

# Service Lifecycle Management

## Using Service Manager 7.00 to Provide End-to-End Support of IT Services

### White Paper



© 2007 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

September 2007

# Table of Contents

Table of Contents .....	2
Introduction .....	3
The Service Lifecycle .....	3
Architectural Representation of Services .....	5
Defining a Service Catalog .....	7
Service Fulfillment .....	10
Establishing Service Levels .....	12
Service Level Objectives (SLOs) .....	12
Service Health .....	12
Service Availability .....	12
Process Response Time .....	13
Service Level Agreements (SLAs) .....	13
Service Definitions and SLAs .....	14
Managing Existing Service Instances .....	16
Viewing CI Relationships .....	16
Viewing Service Instances .....	19
Requesting Services .....	20
Managing Request Fulfillment .....	22
Self-Service Support .....	25
Tracking Service Subscriptions .....	26
Service Support Processes .....	27
Service Management Process .....	27
Managing Changes .....	29
Service Monitoring .....	30
Service Operations Dashboard .....	31
Measuring and Optimizing Service Delivery .....	32
HP Decision Center Analytics (DCA) .....	33
HP Decision Center Optimization (DCO) .....	34

# Introduction

The role of IT is changing. No longer is the IT department responsible only for technology. As businesses strive to increase efficiency, more and more processes are digitized. In fact, 80 percent of business practices are now carried out by an organization's IT department. Businesses are dependent on their own IT organization to satisfy corporate governance objectives, deliver competitive advantage, and meet increasing customer demand for 24x7 services.

All the attention now placed on the business value of IT creates the need to focus on the services IT delivers to its customers. It is necessary to clearly articulate what services are available and to make the services accessible to those that need them. Moreover, IT must ensure the optimal delivery and support of these services. This is true regardless of the type or size of the organization.

This white paper explains why the focus on services is of critical importance to IT and how the adoption of service lifecycle management practices is crucial to the establishment of proper service delivery and support. In addition, the paper illustrates how Service Manager 7.00 has been designed and positioned to provide IT with the tools needed to implement a service-focused strategy for supporting customers.

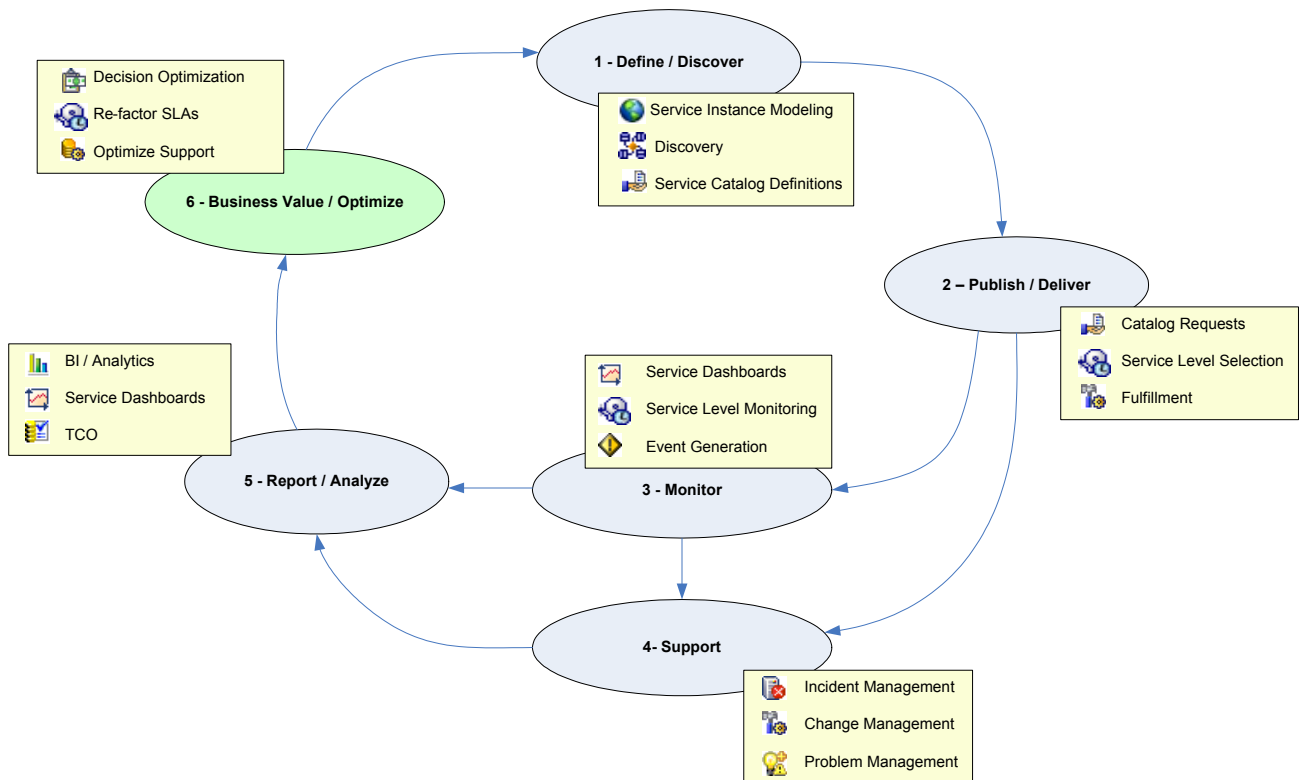
## The Service Lifecycle

Service Manager 7.00 provides a complete set of integrated lifecycle processes that support business and IT services from inception to retirement. A service is defined as anything provided by IT to satisfy a range of business needs. Services may be delivered to individuals, departments, or an entire enterprise. Sample services may include: enterprise systems such as email, line of business applications such as a billing system, and fulfillment of individual employee requests such as a personal workstation backup service or an office automation bundle.

The lifecycle activities and processes supported include:

- Modeling service instances using Configuration Management.
- Building and visualizing relationships to IT systems and CIs
- Publishing service definitions in the Service Catalog
- Defining supported Service Levels for each definition in the Service Catalog
- Self service requesting of services for individuals and departments
- Fulfilling service requests with Change or Request Management
- Tracking the full lifecycle of subscriptions to services, from request, to fulfillment, to cancellation
- Monitoring and supporting the services through Incident, Change, and Problem Management
- Measuring and analyzing service delivery against metrics and goals
- Optimizing service delivery and support

The following diagram shows these lifecycle processes and some of their related activities.



An important aspect of the lifecycle is that it represents a continuous flow. Within the cycle, new services are defined while others may be approaching retirement. New customers are added as users of services, while continued analysis and optimization makes improvements in the delivery and support received by these customers.

# Architectural Representation of Services

To better understand the Service Manager 7.00 approach to supporting the Service Lifecycle, it is important to first define fundamental terminology.

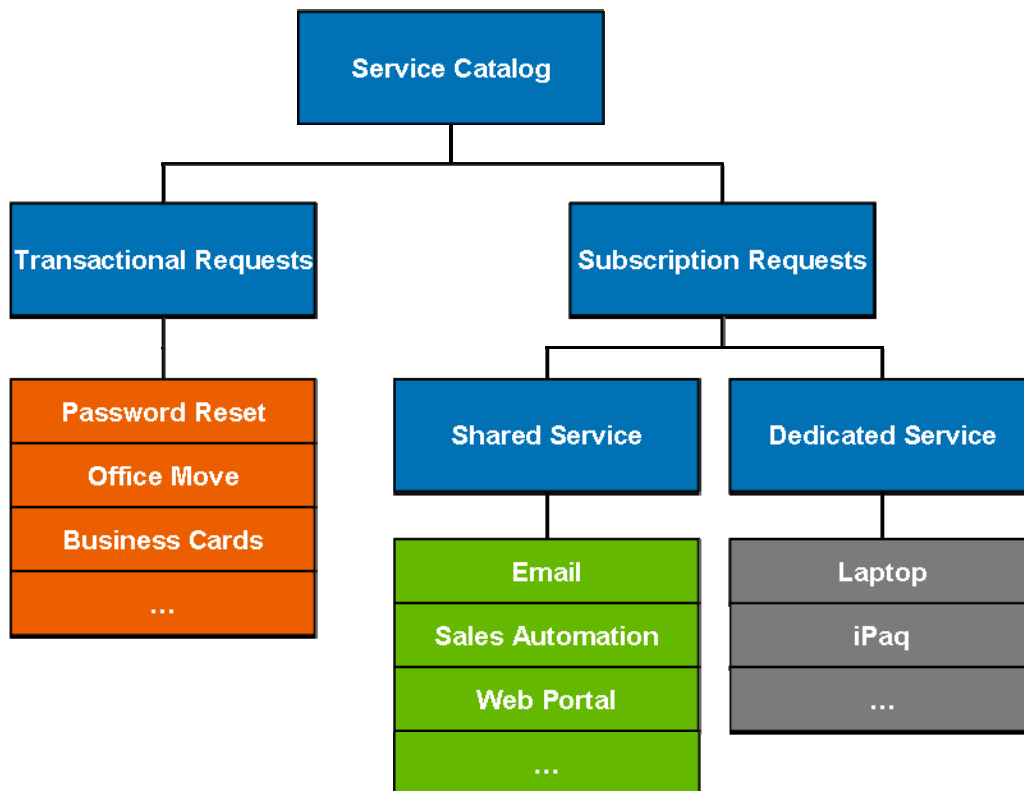
## Service

A **Service** is anything provided by IT to satisfy a range of business needs. Consider an IT Department at a major enterprise supporting various lines of business, departments, and employees in the company. IT customers can demand a variety of services. For example, IT may support the Sales Department through services that include support for a departmental Sales Automation System and provisioning salespeople with laptop and PDA bundles.

## Service Catalog

In a well-managed operation, IT uses a **Service Catalog** to list and describe all the services offered. The Service Catalog provides customers with a view to browse and make requests. The catalog documents information about each service, including details such as service descriptions, service levels, service options, service costs or charges, and service entitlement or approval policies.

The following diagram shows the range and variety of services that may be defined in a Service Catalog.



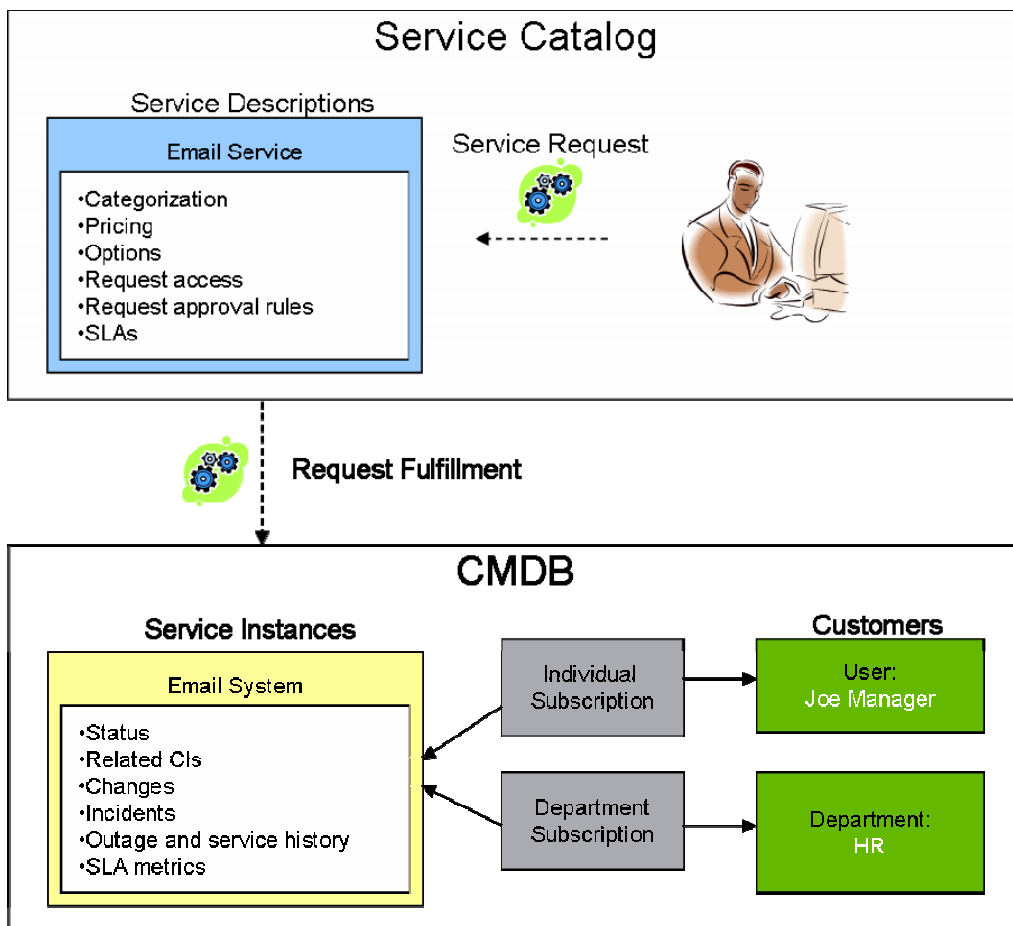
## Transactional Requests and Subscription Requests

A subset of services provided by IT consists of support for **Transactional Requests**. These requests are fulfilled by one time delivery of a good or service. However, the majority of important services provided by IT tend to have a longer lifespan. These are categorized as services supporting **Subscription Requests**. Subscriptions can target groups of users such as all employees in a department, and they are fulfilled through **Shared Business Services**. Other subscriptions target individuals, and they are fulfilled with **Dedicated Services** and may involve individually assigned equipment.

## Service Instances

The Service Catalog documents services at a general level so that they can be requested by IT customers. However, after a service is actually delivered, IT may need to track particular **Service Instances**. For example, an email service is deployed in the enterprise through a set of systems that include exchange servers, network devices, web servers, and databases. All of these components are modeled as configuration items (CI) in the Configuration Management Database (CMDB). At the top level, each service is also modeled as a CI with links to its related systems and components definition in the CMDB.

The following diagram shows the relationship between a Service Catalog definition of a service and its related Service Instance.]



## Service Subscriber

An important link can be established between services and the customers they support. A **Service Subscriber** is a customer signed up to use a service. Subscribers can range from individual users to entire departments.

## Service Subscription

A **Service Subscription** is used to track the relationship between IT customers and services they use. Subscriptions may include SLAs, history, custom options, and pending change requests.

# Defining a Service Catalog

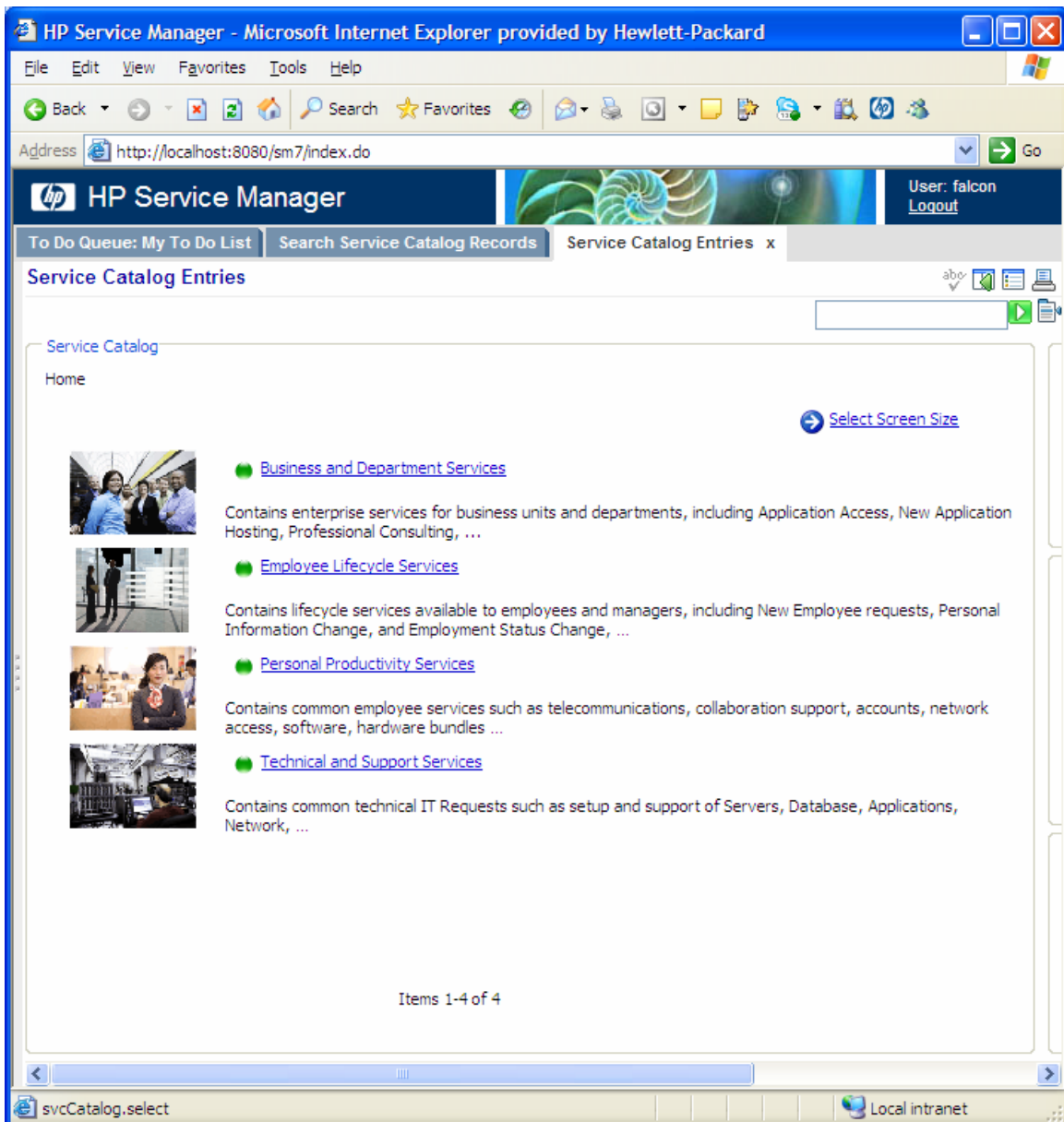
Service Manager 7.00 includes a Service Catalog module designed for publishing the full range of services supported by IT. This includes transactional, shared, and dedicated services. As services are defined in the catalog, they can be exposed to enterprise requesters and individual employees through a self-service, actionable web portal.

To facilitate implementation, the product includes a predefined categorization scheme and set of extensible service template definitions. The predefined catalog includes more than 35 categories and more than 100 services and bundles. The categories span major areas of IT support including the following areas:

- Personal productivity services
- Business services
- Employee lifecycle services
- Technical IT services

Within each item, the Service Catalog collects information for a service, including such details as service descriptions, categorization, costs, access rights, service request approval rules, delivery and support service levels, and custom options. The out-of-box definitions can be used as templates to start defining the specific services supported in an enterprise. In addition, new services can easily be defined through a web-based, wizard-guided process.

The following screen shows the self-service view for browsing services, and it includes some of these predefined categories.





After a service is defined, its details can be exposed to end users browsing or requesting services on the corporate intranet. For example, the following screen shows a detail screen for an email mailbox service and its options, costs, and service levels.

The screenshot displays the HP Service Manager web application in a Microsoft Internet Explorer browser window. The browser's address bar shows the URL `http://localhost:8080/sm7/ess.do`. The page title is "HP Service Manager" and the main heading is "Mailbox Services".

**Mailbox Services**

**Description**

Provides standard email mailbox services. Access support includes Microsoft Outlook and Web Based Email. The Standard mailbox size is 100MB. You may request additional storage capacity at an additional monthly charge to your department.

**Order Information**

Requested for:

Individual EMPLOYEE, SUE  Department

Quantity: \* 1

Deliver within: 6 Business Hours

Service SLA: \* Gold Service

Unit Cost: \$ 120.00

**Recurring costs of \$ 10.00 per .**

**Item options**

Please provide additional information for your mailbox service request:

Enable Web Access [+\$5.00]

**Storage Size**

100MB  
 150MB [+\$10.00]  
 200MB [+\$20.00]

**Attachments**

[Add to Cart](#)

[Back to Catalog](#)

svcat\_disp.item Local intranet

## Service Fulfillment

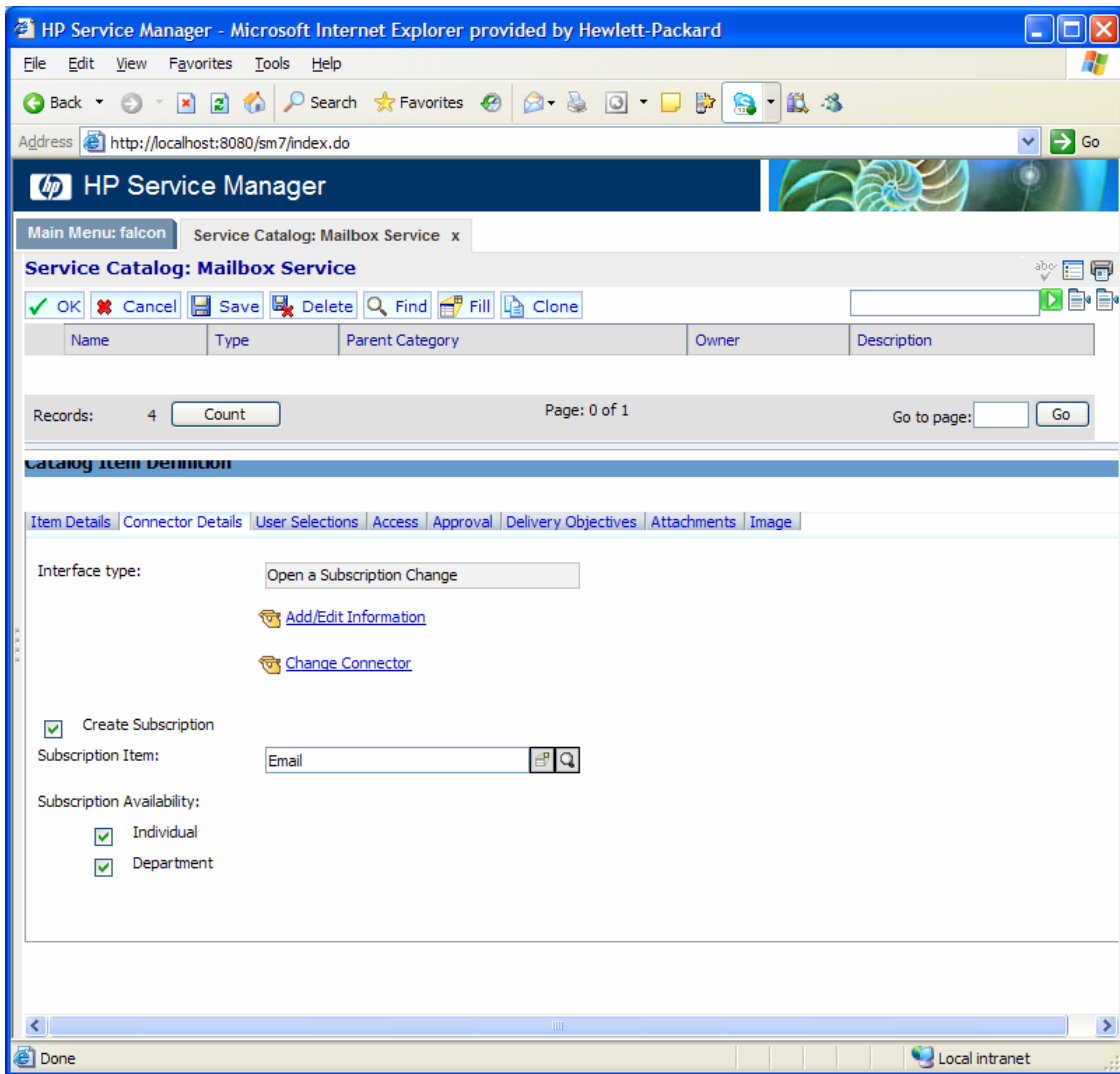
A key feature of the Service Catalog is its ability to identify how a request for service is fulfilled and how the deployed service is tracked over time. Integrated fulfillment is an important process. While the catalog defines services and exposes them to requesting users, the fulfillment process is where the actual job of delivering the service is performed. A variety of fulfillment options are available, including integrated support through Change and Request Management workflows.

Items can be fulfilled as subscribed services that are provided to the customer over a period of time. Such items are referred to as **Subscription Services**, which can be exposed to individual employees or limited to departmental requesters. For example, a Laptop Bundle service may be flagged to support individual requests that are tracked by a subscription for the duration that the laptop is deployed. On the other hand, deployment of a Business Application may be flagged as a departmental-only request that will be fulfilled by a shared system and tracked by subscriptions listing all those with access to the application.

Fulfillment settings are used to drive the requesting interface and the fulfillment workflows associated with the catalog item. The fulfillment settings indicate details such as:

- Request for Mailbox Services are fulfilled through a special type of change management workflow.
- The deployed Mailbox Services are tracked as subscribed services.
- The Email system in the CMDB is linked to the support of the Mailbox Service.
- Both individuals and departmental requesters have access to request Mailbox Services through the self-service service catalog web site.

The following screen shows the fulfillment details, which include fulfillment settings for a catalog definition of a Mailbox Service.



## Establishing Service Levels

In order to ensure that customer expectations are properly set and met, it is important to define the characteristics of each service so that they can be measured and reported as part of an overall Service Level Management (SLM) plan. The primary component of an SLM is the Service Level Agreement (SLA), which captures the contract of service between IT and the services that IT provides to its customers. The objectives described in the SLA are known as Service Level Objectives (SLO), which can span a variety of metrics, such as:

- Service availability
- Application performance
- Helpdesk support
- Incident resolution
- Change process scheduling and completion

### Service Level Objectives (SLOs)

SLOs can be subdivided into several categories such as those monitoring service health, service availability, and process response time.

#### Service Health

One type of SLO monitoring provides monitoring of the “health” of a service. These types of Health SLOs are supported in Service Manager 7.00 through integration with HP Business Availability Center (BAC). For more information about Health SLOs, see the Service Monitoring section.

<b>Configuration Item Definition</b>	<b>Metric Name</b>	<b>Operator</b>	<b>Silver</b>	<b>Gold</b>
Application	Transaction Response	<=	2 seconds	1 second
Web Service	Response Time	<=	3 seconds	1.5 seconds

#### Service Availability

A second type of SLO monitors the availability of a service. Availability metrics of services are monitored in Service Manager 7.00 through a process of outage tracking that integrates with Incident and Change Management. In addition, integration with a number of monitoring tools, including HP Business Availability Center (BAC), can be used to provide additional real-time information on outages for monitored devices.

<b>Metric Name</b>	<b>Silver</b>	<b>Gold</b>
Service Availability	< 95%	< 98%
	< 97%	< 99%

## Process Response Time

A third type of SLOs consists of process response time metrics. Support for process response time is extensive in Service Manager 7.00 and spans all ITIL support processes including the helpdesk function, Incident Management, Change Management, and Problem Management.

<b>Configuration Item Definition</b>	<b>Metric Name</b>	<b>Operator</b>	<b>Silver</b>	<b>Gold</b>
Move/Relocate Workstation	Move Time	<=	3 business days	Next day
Service Desk Inquiry	Response Time	<=	24 hours	4 hours

## Service Level Agreements (SLAs)

SLOs are normally grouped into complete Service Level Agreements (SLAs). Service Manager 7.00 supports two complementary approaches to defining SLAs. The first is through the definition of **Customer Centered SLAs**. Customer Centered SLAs are negotiated between IT and its customers and they include a number of service level objectives identified by the needs of each customer. The second approach is to define service level objectives on a service-by-service basis through **Service Centered SLAs**. This allows multiple service levels to be associated with a service and to be published in the Service Catalog. For example, consider an Email Mailbox Service listing various service levels:

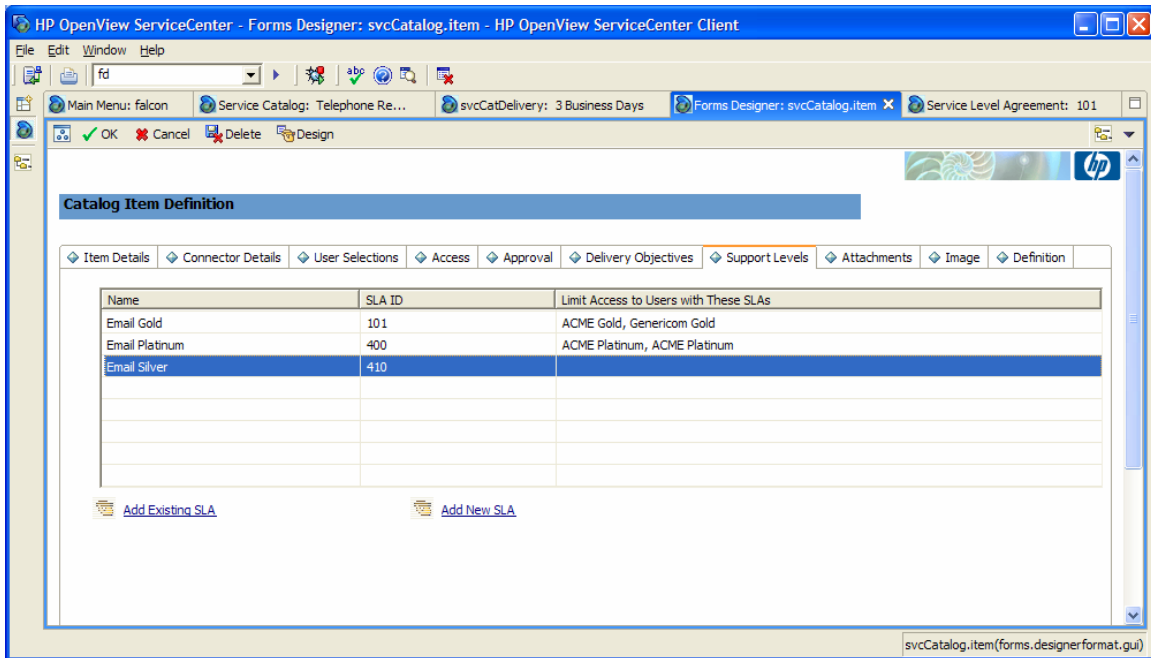
- Email Gold SLA:
  - SLO: 99% Availability
  - SLO: 8 Hour response time to service desk inquiries
- Email Platinum SLA:
  - SLO: 99.99% Availability
  - SLO: 3 Hour response time to service desk inquiries

As another example, consider a Desktop Bundle Service defined in the catalog with a set of available SLAs:


- Desktop Gold SLA:
  - SLO: 1 week Standard Change response time
  - SLO: 8 Hour response time to service desk inquiries
- Desktop Platinum SLA:
  - SLO: 3 day Standard Change response time
  - SLO: 3 Hour response time to service desk inquiries

## Service Definitions and SLAs

Each definition in the Service Catalog explicitly lists the SLAs that are provided for a service. If desired, these SLAs can be exposed to requesting customers so that a proper service level selection may be requested through the catalog requesting interface. Alternatively, filtering rules can be set to automatically determine what SLA should be awarded to the variety of potential customers of a service. The following screen shows a service definition and its SLAs:



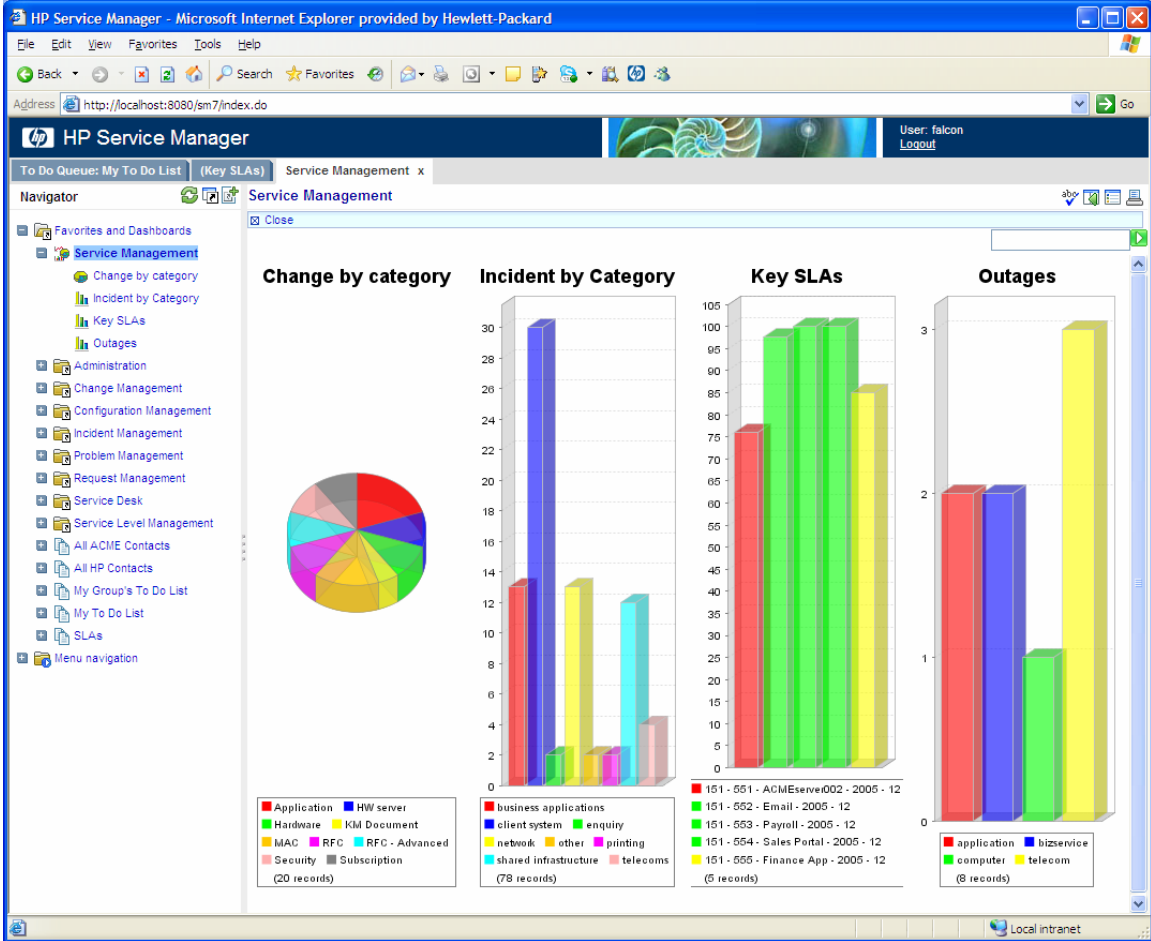
The definition of Service SLAs drives various processes and provides significant benefits. For example, when users contact the helpdesk with an inquiry about one of their services, the proper response time objective is matched with the helpdesk ticket, driving call-back and resolution deadlines. Similarly, when incident or change tickets are opened against a service, service objectives are attached to those tickets and drive the prioritization and deadlines of all related work. The following figure illustrates how SLA deadlines clearly presented to technicians assigned work related to a service.


ONSITE SUPPORT

Incident ID	Open Time	Update Time	Status	Category	Brief Description	SLA Expiration
IM10005	03/14/05 08:54:45	03/14/05 08:54:45	open	client system	My laptop is not responding	03/14/05 09:54:45
IM10008	03/14/05 09:07:28	03/14/05 09:07:28	open	client system	My email is not setup correctly	03/14/05 17:07:28
IM10007	03/14/05 09:05:04	03/14/05 09:05:04	open	network	The network connection from my office is down	03/15/05 10:05:04

The 'SLA Expiration' column is circled in red in the original image.

In addition, dashboards and reports provide a visual way to measure service performance and to communicate achievement levels to customers and the business. The following screen shows a dashboard tracking various important service management metrics, including the performance of key SLAs.



## Managing Existing Service Instances

Services that are already deployed by IT are typically supported by a variety of systems and technology. Shared services are supported by systems that include a number of components such as servers, databases, network devices, and software. A dedicated employee service may include deployed assets such as laptops or desktops as well as application accounts.

Systems and components that enable the delivery of services are managed as Configuration Items (CIs) in the CMDB. The CMDB can track various configuration states and is intricately integrated into the processes in Change Management that drive any change made to a component.

Service Manager 7.00 defines a special CI category to specifically manage systems designed to support a shared business service. Such definitions include rich detail about the service instance, including:

- Service details (for example, Service ID, Service Display Name, Description, System Status, Service Type and Subtype, IT Process Owner, and Business Stakeholder)
- Service lifecycle status
- CI relationships
- Costs of supporting the service
- List of subscribed customers
- Related Service Support tickets (for example, incident, change, problem)
- Descriptive external documents stored as attachments
- Service metrics such as outage history and SLA response and availability statistics

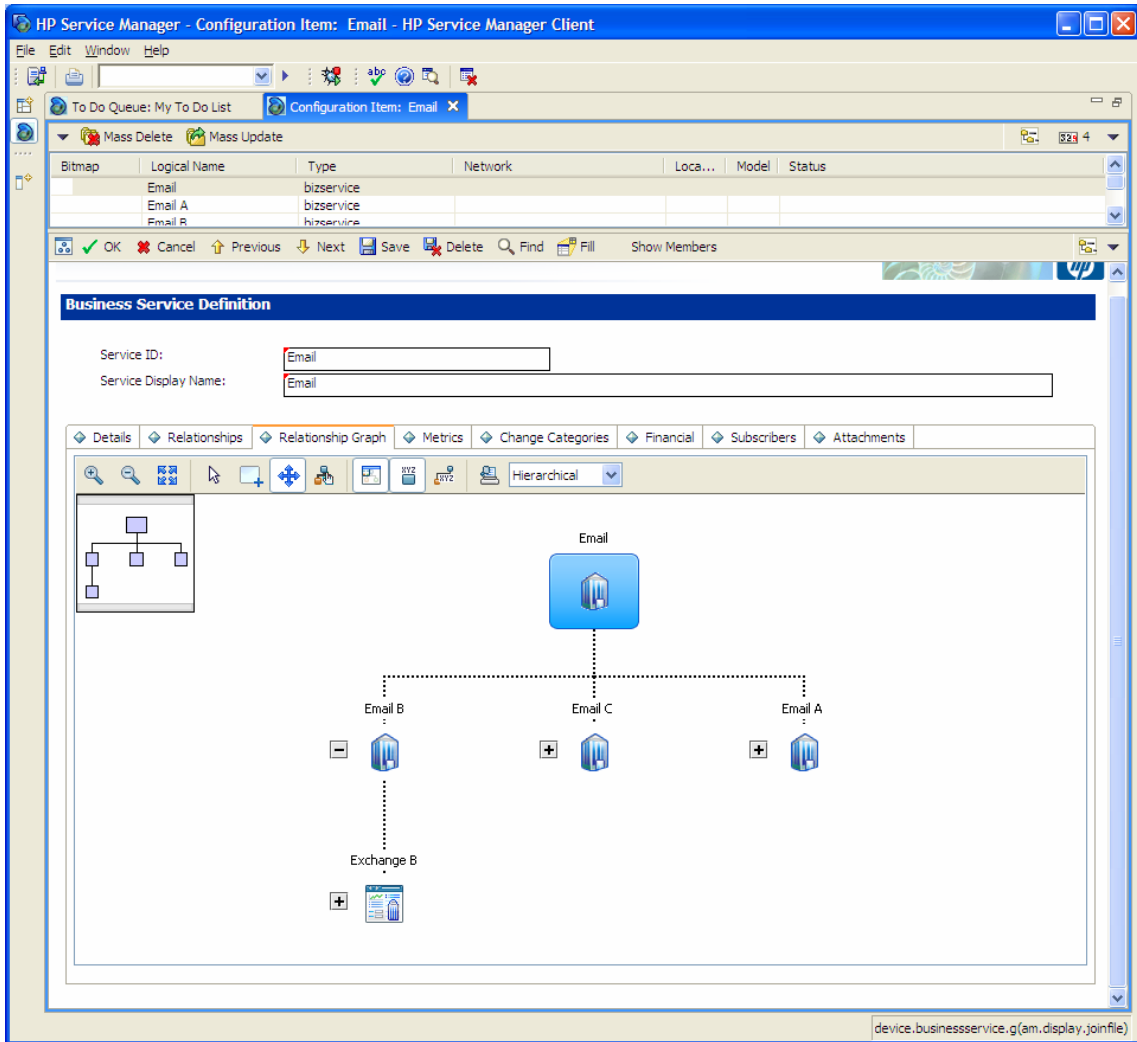
## Viewing CI Relationships

Of special interest is the map of CIs that are linked together to support the service. This map can be visualized in an interactive diagram that provides status information of a service and its components.

The CIs and relationships that make up a service can be defined through integration to automated discovery tools, and they can also be managed manually through the interfaces of the Configuration Management application. The integration with the HP Universal CMDB (uCMDB) provides a primary method for automatic discovery and population of this information.

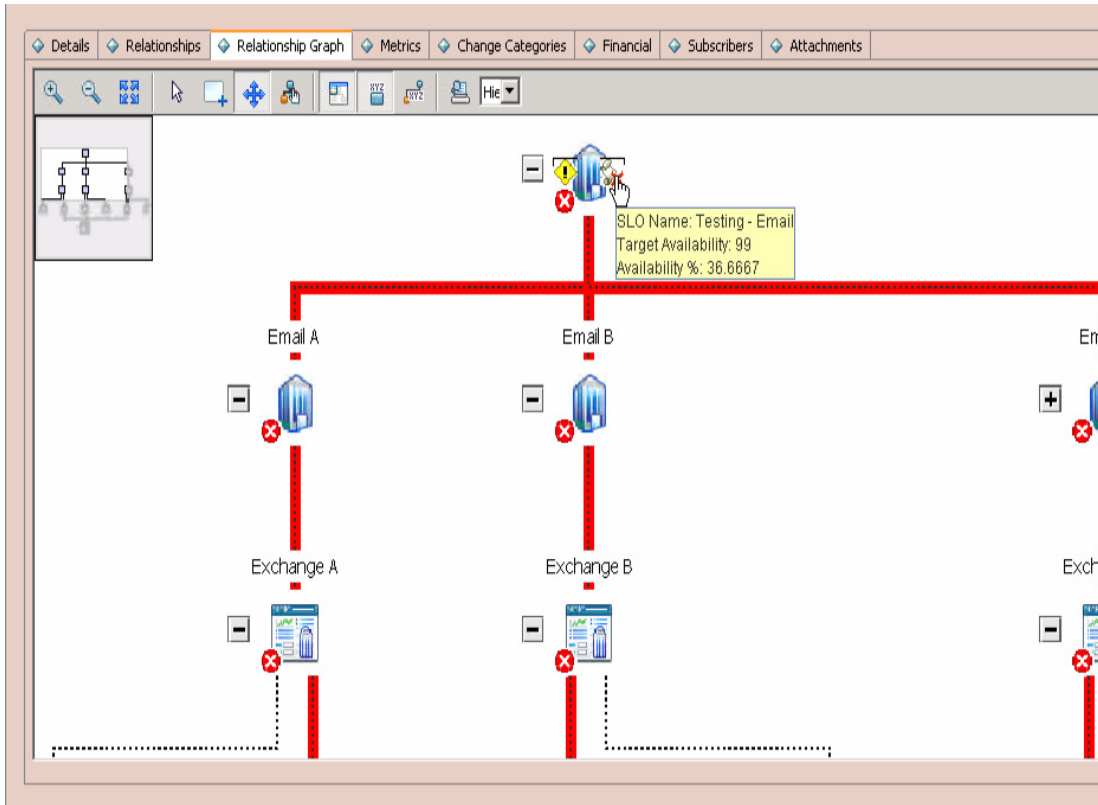


The following screen shows a sample graph of components that support an Email service:



Viewing CI relationships provides more than just an illustration of the components that make up a service. Relationship information can also be used to determine the impact of incidents, changes, and general outages that may affect particular components. For instance, an outage to a single database server may impact various applications and services. This impact can be visualized graphically and can also be used in relation to SLA requirements for a service. \

The following screen shows how outages of various Exchange servers have caused a total outage of the Email system. In this view, the overall SLA availability requirements and current achievement levels are also exposed to the user.

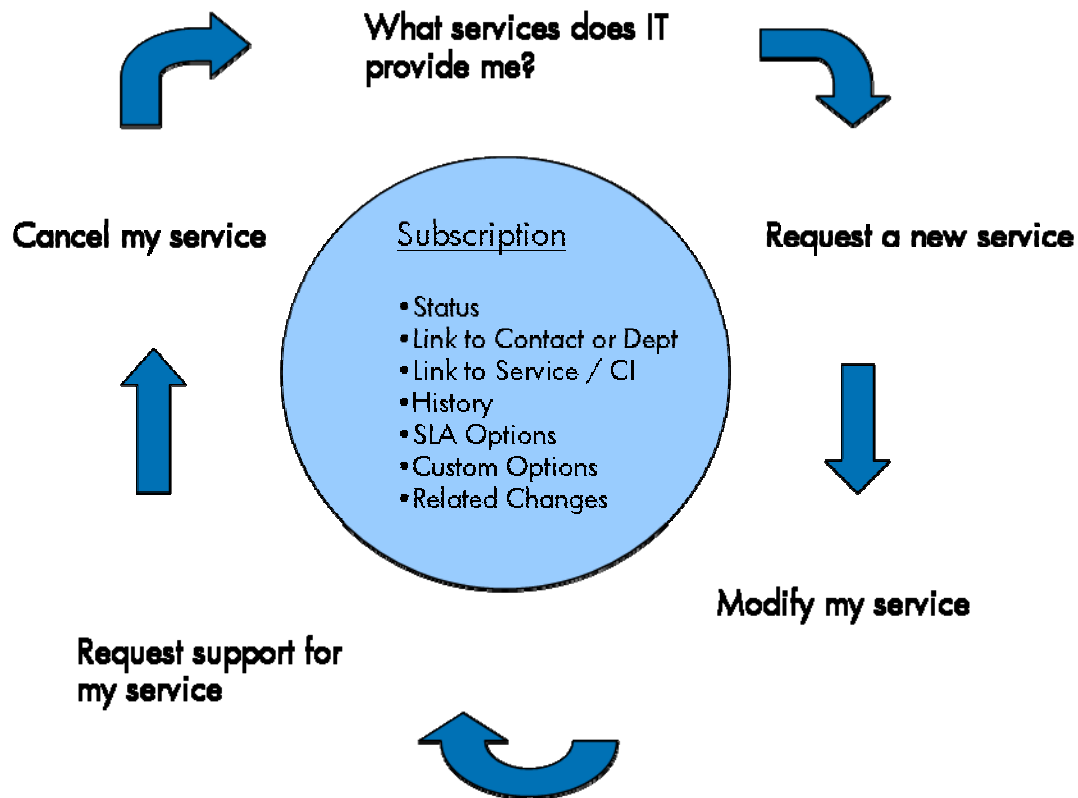


## Viewing Service Instances

In addition to managing CI relationships, the service instance view provides a list of subscribed customers who have been granted access to the service. The relationship between a customer and a service is stored in a subscription record that tracks valuable information, including:

- Individual subscriber (when the service customer is an employee)
- Department subscriber (when the service customer is a department)
- Subscription history (for example, date of request, change, cancellation)
- Change tickets opened against the subscription
- Service SLA granted to the subscriber

These subscriptions support the lifecycle of the service as it relates to the customers who rely on it.



## Requesting Services

One of the purposes of defining a Service Catalog is to give customers a clear view of the services provided by IT and to enable these customers to request the services that they need to support their daily functions.

Catalog services can range from transactional requests to shared and dedicated requests. Another way of differentiating between various requests is by the type of customer making the request. Some requests are made by or on behalf of an individual employee. These are known as **Individual Requests**. For example, requests for Laptop Bundles or Mobile Device Services are typically made by individual requesters.

Other requests are made on behalf of a group of employees. These are known as **Departmental Requests**, and they can be made for any department defined in the system. Specific users designated as **Departmental Requesters** are given special access rights to make these types of requests.

Requesting services is made possible by a self service interface exposed through the corporate web site. The interface is designed for ease of use and modeled after familiar “web shopping” paradigms. Users can search for services, navigate service hierarchies, add services to shopping carts, and even create templates for recurring requests. Each service is described in detail with the following information provided:

- The service name and description
- One time and recurring costs for the service
- Target customer (individual or department)
- Delivery objective, outlining how long it may take for fulfillment of the request
- Service SLA, outlining the standard objectives that define service availability, support, and maintenance
- Custom service options

After a request is made, the requester can track the status of fulfillment through the same self service interface. If the request requires approval, details from the approval workflow can be shared with the requester. Similarly, details pertaining to other fulfillment workflow steps can be exposed. For instance, a requester may find out whether the fulfillment process is involved in planning, procuring, configuring, or delivering the service.

It is common for catalog requests to undergo an approval workflow that allows one or more approvers to review and accept (or reject) the request. Approval workflows can be setup to include parallel approval by more than one approver. They also allow serialization of approval tasks creating a chain of approval steps that lead to request fulfillment. The approval support includes other useful capabilities, including request modification and sending a request back to the requester. Throughout the lifecycle of the request, notifications can be sent to both requesters and approvers informing them of status and pending actions.

The following screen shows all details for a Mailbox Service. Note that this example shows a service being requested for an individual.

The screenshot displays the HP Service Manager interface in a Microsoft Internet Explorer browser window. The browser's address bar shows the URL `http://localhost:8080/sm7/ess.do`. The page title is "HP Service Manager" and the main heading is "Mailbox Services".

**Mailbox Services**

**Description**

Provides standard email mailbox services. Access support includes Microsoft Outlook and Web Based Email. The Standard mailbox size is 100MB. You may request additional storage capacity at an additional monthly charge to your department.

**Order Information**

Requested for:

- Individual EMPLOYEE, SUE
- Department

Quantity: \* 1

Deliver within: 6 Business Hours

Service SLA: \* Gold Service

Unit Cost: **\$ 120.00**

**Recurring costs of \$ 10.00 per .**

**Item options**

Please provide additional information for your mailbox service request:

- Enable Web Access [+\$5.00]
- Storage Size**
  - 100MB
  - 150MB [+\$10.00]
  - 200MB [+\$20.00]

**Attachments**

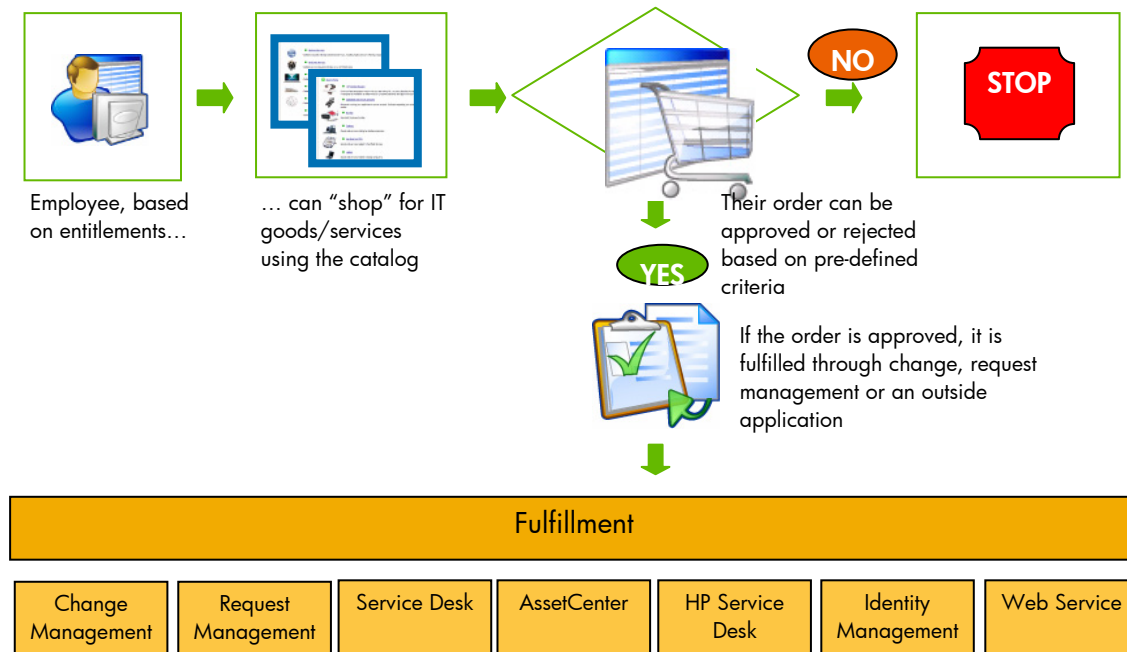
[+ Add to Cart](#)

[← Back to Catalog](#)

svccat\_disp\_item Local intranet

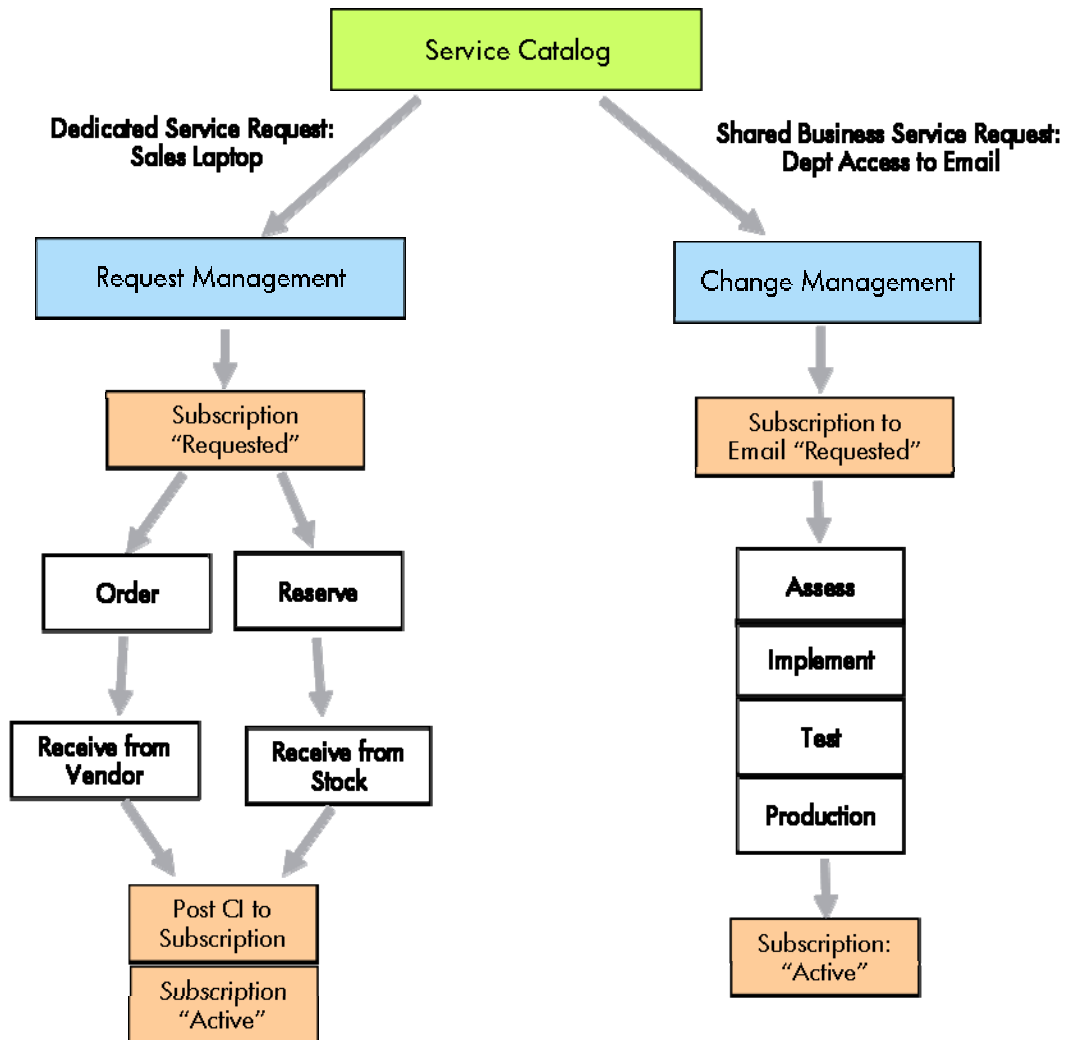
# Managing Request Fulfillment

A necessary process controls the cycles of publishing services in a catalog and managing services instances. This is the process of **Request Fulfillment**, and it can be managed in a variety of ways, each tailored to the nature of the service being provided. The following diagram shows the flow of a request made through the Service Catalog. As the request is approved, work is transferred to one or more systems that are tightly integrated to perform specific fulfillment work.



A good way to understand request fulfillment is to consider the processing of two very different types of service requests. A number of requests lead to delivery of dedicated services. For example, a Laptop Bundle or a PDA Service can be provided to individual requesters through the delivery of configured components and services. Other requests lead to the delivery of shared services. For example, a request for a Departmental Application or access to the enterprise Email system can lead to the creation or modification of shared infrastructure used to deliver the service.

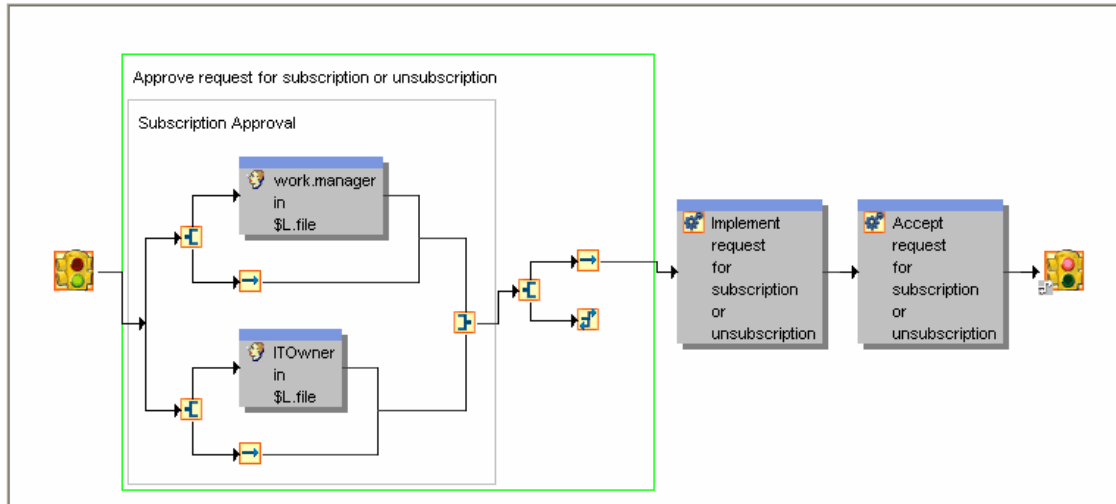
The following diagram illustrates how these different types of requests are handled by specialized fulfillment workflows.



A request for a dedicated service such as a Laptop Bundle is well supported by the **Request Management** process. As the request is submitted, a subscription record is automatically created to track the service and its relation to its eventual customer. Initially, this subscription is given a “requested” status to indicate that it has not yet been activated. A ticket is then created in Request Management to handle the fulfillment workflow. This workflow may lead to the procurement of new equipment, or it may rely on existing equipment that can be reserved for assignment and use by the requester. Once the laptop is obtained from a vendor or from the stock room, it is configured and delivered to the requester. All these processes are tightly integrated. As steps in the workflow are completed, details about the delivered laptop are stored as a CI record in the CMDB and referenced by the subscription record associated with the customer.

Now consider a request for access to a shared service such as the enterprise Email system. For example, a new department is requesting Email for all its employees. As the request is made through the catalog, a subscription record is created that links the department (and its employees) to the service. Until the service is provided, this subscription is also marked with a “requested” status. A process is then started in **Change Management** to actually manage the tasks related to implementing the requested support. The change workflow may include steps for special approval, assessment and planning of work, implementation, and testing. Tasks related to the change might assign work ranging from adding storage capacity to the Email system to creating accounts for the new users. As the process completes, the subscription is automatically updated to indicate that users now have active access to the service.

The workflows followed to fulfill a service request can be tailored to meet the service needs. To facilitate implementation, a ready-to-use Change Management workflow has been defined to automatically integrate with the subscription support described above. This workflow is part of a change category known as a **Subscription Change**. This extensible workflow is shown in the following figure.

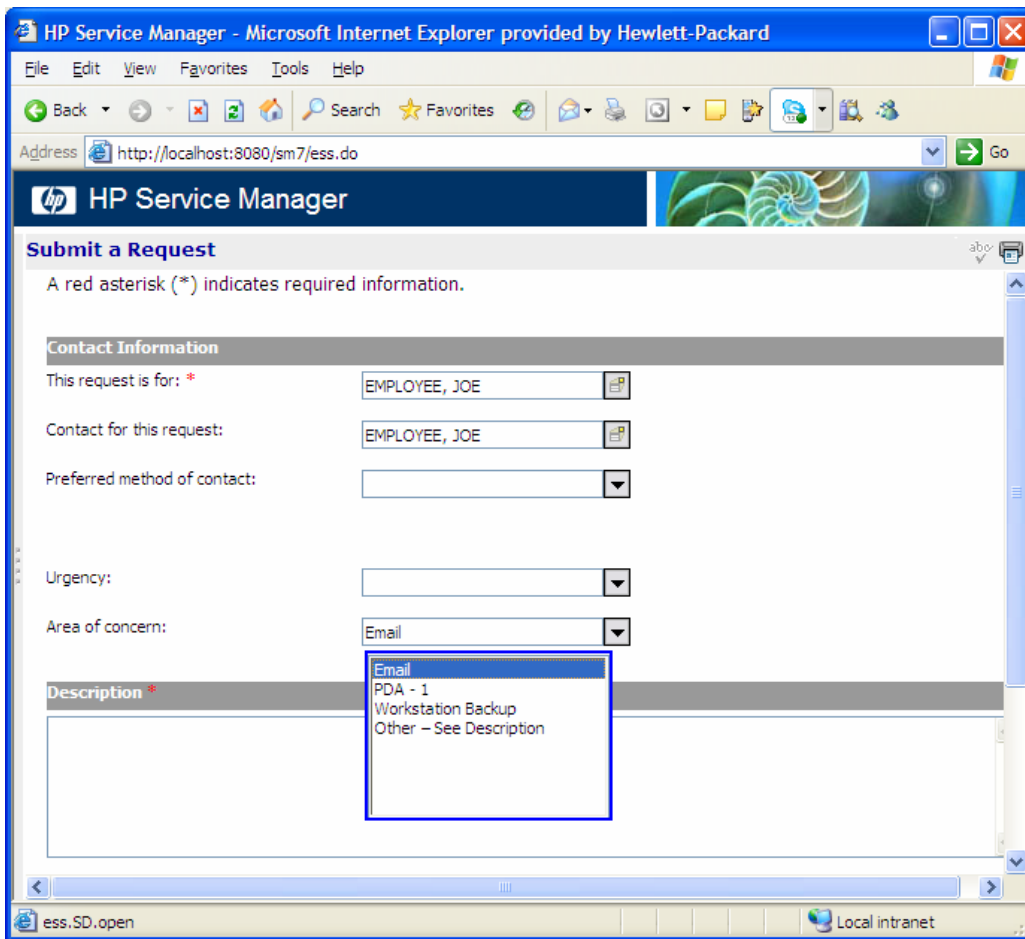




# Self-Service Support

After a service has been provided, customers can make further requests to request support for the service or to review their current list of services, service history, and service level options. All this is available through the same self-service, web-based interface that supports the initial catalog shopping and requesting.

Support requests are provided as part of the self-service ticketing interface that enables users to make general purpose requests and inquiries to the helpdesk. This interface also provides users with the ability to open requests against a specific subscribed service. The following screen shows a support request that can be reported against one of various applications or components that make up the customer's subscription portfolio.



## Tracking Service Subscriptions

Tracking service subscriptions provides other useful benefits. Each user has access to the list of services that IT has provided. Users have access to details stored with each subscription, including:

- Service description
- Service SLA
- Service history, including when the service was requested, activated, changed, or cancelled
- Related change tickets that affected the subscription

When customers no longer need a service, they can easily request a service cancellation. This triggers the creation of a Subscription Change workflow that allows IT to perform necessary tasks such as collecting items from the customer or cancelling application accounts.

The following screen shows the details of a subscription including the Unsubscribe button, which enables users to easily unsubscribe from the service.

The screenshot displays the HP Service Manager interface in a Microsoft Internet Explorer browser window. The address bar shows the URL `http://localhost:8080/sm7/ess.do`. The page title is "HP Service Manager". The main content area is titled "Subscription: Workstation Backup" and includes a description: "Provides backup and recovery support for personal workstations. Service has been setup for support of all locations, available by subscription only." Below this, the status is "Active" and the subscriber is "EMPLOYEE, JOE".

The "History" section contains a table with the following data:

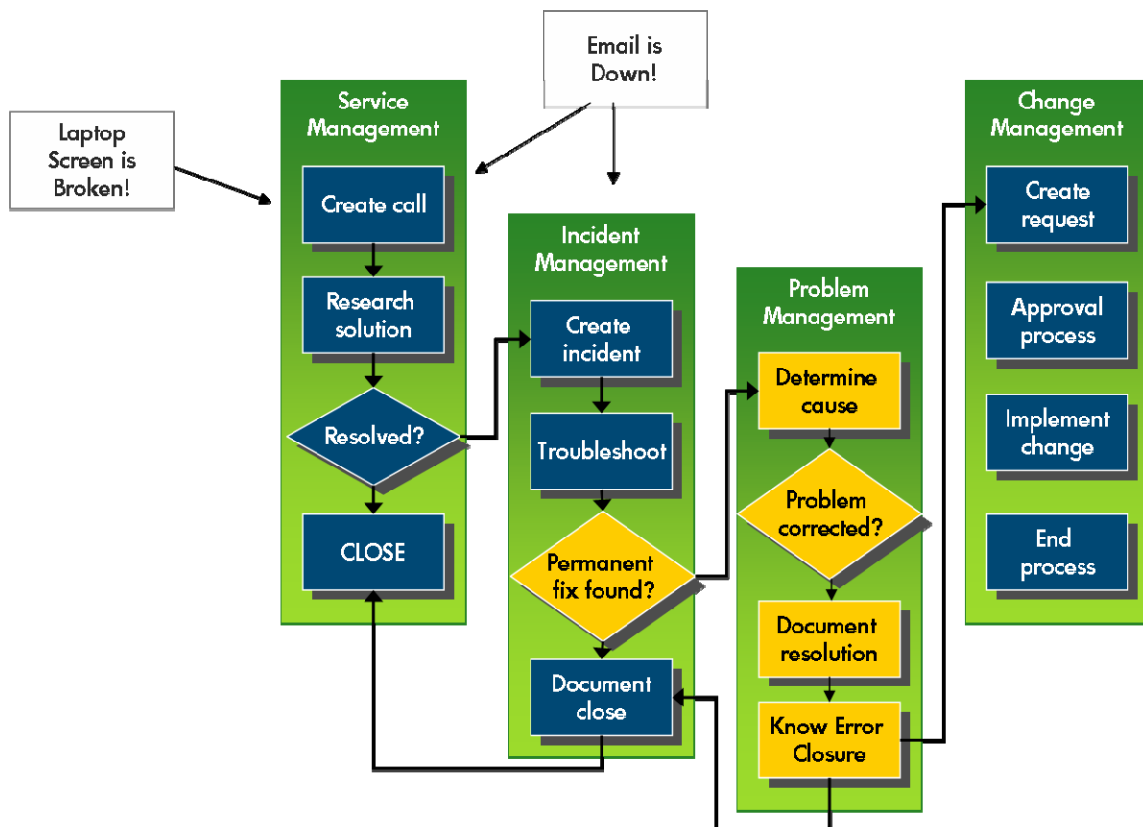
Type	Operator	Description	Date/Time
Status Change	falcon	Status changed to Active	05/04/07 17:04:26
Subscription Requested	linker	Change Record C21 created for this subscription request.	05/02/07 17:17:10

The "Related Changes" section shows a table with columns: Change No, Status, Approval Status, Change Coordinator, Phase, and Subscription Action. At the bottom of the page, there are "Back" and "Unsubscribe" buttons.

# Service Support Processes

Support processes are required to handle the various requests, inquiries, and issues reported against a service. These processes can be initiated in a variety of ways. Customers may request support directly through self-service interfaces or by contacting the helpdesk. In addition, automatic monitoring tools may detect that a service or component is not operating properly and initiate an incident resolution workflow.

Service Manager 7.00 includes comprehensive support for the standard ITIL Service Support processes, including Incident, Problem, and Change management. The following diagram shows how these processes are linked and integrated to provide end-to-end support.



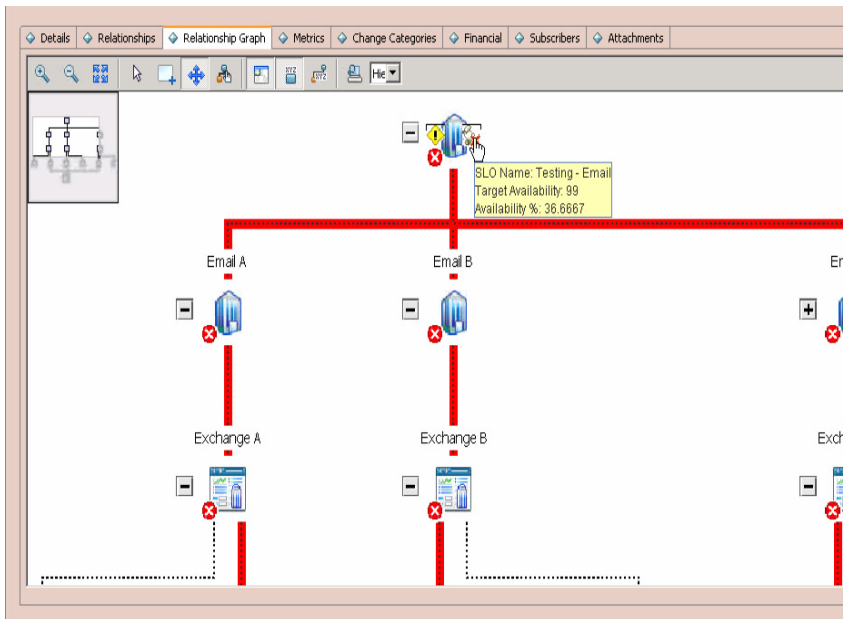
## Service Management Process

The Service Management process enables the helpdesk to process inquiries reported by service customers. Issues dealing with unavailability of a service typically result in the creation of an Incident Management workflow tasked with restoring the availability of the service as soon as possible. Because the Incident process is designed for fast turn-around, recurring or high severity issues with a service may lead to the creation of a Problem Management workflow aimed at determining the root cause of the service malfunction. Through this process, permanent solutions may be identified and assigned to Change Management for implementation.

All of these processes are enhanced by having integrated access to service definition details, including service instance models, CI relationships, customer subscriptions, and Service SLAs. For example, when a customer reports an issue, support technicians working with the Service Desk and Incident Management interfaces have direct access to the list of subscribed services available to that customer. Similarly, a technician working on an incident against service can see the list of all subscribers that may be affected an outage.

Information captured by CI relationships also plays a key function in supporting the Incident Management process. When an incident is opened against a service, technicians can view the service CI map that shows related CIs and other potentially related outages or incidents. In many cases, incidents may be opened against a component such as a database or a server. For example, an automatic monitoring system may detect unavailability of a server and open an incident through a web service API. In such cases, CI relationships are used to discover the list of affected services that may also be experiencing an outage due to the component malfunction. These affected services are stored in the incident and are available for investigative and reporting purposes.

The following screen shows a sample set of CI relationships with related outages and incidents. Such diagrams are available not only through Configuration Management, but also within Incident and Change Management views.



# Managing Changes

Both service request and service support processes integrate with Change Management to handle specific changes to new and existing systems. The drivers of change can vary widely. For example, a change workflow may be started to fulfill a service subscription request. Changes are also created to implement permanent fixes for known errors found in Problem Management. Other changes may be planned to perform routine maintenance or upgrades to a system.

Regardless of the source of change, it is important to capture an accurate picture of the impact that the change can have to various services and its customers. For example, consider a change to an Exchange server that includes a planned outage for a number of hours. CI relationships stored in the system are used to determine the list of services that may be affected by the change. This list is stored with the change and is available for planning, approval, and reporting purposes.

In addition, CI relationship graphs can be displayed within Change Management to visualize the change impact. The graph can show important information such as affected services, planned changes in other components, and current outages.

It is also important to consider the customers who may be affected the change. This is another place where service subscription information becomes valuable. Subscription information is used to support automatic generation of notifications to customers informing them of planned changes and expected outage windows. The following screens conceptually illustrate how outage windows are communicated to subscribers of services affected by a planned change.

The screenshot displays a Change Management interface. The top navigation bar includes tabs: General, Description, History, Contact, Associated CIs, Affected Services, Attachments, and Related Records. The 'General' tab is selected, showing the following details:

- Coordinator:** Name: CA 1, Department: IT, Phone: 858 760-6789, Cost Center: IT.
- Assigned To:** Name: SM 3, Department: SERVICE DESK, Phone: (empty).
- Scheduled Downtime:** Start: 06/21/07 23:00:00, End: 06/21/07 23:59:00, Configuration Item(s) Down? checkbox.
- General:** Risk Assessment: 1 - Low Risk, Initial Impact Assessment: 3 - Multiple Users, Urgency: 3 - Average, Priority: 3 - Average, Status: initial, Approval Status: approved, Alert Stage: (empty).

An arrow points from the 'Scheduled Downtime' section to a table below, which lists subscribers affected by the change:

Subscriber	Type	Status
<a href="#">ACME/Finance</a>	Department	Active
<a href="#">ACME/Executive</a>	Department	Active
<a href="#">BUTLER, RICHARD</a>	Individual	Active

# Service Monitoring

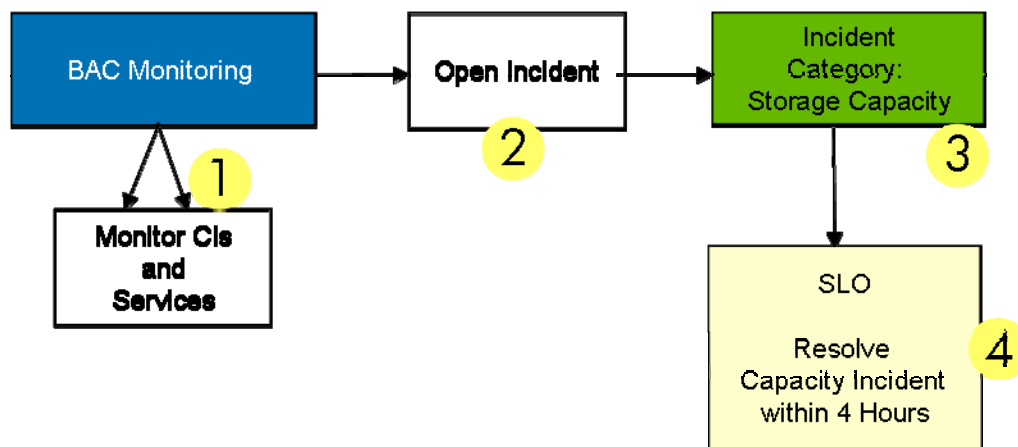
For optimal support of a service, it is helpful to implement automatic monitors that offer real-time and early detection of issues with services and their components. Such monitoring can be done through integration with a number of different products. With Service Manager 7.00, a new integration with HP Business Availability Center (BAC) provides special support for driving service support processes through alerts generated when a service is performing below expected levels.

The integration with BAC focuses on two primary processes. The first involves incident creation from a service’s Key Performance Indicator (KPI) alerts. In the process, alert definitions are configured so that alerts trigger based on acceptable levels of service availability and performance. For example, consider the monitoring of a key customer facing Web Portal Service. Because response time for users of the service is important, alert levels are defined as follows:

Alert Level	Response Time
Green	Average response < 1 second
Yellow	Average response < 2 seconds
Red	Average response > 2 seconds

As soon as the monitoring process detects response time dropping below the acceptable green level, an incident is opened to flag the issue. In addition to alerting IT as part of the incident creation process, the ticket can also be linked to a specific SLA with an objective describing the priority for restoring performance to proper levels. For instance, the SLA for the Web Portal Service may require that Yellow performance levels be restored to Green within 4 hours, while Red performance levels must be restored to Yellow or Green within 30 minutes.

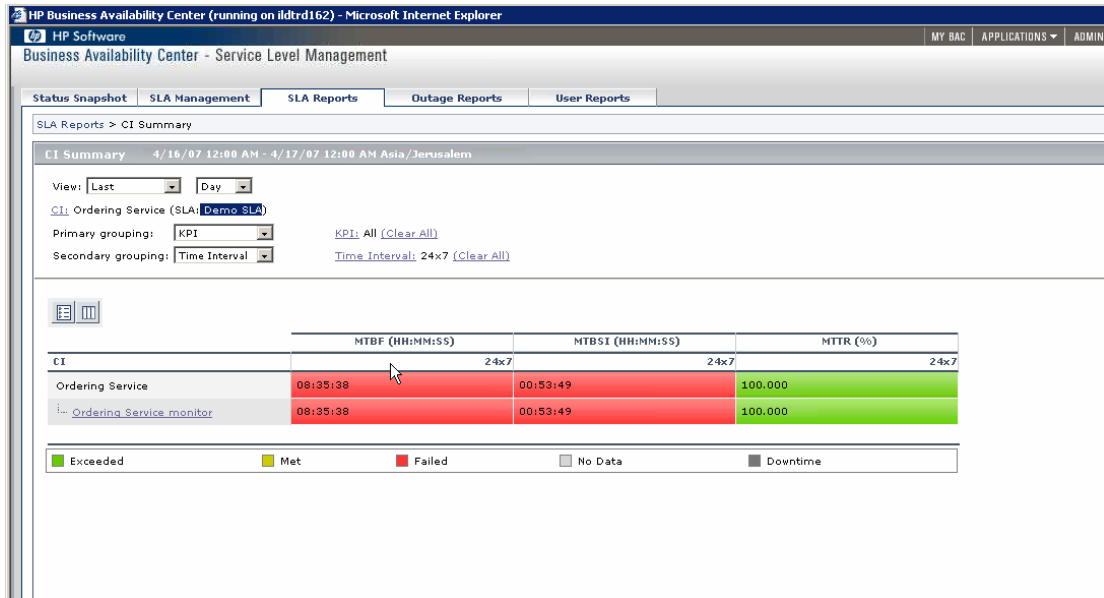
The following diagram shows the workflow of events in the alert integration. The alert integration workflow starts with monitoring, and then flows into incident creation, and then flows into incident categorization and prioritization through an SLO.



# Service Operations Dashboard

In addition to service monitoring, the combined SM7 and BAC solution provides a second integration point that exposes service management metrics within a single service operations dashboard. The following screen shows a BAC dashboard enhanced with metrics such as:

- Service Mean Time Between Failures (MTBF)
- Service Mean Time Between System Incidents (MTBSI)
- Service Mean Time to Resolution (MTTR)



With this integration, operations technicians can monitor services and service levels and obtain real-time information about service status.

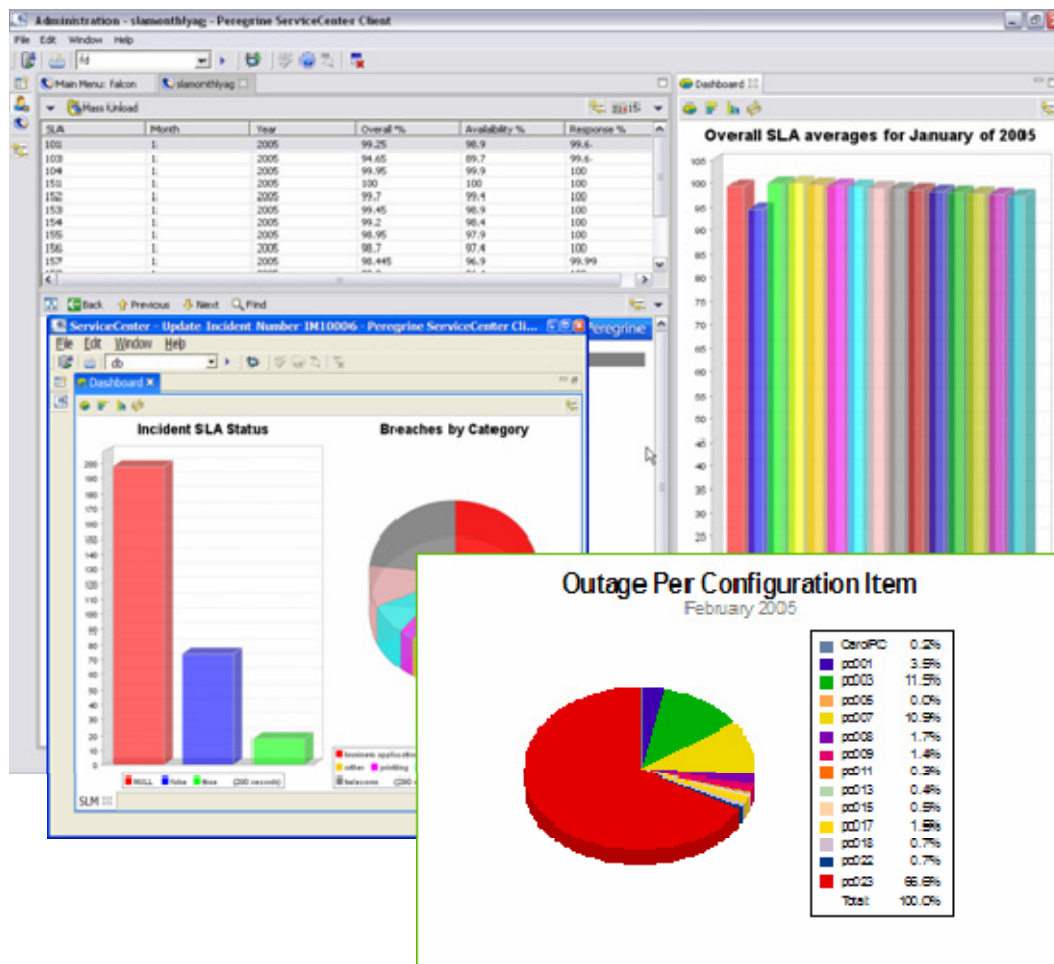
# Measuring and Optimizing Service Delivery

So far, we have looked at the lifecycle processes that allow services to be identified, published, managed, requested, fulfilled, and supported. In order to operate like a business, IT is also required to measure its performance and to be able to share the results with its customers and with the business.

For operational users, Service Manager 7.00 offers dynamic and configurable dashboards that expose key performance metrics. These dashboards are especially useful when used by IT managers and technicians on a daily basis to focus work on service priorities. For example, dashboards can be created to expose the following information:

- SLA achievement statistics
- Service incidents or changes
- Outage and availability metrics
- Escalations
- Work-load queues and statistics

The following screens illustrate various dashboard uses. Dashboards enable interactive drilldown.

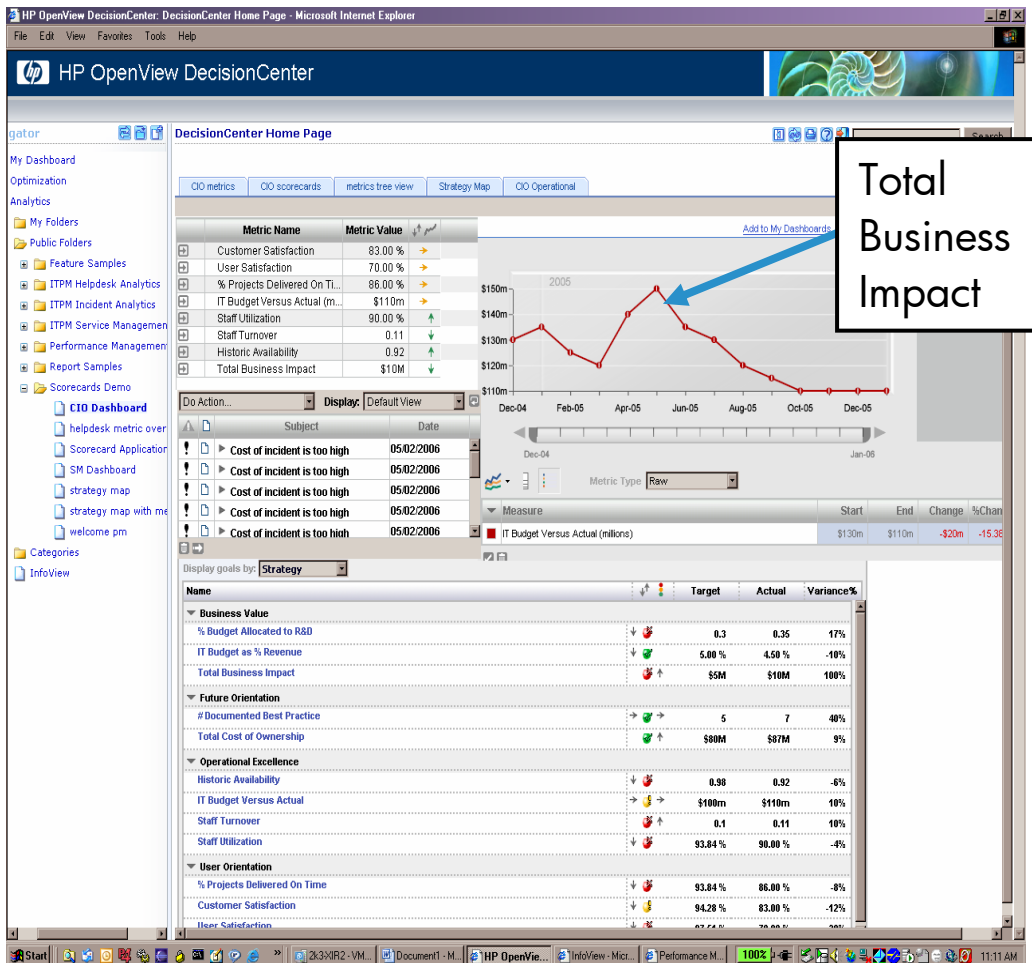




## HP Decision Center Analytics (DCA)

In addition to these operational dashboards, IT can create robust reports and perform analytics by using HP Decision Center Analytics (DCA). The DCA integration exposes services and their related support metrics in rich and interactive reporting universes. Users can evaluate the historical business impact of IT performance, navigate impact from enterprise operating groups to business services, discover service discontinuities, and establish aligned measurement with the business.

For example, the following screen shows a DCA dashboard designed to show the Total Business Impact related to the performance of a Service.



The use of these reports and analytic tools is crucial to being able to measure service performance and also in taking the final step in the service lifecycle involving the improvement and optimization of the way services are delivered and supported.

## HP Decision Center Optimization (DCO)

To properly focus service optimization, it is crucial to understand the actual value that each service provides the business. Capturing this value is the focus of HP Decision Center Optimization (DCO). Value is captured by defining the impact to customers given different types of service disruption. For example, consider a Trading System application used by a bank to conduct vital business transactions. Technical disruptions of this service could be very costly and related impact costs could vary according to schedule, severity, and duration.

The following screen shows how such impact can be collected within the DCO interface.

The screenshot shows the HP OpenView DecisionCenter interface for creating a new impact rule. The left sidebar contains a 'Navigator' with categories like Performance Analytics, Impact and Optimization, and Business Intelligence Tools. The main area is titled 'Impact Rule - New' and contains the following configuration fields:

- Name:** Trading Application Impact
- Description:** (Empty text area)
- Incident impact type:** Outage
- Impact scope:** Business Unit
- Schedule:** Tue-Thu 08:00-12:00 (with a 'New' button)
- Impact calculation:** 1000/2000/5000 (with a 'New' button)

Below the schedule field, a summary box shows the following details:

- Name: Tue-Thu 08:00-12:00
- From: 8:00 AM to 12:00 PM
- Rekurs: Weekly, Rekurs every 1 weeks on Tuesday Wednesday Thursday

Below the impact calculation field, a summary box shows the following details:

- Name: 1000/2000/5000
- Calculation type: Stepped

If the event duration is within	The Cost is
2 Hours	\$1,000.00 Per Minute
1 Days	\$2,000.00 Per Minute
1 Weeks	\$5,000.00 Per Minute
For all other events with longer duration:	\$0.00 Per Minute

After these impact costs are collected for the IT-provided service, DCO is able to run through scenarios that help IT determine whether its current support operations are properly focused to maximize business value. The optimization scenarios can point to improvements in work assignment staffing as well as improvements in service level definitions. Working together with Service Manager 7.00, these DCO optimization scenarios help fine tune the way IT works, creating a closed loop around the service lifecycle designed to provide continuous improvement of services.

© 2007 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

September 2007

