of the design would be as follows.

- What type of availability do you require?
- What's the consequence of loss of service?
- How long can you survive without the service?
- How much do you expect to pay for the level of service you are requesting?
- What is the expected user experience?
- What are your peak usage periods and how do they affect the quality of service?
- What is the anticipated demand (growth) for the service?
- What reports does the business need to support SLM contracts?

Once the business requirements are understood, the IT department can start to model the IT service. This starts by defining the components that make up the service. During this phase, the people, processes, and technologies that make up the service are identified. This allows the IT department to align the performance of the infrastructure to the business goals.

The challenge is to provide meaningful metrics at each level in the organization that will support the overall business objectives. To implement a successful SLM solution, the IT organizations first needs to understand what the capabilities of its infrastructure are. Some key points to address are as follows:

- Is there any baseline monitoring data to support the performance of the components that make up the service?
- Do you have the ability to perform root cause analysis when incidents occur to prevent reoccurring outages?

- Is there any trend analysis data to support changes to user requests and behavior?
- Do you have the ability to receive alerts and status changes about the service to prevent outages before they occur?
- Is there required service downtime that needs to be taken into consideration for system maintenance, system backups, etc.?

Once these requirements have been outlined, the challenge for the IT organization is to determine the cost of the service required to support the goals of the business. It is important for the IT organization to be able to come to an agreement with the business through an SLA where the expectations of both parties are clearly understood. The relevant IT and business organizations should continuously meet to review and receive input on the quality of the service and ways to improve it. Some questions that IT can ask include:

- Is the service at the level they are expecting?
- Are they willing to pay more for a better quality of service based on business requirements?

After the initial SLM implementation, it is important to understand that SLA requirements will need to be adjusted as business requirements change. It is important to understand that SLM is an iterative process and it requires continuous improvement mechanisms to be employed.

From the service operations layer, it is not uncommon for organizations to establish user satisfaction metrics around the level of service being delivered. An organization may publish a service that meets the predefined metrics in terms of availability and performance, but what about user satisfaction? For example, a company may have an online service that requires users to enter duplicate information when processing a bank loan form or an insurance claim, or the online system has a slow response time. This could lead to frustration by the users and eventual loss of customers. Customer satisfaction metrics are other key metrics that are collected by a defined service operations layer. In many organizations, these are collected through the Service Desk function. This in itself can be reported on and tracked as an SLA. This also serves as another form of continuous monitoring that helps ensure that the whole process of delivering a service is constantly being tracked and that feedback is received for improvement.

SLM Process Scenario

Here is an example of how CA views SLM and how applying ITIL best practices can improve the performance of a key service that is provided to customers.

A financial services business has recently conducted a survey with their banking customers and the results have highlighted the poor performance of their online banking system. Based on the survey results, the business organization has developed a new strategic plan with a goal to increase the number of personal bank accounts by 40%. This business requirement calls for the deployment of a new online banking application to improve performance for existing customers as well as attract new customers.

In order to fulfill this requirement, the business engages with IT through a formal SLM process. The SLM process outlines how IT will design and deliver a service to meet the needs of the business requirement.

Once the business has defined their need through a business requirement for the new banking application, IT will work hand-in-hand with the business to specify how and what IT will deliver to meet this requirement. IT will develop a service specification that details out how they will deliver and fulfill this need through formal IT services (access, hosting, application development, systems administration, etc.). These services are mapped to the delivery of the overall business requirement and establish the expectation on quality and cost factors in terms that the business can easily understand. Once the business and IT are in agreement (through an SLA) for the new business service, IT will develop and deploy the service. Once the service is operational, IT will monitor and report to the business on the use, performance and value (based on cost, risk, revenue, and efficiency, etc.) of the service.

The outcome of the SLM process is the following:

- A Service Catalog with a clearly defined service definition that meets objectives that the business can understand.
- The business knows exactly the cost to deliver the service.
- A method that clearly defines how the service will be measured for performance and availability as it relates to the business goals.
- A set of key performance indicators that will track the progress of the service from the different layers in the organization.
- The establishment of a formal SLA between the business and IT organization.
- Data to support the justification for funding to improve the quality of service.

SECTION 2: **OPPORTUNITY**

CA Service Level and Catalog Management

Service Catalog — The User View

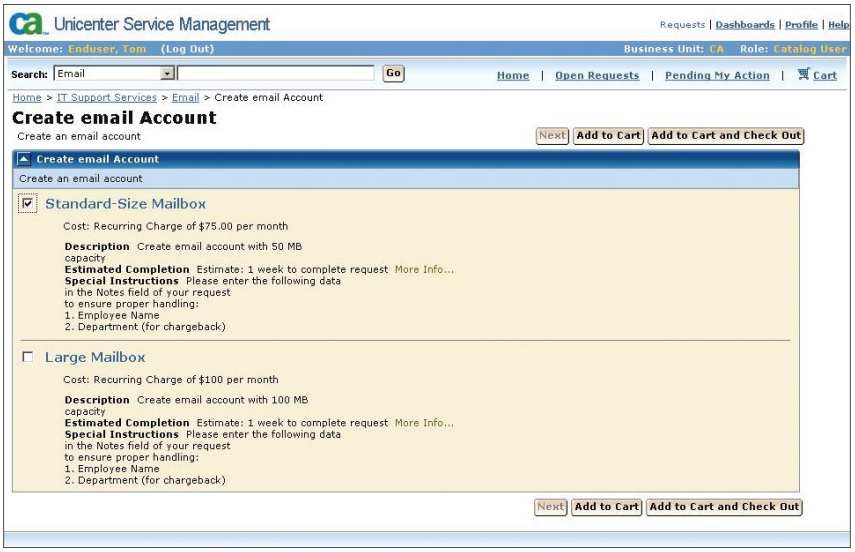
CA Service Level and Catalog Management (SLCM) utilize the best practices of ITIL. In the latest release, ITIL v3, a larger importance is placed on the Service Catalog, which contains a description of services from which the user can subscribe. For the business layer this provides a user-friendly interface with easy-to-understand descriptions of the services and associated service levels and costs. This serves as a bridge to help align the business and IT layers within your organization. Defining the services and their associated levels of service allows the business to make informed decisions about the level of service required to run the business.

Figure B shows the view of a service for creating an email account in CA Service Catalog. Notice how the description and cost of the service is clearly defined and how it also indicates who will be responsible for the charges.

FIGURE B

Email service definition and description created with CA Service Catalog.

EMAIL ACCOUNT SERVICE



Once the customer requests the service, a predefined and automated workflow process routes the request to the appropriate approver, and upon approval, the fulfillment process is initiated.

Customers can receive email notifications about the status of the requested service and can always check on the status of the request by logging into the CA Service Catalog.

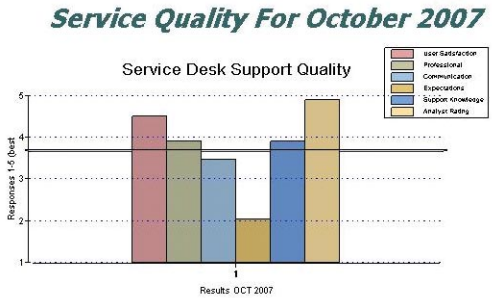
CA Service Desk Manager — The Service Support View

As part of the CA Service Desk function, metrics can be reported on about the quality of the service provided by the CA Service Desk or a particular service. Figure C shows a report that was created by the report builder, a component that comes with CA's Service Management products.

FIGURE C

Metrics provided for CA Service Desk service quality report.

CA SERVICE DESK REPORT ON SERVICE QUALITY



Average Rating per Question Type

User Satisfaction	Professional	Communication	Expectations	Support Knowledge	Analyst Rating
4.51	3.92	3.47	2.03	3.91	4.91

The report builder allows you to create performance reports that can be published to the CA Service View dashboard. These reports can provide visibility across your entire organization about performance of different SLAs.

CA Service Metric Analysis — The IT Operations View

In order for any organization to make informed decisions about the levels of service that can be provided, a monitoring system is needed at the IT infrastructure layer. CA Service Metric Analysis (CA SMA) provides the ability to collect and report on availability and performance levels of IT devices. CA SMA looks at service level agreements from a bottom-up approach and provides baseline statistics to help IT organizations review performance and availability data for key IT infrastructure components. Before the IT organization can commit to SLAs, it would be prudent to have established baseline metrics on the availability and performance of the core IT components that make up a service. If you have existing monitoring tools in place, CA SMA also has an Import Wizard that allows you to produce availability and performance reports from data produced by these tools.

The features of CA Service Metric Analysis are:

- Provides you with historical trend graphical reports about the performance of your IT infrastructure. This helps you to make better informed decisions about SLA agreements.
- Measures and produces service level reports and statistics for resources within the IT infrastructure that can be viewed and measured against defined service goals.
- Sends an email notification when service goal violations occur.

Figures D through F represent examples of reports called Report Groups that CA SMA can produce. Figure D is a performance report that shows the response time of a web server in milliseconds. Note that the report is based on a business calendar of 24 hours for 7 days a week. In the event that you want to report on a service that does not need to be available 24 hours a day, 7 days a week, you can apply a calendar that will provide availability reports for specified time intervals. Reports such as these are helpful in defining baseline performance trends over time. The report also provides statistics on the average response time, and maximum and minimum response times for the given reporting interval.

FIGURE D

CA SMA report displaying response time of web server.

PERFORMANCE REPORT

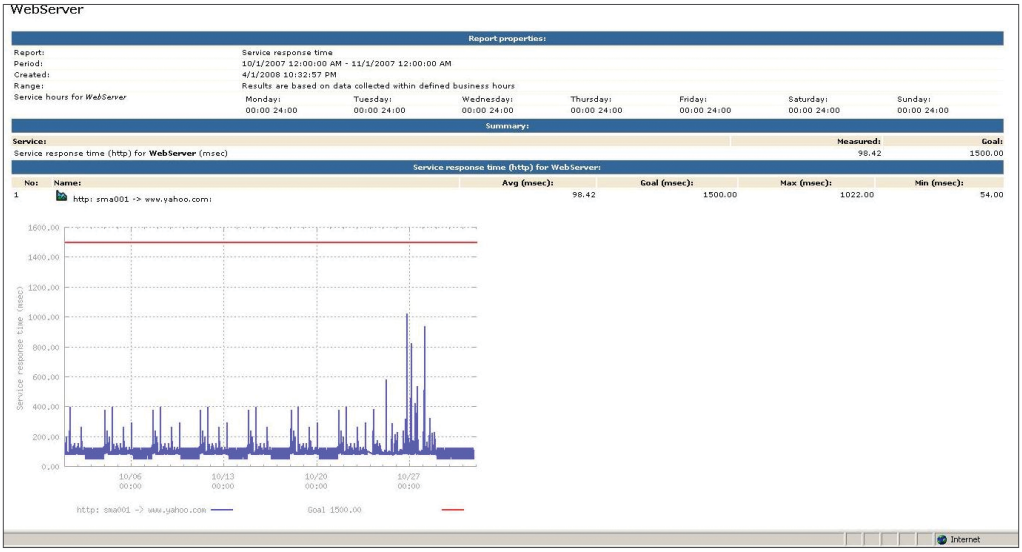


Figure E is an availability report. It shows the availability of a server over a specified period of time. The graphically represented output shows periods where downtime was encountered.

FIGURE E

CA SMA report displaying availability of server.

SERVER AVAILABILITY REPORT

Figure F provides another example of a performance report that is created by inputting data into CA SMA using the custom import wizard. From the business point of view, this could represent an important business function that is required to support a critical service in your environment. For example, it could represent the time to process an import data feed, database transaction or processing time of an important business transaction. Based on the length of time it takes to process, SLA violations can be generated if the total time to process the job is greater then a preset threshold.

FIGURE F

Service availability report that the business organization can relate to.

SERVICE AVAILABILITY REPORT

This is an example of a report that the business organization can relate to. It represents a service that is understood by the different layers in the organization.

CA Service Assure — The Business View of IT Services

Instead of looking at data such as CPU utilization, network bandwidth, etc., CA Service Assure aggregates this data and reports on metrics that make sense to the user, such as the actual availability of the their email system or web application response time.

To achieve a view of IT services from a business perspective, it is necessary to define IT service delivery commitments to the business. A critical first step is to be able to gather sufficient data to understand how the business actually consumes IT.

CA Service Assure provides transparency into IT operations and business so you can create meaningful SLA contracts between IT and the business. It supports process-driven SLM between the IT provider and the business customers based on best practice recommendations. The bottom line is that you need to translate IT metrics into manageable Service Level Objectives (SLOs) and key performance indicators.

CA Service Assure includes an array of features and functions that simplify and automate many aspects of IT service contract creation and administration. Built-in, customizable templates take information from predefined SLAs and automatically generate service contracts.

SECTION 3: **BENEFITS**

Effective Management of Service Levels

CA believes that providing an SLM solution at the organization layer will allow you to better manage your expectations and business goals. Designing the services from the top-down with the understanding of the three different layers and roles helps to provide service level agreements that are realistic.

Some direct benefits are:

- Monitoring of service components with a tool such as CA SMA will provide feedback for areas of improvement by providing trends on the performance of measured IT resources.
- Historical reporting provided by CA SMA will allow the organization to better understand and negotiate both internal and external SLA contracts.
- Constant feedback to the different layers in the organization will help to meet and exceed customer expectations with an improved quality of service.
- The alignment between the business and IT organization will be better understood. CA Service Catalog will help to bride the gap between the business and the IT organization by having services clearly defined in the service catalog with associated SLAs. The approval and fulfillment of services requests are also clearly defined and known by everyone in the organization.
- Service level managers can provide meaningful reports to the business on service performance. Both the Report Builder tool and Report Groups produced by CA SMA will help to provide a better understanding of the organization's key performance indicators (KPIs).
- CA Service Catalog and CA SMA provide you with comprehensive visibility into the performance and the total cost of delivering IT services.

SECTION 4: **CONCLUSIONS**

To successfully implement a Service Level and Catalog Management solution, you need to be able to publish services that users can subscribe to that meet agreed upon levels of services with associated costs. CA Service Catalog provides a means for the business to clearly see the value of the services provided.

From an organizational view point to help the IT organization commit to and deliver the optimal value, it is important to monitor and report on the essential components that make up the service. CA Service Metric Analysis can help to align the business and IT organization by producing meaningful reports to show availability and performance of IT infrastructure components that make up the services.

SECTION 5: **REFERENCES**

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SECTION 6: **ABOUT THE AUTHOR**

Gary Eisenhuth is a senior architect in the CA Services organization and has over 18 years of IT related experience. He currently is focused on architecting Service Management solutions for customers deploying CA Service Catalog. He has a solid background in network management and database management due to having implemented and architected many solutions for clients deploying CA NSM.

To learn more about the CA Service Level and Catalog Management solution visit **ca.com/solutions/** and for more information on CA and ITIL, visit **ca.com/itil**.

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