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DOCUMENT HISTORY

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<td><strong>EXAMPLE</strong></td>
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IT organizations face new challenges every day as they attempt to remain effective and future safe while also keeping costs for day-to-day operations as low as possible. They are also being challenged more than ever to demonstrate their value to the business. Therefore, it is important to optimize the day-to-day tasks that appear to have less obvious business value and to use KPI and benchmark-based reporting to make IT processes more visible, demonstrating the real value that IT can provide.

In order to minimize the costs of IT, it is necessary to standardize and automate the end-to-end IT processes without reducing the SLAs required by the business, such as stability, availability, performance, process and data transparency, data consistency, IT process compliance, and so on. Based on the experience gained by SAP Digital Business Services (DBS) while serving more than 36,000 customers, SAP has defined process standards and best practices to help customers set up and run end-to-end solution operations for their SAP-centric solutions.

The Build phase of SAP best practices supports a Build SAP Like a Factory approach, consisting of the following processes:

- Custom code management
- Change, test, and release management
- Incident, problem, and request management
- Solution documentation

During the Run phase of a solution, adapting your IT infrastructure to a Run SAP Like a Factory operation impacts both application operations and business process operations. Therefore, operations processes, such as end-to-end root-cause analysis, system monitoring, system administration, and data volume management need to be optimized to achieve state-of-the-art application operations. In business process operations, the same applies to business process and interface monitoring (including performance optimization), data consistency management, and job management.

Quality management processes and tasks need to be established throughout the lifecycle to guarantee continuous improvement of the end-to-end solution operations processes while simultaneously ensuring the flexibility needed to react to changing requirements.
Figure 1: Organizational model for solution operations

Figure 1 shows an organizational model for solution operations that aligns SAP best practice topics and SAP standards for End-to-End Solution Operations with SAP’s control center approach. The Operations Control Center executes and controls the Run SAP Like a Factory processes, while the Innovation Control Center ensures optimal custom code management and a smooth transition to production with integration validation procedures. SAP connects to these control centers from the Mission Control Center to ensure that professional support is available to the customer. The following Application Lifecycle Management (ALM) functions are not provided directly in one of the control centers because they must be handled across different areas:

- Change, test, and release management
- Incident, problem, and request management
- Solution documentation

The quality management methodologies are an essential part of SAP’s Advanced Customer Center of Expertise (Advanced CCoE) concept and ensure that the KPI-driven processes are continuously improved across all processes and teams. In addition, the quality manager roles ensure consistent and value-centric reporting to the business and management. This unified reporting platform is known as the Single Source of Truth.
1.1 Control Center Approach

The control center approach consists of three components:

- Mission Control Center (MCC)
- Innovation Control Center (ICC)
- Operations Control Center (OCC)

Both the ICC and OCC are made available at your IT facility, while the MCC is located at regional SAP sites. All three approaches are linked together through the SAP Solution Manager application management solution.

Mission Control Center (MCC)

The purpose of SAP Mission Control Centers (MCCs) is to support the ICCs and OCCs at customer locations, enabling proactive identification and fast resolution on critical issues operating the SAP solutions and helping to apply standard SAP software functionality that addresses business requirements. The MCCs are serving as the central inbound channels for all complex and business critical request of our customers. MCCs connecting customers to experts from SAP that are ready to provide support across all solution areas and phases of the application lifecycle. SAP MCCs are located on North America, Latin America, Europe and Asia regions. All MCC’s are networked, use a common infrastructure and service management system, providing 24x7 year around coverage for critical customer situations.
Innovation Control Center (ICC)

SAP’s Innovation Control Center (ICC) is the delivery framework to deliver mid to long term innovation programs. The ICC combines a set of experts, services, tools and templates and represents a lean front office at the customer location that is connected to all offerings of a very strong back office, called the Mission Control Center (MCC). This ensures access to the expertise of the entire SAP ecosystem in a structured way.

The Innovation Framework is the foundation of an ICC and is led by a certified ICC Lead. The Lead delivers against a long-term, value based roadmap, sets-up collaboration tools and dashboards for the connection to the MCC and creates innovation service plans for the underlying projects. ICC services are available for all phase of innovation projects:
- Discover/Prepare: e.g. Prototyping
- Explore/Design: e.g. Gap Validation or Design Review
- Realization/Deploy: e.g. Integration Validation (Safeguarding)
- Run: Transition to Operations

The overall concept of ICC/MCC establish a long-term relationship to SAP and helps saving implementation costs and time for our customers.

Operations Control Center (OCC)

The Operations Control Center (OCC) is the physical manifestation of the Run SAP Like a Factory philosophy. The Operation Control Center (OCC) is a service of an IT organization that:
- creates the relevant transparency to business and other stakeholders along the IT aspects of the seamless execution of E2E critical or core business processes
- provides the relevant transparency on health of the end to end IT landscape and underlying software components
- manages critical exceptions and continuous improvement on the above aspects based on data driven insights
- is supported by standardized IT processes

Figure 3: SAP Mission Control Centers – Customer Innovation Control Center collaboration model
An Operation Control Center is sitting as a layer across / above typical IT departments (who are responsible for the day to day IT operations). It is the job of the OCC to immerse itself in the landscape and processes to fully understand the operational challenges facing the business. Centralized tools and standardized monitoring procedures provide much-needed transparency into these challenges. Meanwhile, a focus on continuous improvement and optimization can improve operations over the long term. As a result, IT departments can realize reduced costs and better capitalize on new opportunities for innovation. To achieve these goals, the OCC relies on a close interaction with both the Innovation Control Center (ICC) and the SAP Mission Control Center (MCC).

The OCC is typically equipped with large screens that display the status of business processes, IT landscape components, as well as exceptions and alerts. If problems occur, a video link can be used to obtain live support from SAP and partners. The customer is responsible for managing the OCC.

The OCC is most effective when closely integrated with other IT processes, such as IT Service Management (ITSM) and Change Management. Central monitors and dashboards based on application and business process operations display the current status of business and IT-related processes. This data can also be used to drive continuous improvement.

An effective system monitoring and alerting infrastructure is fundamental to the success of an OCC and feeding the OCC. The OCC is safeguarding all relevant IT aspects, and the execution of the end to end business processes in scope. The OCC reacts and manages on exception along this critical business processes according to predefined error-resolution activities. The OCC manages follow-up activities for error handling if the relevant tasks are not completed within a certain timeframe.
2 OVERVIEW OF THE SAP STANDARD FOR IT SERVICE MANAGEMENT

The SAP Solution Manager IT Service Management (ITSM) tool is compliant with, and certified by, the Information Technology Infrastructure Library (ITIL). It is designed to support business processes and enable every aspect of service desk operations to run. ITSM enables management of service requests, incidents, and problems as defined in the SLAs. This means implementation of infrastructure changes and reduce, or even eliminate, the impact on the business and end users.

SAP Solution Manager offers a set of standard, pre-configured IT Service Management processes that can be set up with the help of a guided configuration procedure. Based on this ready-to-use configuration, adjustment in the tool to match individual business requirements using, for example, the following features:

- Custom workflow settings
- Organizational models
- User roles
- Automatic email notifications
- UI adoptions
- Reporting capabilities

In addition, SAP Solution Manager offers many standard functions, such as authorization management, multiple inbound and outbound channels, a post-processing framework, and an easy enhancement workbench to make individual field adjustments without the need for additional coding.
2.1 Incident and Problem Management

In SAP Solution Manager, use Incident Management to resolve incidents that are reported, for example, by end users, key users, or a monitoring service. An incident is an event that is not part of the standard operation of a service and that interrupts or reduces the quality of a service. According to ITIL, the objective of Incident Management is to restore normal operations as quickly as possible with the least possible impact on either the enterprise or user, at the lowest possible cost.

With ITSM, perform the following tasks to support this process:

- Create incident records via multiple inbound channels
- Automatic rule-based Incident creation out of incoming emails
- Implement hierarchy-based categorization (Multilevel Categorization)
- Define custom searches based on several incident attributes, categorization, or full text
- Automatically alert support teams based on incident information
- Propose similar knowledge articles or related problems
- Bundle similar incidents into a single problem
- Lock and unlock bundled incidents to protect them for manual processing
- Hand over incident records to the Problem Management team
- Define follow-up documents, such as tasks, knowledge articles, or requests for change and present the document flow
- Calculate embedded SLA time and escalation procedure
- Definition of service clocks for OLA & UC Service Level Management scenarios
- Easily forward SAP-related incidents to SAP Active Global Support Backbone

Figure 6: Interaction Between Incident Management and Problem Management Processes

2.1.1 Incident Management
• Social business integration via SAP Jam
• Rule-based notification framework
• Possibility to record the time spent for performed support activities

An end user or key user can create an incident record either by using the WebClient UI or by contacting the service desk team. According to ITIL, the service desk is a help function intended to provide a single point of contact (SPOC) that allows end users and IT employees to communicate. The service desk is responsible for managing the lifecycle of an incident or service request. The service desk employee continually informs the person who reported the incident about the progress of the incident and any potential workarounds.

After the creation of the incident report, the first-level IT support (service desk) begins analyzing the incident and provides a solution if one is already available. To search for an existing solution or a workaround to the issue, IT support can use the customer’s own solution database in SAP Solution Manager. The solution database contains data from the customer’s support organization. This database can be used to record known solutions. As the database fills with problems and corresponding solutions, it becomes a useful, time-saving tool for the service desk.

Depending on the business scenario, a dispatching team may be established. This team is responsible for forwarding new incident records to the second-level IT support. If the first or second-level IT support is not able to provide a solution, a dedicated problem record can be created for the Problem Management team. In addition, similar incidents can be combined that have the same cause into a single problem record. The ability lock the combined incidents to protect them from manual processing is available. Setting the problem record to resolved will also resolve all referenced incident records.

2.1.2 Problem Management

Problem Management processes include investigating disruptions to provide solutions and, therefore, prevent disruptive events reoccurring and providing fixes, such as documented workarounds. With Problem Management, the aim is to prevent incidents from happening and minimize the impact of incidents that cannot be prevented. Problems are identified as being the root cause of one or more incidents.

All the information relating to the disruptive event is documented in the problem record. This includes a reference to all incident records that have been assigned to the problem. Problems can also be created and recorded separately, without any reference to incidents, to prevent disruptive cases. These records can be forwarded to SAP support or create a request for change.

With ITSM, perform the following tasks to support this process:

• Allocate multiple incident records with the same cause to one problem report
• Propose existing problems for incident records based on similar parameters, for example, categorization
• Lock and unlock bundled incident records to protect them from manual processing and reduce unnecessary work
• Create problem records directly from incidents as follow-up documents
• Replicate data (status, text, attachments, Knowledge Articles and SAP Notes) from a solved problem to all referenced incident records
• Define follow-up documents, such as tasks, knowledge articles, or requests for change and present the document flow
• Easily forward SAP-related problems to the SAP Active Global Support Backbone
• Possibility to record the time spent for problem solving activities
The Problem Management team must perform an in-depth investigation to diagnose the root cause of incidents identified during the Incident Management process and determine the best way to resolve these problems. To support this, the Problem Management expert can create tasks in a problem record and assign them to the relevant employees. These tasks are linked to the problem record, in which the processor can monitor their progress directly.

The Problem Management team is also responsible for handing over a problem record to the Change Management team if resolving the issue requires a change. The processor creates a request for change as a follow-up document directly in the problem record. The processor also ensures that the solution is implemented correctly and according to appropriate control procedures. For example, by following Change Management checks and proper Release and Deployment Management processes. Over time, resolving issues by applying specific changes reduces the number of incidents and their impact.

In addition, the Problem Management team should proactively analyze known error records, for example, existing incidents, their solutions, and workarounds, to perform a trend analysis. This can be useful as it allows identify certain things that are important during the Optimize phase. For example, a workaround is often used to resolve an incident, consider making a dedicated change to reduce the number of similar incidents in the future.

Incident Management and Problem Management are closely related and typically use the same known-error database with similar attributes, for example, categorization, impact, and priority. The Problem Management team is ultimately responsible for maintaining information about problems, their appropriate workarounds, and solutions. This means that the known-error database constantly expands and is filled with valuable information. Both processes benefit because the Incident Management team can find solutions more quickly and the first-time fix-rate increases, leaving the Problem Management team to focus on critical issues instead of solving similar issues multiple times. This also ensures effective communication between both processes when dealing with related incidents and problems.
2.2 Other Supported Processes

In addition to the main tasks of Incident Management and Problem Management, ITSM can help an organization to perform a variety of tasks related to the IT Service Management process.

Request Fulfillment

In SAP Solution Manager, pre-defined IT services that are used regularly within the organization, such as resetting a password or assigning new equipment, can be managed using request fulfillment. Usually, this type of service request is handled by the service desk and does not require a request for change to be submitted. There are individual input fields for each service request type, used to gather all the information required to complete the service request. With this system, there is no need for direct communication between the service desk and the person requesting the service. In addition, you can create instructions on how to provide the service. Users can create their own service request records or generate them directly from the service catalog by ordering any of the available services.

With ITSM, perform the following tasks to support this process:

- Present top service request types in the WebClient UI
- Define service-request specific input forms and text templates
- Create checklists including workflow tasks to fulfill the requested service
- Creation of Guided Procedures with steps, sub steps and activities for service fulfillment
- Integrate with Service Catalogue Management and Change Management processes
- Possibility to record the time spent for the service request fulfillment

Knowledge Management

In SAP Solution Manager, there are several functions that support knowledge management. For example, it can be used to store, subscribe to, and publish information. In IT Service Management, this information is contained in knowledge articles (KAs). KAs are closely integrated with service records, such as incident records or problem records. Any configuration item (CI) or ITSM process can link to knowledge articles that provide particular guidance, notes, or descriptions with different types, attachments, or even with further links to other knowledge databases or external URLs. Assignments can be made for KAs types, for example, known error, FAQ, or guide.

In addition, SAP Solution Manager collects information related to IT services and stores it on one platform. It includes references to any SAP or non-SAP system in the customer's IT landscape and centrally stores IT-related information. SAP Solution Manager contains information about business processes, applications, IT infrastructure items, IT services, business partner information, and reporting data to act as a complete enterprise resource planning tool, specifically designed to manage SAP customers' IT systems.

With ITSM, perform the following tasks to support this process:

- Store KAs in different languages
- Approve and authorize the KA concept
- Seamlessly integrate with Incident Management and Problem Management processes
- Generate KA proposals for existing incident or problem records
- Set up autosuggest functions for KAs based on categorization
- Create KA records in service messages, such as problem records, as follow-up documents
- Assign categories
- Perform a full-text search for KAs
- Search released solutions in the knowledge database
- Use standard SAP Solution Manager functions, such as sharing, favorites, saved search lists, or tag clouds to distribute information to specific people or groups across the enterprise
- Access SAP Enterprise search

Change Management

In SAP Solution Manager, Change Request Management is used to handle Change Management processes. In general, the tool allows management of both SAP-related and non-SAP changes. Integrate this solution can be integrated into the SAP environment and deployment tools that help automate the change-making process across the landscape.

Change Request Management provides two main types of documentation. Requests for change to report new changes, and change documents to individually make changes based on evaluations performed following the request for change.

With ITSM, perform the following tasks to support this process:

- Create, process, and review requests for change
- Assess, evaluate, and authorize changes
- Authorize and coordinate building, testing, and deploying changes
- Review and close changes
- Implement sophisticated approval management processes
- View responsibilities in each change phase
- Integrate with release and deployment management processes
- Create request for change records directly in incident records or problem records as follow-up documents
- Integrate with Process Management, Requirements Management, IT Project Management (ITPM) and Test Management processes
- Possibility to record the time spent for performed Change Management activities

For more information, see the SAP Standard for Change Control Management.

Release and Deployment Management

In SAP Solution Manager, you use Change Request Management to implement the release and deployment management processes. The tool differentiates between two main types of release: releases that relate to SAP Components and custom releases that are assigned and relate to any type of configuration item that has been defined in the system.

The solution can be integrated with SAP deployment tools that help to automate the release deployment process. The tool can be integrated with non-SAP technologies and use it to manage changes and releases related to other technologies and software. SAP Solution Manager also contains a project management suite that enables you to check and manage all release-related activities in detail.

With ITSM, you can perform the following tasks to support this process:

- Create and process change records
  For more information, see the SAP Standard for Change Management.
- Deploy SAP-based changes (ABAP, Java) across your SAP landscape by using the Change and Transport System (CTS, cCTS, and CTS+)
- Use advanced CTS functions, such as transport of copies to minimize the number of transport requests or transport collection to group changes to several systems, which belong to one request for change
- Control your project phases, for example, release and go-live, from a task list
Integrate Change Control Management features into SAP Project and Portfolio Management
Integrate Change Control Management processes into Test Management to assign test plans or test packages
Integrate with SAP Requirements and Release Management (SAP MaxAttention customers only)
Automatically update older records, such as requests for change, problems, or incidents
Release Planning & Management

Service Asset and Configuration Management
In SAP Solution Manager, the use Service Asset and Configuration Management systems to store IT assets, applications, and any infrastructure items as configuration items (CIs) in the IBase. SAP Solution Manager is a configuration management system which receives CI data from several configuration management databases (CMDB). For SAP-related data, this data comes from the system landscape directory (SLD), for any non-SAP infrastructure, SAP recommends using SAP IT Infrastructure Management (separate license required).

Configuration items are used to perform Incident Management or Change Management processes. In addition, CIs provide status and relationship information to other CIs to enable impact or root cause analysis in the service processes.

With ITSM, perform the following tasks to support this process:
- Use configuration items (non-SAP assets or SAP components)
- Download existing IT assets from SAP ERP Asset Management
- Integrate with SAP IT Infrastructure Management (CMDB for non-SAP CIs)
- Automatically discover and update CIs
- Present object relationships and related service transactions
- Perform impact and root cause analysis of ITSM processes
- Integrate into the SAP infrastructure over a communication layer
- Implement an authorization concept for CIs

Service Level Management
In SAP Solution Manager, Service level management processes can be developed by monitoring various types of records, for example, incidents, problems, service requests, or requests for change, according to agreed parameters within SLAs, operational level agreement (OLAs), and underpinning contracts (UCs). Typically the initial reaction time (IRT) will be monitored and maximum processing time (MPT) for each SLA, OLA, and UC.

Service level management involves the following main entities:
- Service Profiles define the timeframes during which the IT services and support organization specified in the contract have to be available.
- Response Profiles define the timeframes during which the service should be started and finished. This information is used to derive certain deadlines, for example, first response date and completion date.

Planned values are then calculated with the help of the service profile and response profile. Reporting capabilities are available to compare planned and actual values.

With ITSM, the following tasks can be performed to support this process:
- Define SLAs based on IT assets, business partners, multilevel categorization, or contract level
- Determine SLAs based on priorities and service times
- Ignore SLA-irrelevant status values for duration calculations
- Present important dates and timestamps, such as First Response by or To Do by within the various records
- Develop an escalation procedure, including email notifications based on IRT & MPT violations
- Report SLA violations
- Definition of OLAs (Operational Level Agreement) for monitoring processing times based on involved Business Partners
- Definition of UCs (Underpinning Contract) for monitoring incidents and problems which have been forwarded to external service providers or suppliers

Service Portfolio & Catalogue Management
In SAP Solution Manager the processes Service Portfolio & Catalogue Management allow to define multilevel service packages composed of several sub services or another service packages. Finally, a whole service tree can be structured within the IT Service Management - the top-level service representing an end user service is achieved by technical IT services.

In case that a service has been assigned to a category of the Service Catalogue, end users have the ability to order this one via the Web Self Service Portal. The ordered service including the service package with all its subservices has to be approved by the manager. With the integration to the Request Fulfillment process the service parts can be processed via dedicated service requests which are created automatically after providing the approval.

The following features are provided by the SAP Solution Manager ITSM to support this process:
- Ordering of end user services and service packages via the Web Self Service Portal
- Direct creation of Service Requests via using the Service Catalogue
- Authorization concept for Service Catalogue categories
- Building a service hierarchy (service packages composed of subservices)
- Various service maintenance capabilities such as service details, service status, attachments, URLs, price information, etc.
- Definition of easy to use service-specific questionnaires which have to be filled by end users
- Integration to Request Fulfillment process for automatic creation of dedicated service requests
- Integrated approval procedure
- Integration capabilities to other SAP products such as ERP or License Management

The IT Service Management platform is integrated in all Agile Life-cycle Management processes of the SAP Solution Manager. According to that, following additional ITIL processes are supported:

- IT Service Continuity Management
- Availability Management
- Capacity Management
- Event Management

By the integration with optional available SAP IT Infrastructure Management (separate license required) sophisticated monitoring and management capabilities will also be available for non-SAP Assets.
Furthermore, SAP Enterprise Resource Planning (ERP) allows the establishment of Financial Management for IT Services for fulfilling budgeting, accounting, and charging requirements.

2.3 Basic Architecture

SAP Solution Manager 7.2 combines both SAP Customer Relationship Management (CRM) with the integrated functionality of IT Service Management and SAP Solution Manager’s Key Value Chains in one powerful, centralized platform. This orchestration leads to the fact that each application, service and business life-cycle phase is able to be supported by the IT Service Management processes.

The integrated CRM switch framework offers the possibility of activating several additional functionalities according to the specific business needs for gaining the mode of operation for the IT Service Management.

Business Warehouse Analytics provides powerful reporting tools for incident and problem management. These reports analyze the current status and history of incident and problem records over a period of time using detailed queries.

Figure 8: IT Service Management & Key Value Chains on a Single Platform
SAP Customer Relationship Management

SAP Customer Relationship Management (CRM) supports the ITIL best-practice workflows designed and modeled by CRM. It allows a quick set up of processes by using existing IT service workflow templates. Business-specific Incident Management and Problem Management processes can be adopted on different workflow profiles.

CRM offers a modern and flexible user interface that makes ITSM easy to use. The WebClient UI is fully customizable and expandable for additional customer requirements.

The CRM master data model delivers all required IT service data, such as people, organizations, configuration items, and products. By using the master data concept for relationships connection to these different master data elements is possible. This helps to ensure the data integrity of the IT-services. Automation of CRM IT features, such as the post-processing framework, partner determination, and multilevel categorization in Incident Management and Problem Management processes.

Business Functions

With Business Functions, SAP provides new features and enhancements in self-contained units for existing SAP Solution Manager. This enables to activate specific new features and enhancements for IT Service Management processes. With the help of the SAP Switch Framework the activation of additional Business Functions can be performed.

Key Value Chains

Companies expect from their IT departments that mission-critical business applications run smoothly, without business disruptions, at low cost, and that they can be adapted easily to new requirements. It is the mission of SAP Solution Manager’s Agile Lifecycle Management to achieve this. The Key Value Chains consist of processes, tools, services and best practices, to manage SAP and non-SAP solutions, throughout entire applications, services and business demands.

Generally, the Agile Life-cycle Management is structured along four Key Value Chains supported by SAP Solution Manager 7.2 to manage the "business of IT" fully aligned with the business demand:

![Figure 9 Agile Life-cycle Management with Key Value Chains on a single platform](image-url)
o Portfolio to Project to drive the portfolio of projects and balance business initiatives and their business value against IT capacity, skills and timelines
o Requirement to Deploy to build what the business needs, when it needs it with measured business outcome
o Detect to Correct to anticipate and resolve production problems
o Request to Fulfill to catalog, request and fulfill services

For more details about the complete portfolio, please refer to: https://support.sap.com/solution-manager/processes.html

Business Warehouse

SAP NetWeaver Business Warehouse (BW) is part of the SAP NetWeaver platform. The data warehouse integrates, stores, and manages company data from many sources. Analyzing the data by using BW functions enables discovery important information, which can be used to support decision-making processes in a company. SAP NetWeaver BW, therefore, helps optimize business processes and enables quickly action according to market demands, giving a company a decisive competitive advantage.
2.4 Integration Scenarios

IT Service Management can be integrated with a broad range of functions and systems. ITSM includes all the integration points shown in the following figure:

![ITSM Logical Architecture](image)

Incident and Problem Management represent very important processes within the IT Service Management. Together with the other ITSM processes and the interconnection with the whole Agile Life-cycle Management, Incident and Problem Management guarantee the successful operation of the business IT and the related business services.

2.4.1 Integration with Agile Life-cycle Management

The IT Service Management platform is integrated into Agile Life-cycle Management provided by SAP Solution Manager.

In the following example, see how closely interwoven the activities between IT Service Management and the functional areas of the Key Value Chains are:

The SAP Solution Manager monitors a company’s business processes and its entire system infrastructure. In case that a defined threshold of one of the KPIs has been violated a related Alert will be
created automatically (Event Management). By the integration with the IT Service Management, out from the alert also a dedicated Incident record will be created in this scenario.

The Incident is processed by the Service Desk employee within SAP Solution Manager’s IT Service Management. Here a detailed root cause analysis is carried out with the help of other SAP Solution Manager applications and functionalities, such as trace, change or exception analyses, and the relationships to other IT objects are considered (Impact Analysis).

To examine the cause of the alert in more detail, the Service Desk employee has the ability to create a Problem record directly out from the Incident as a follow-up document. This Problem will be forwarded to the responsible Problem Management expert team which is specialized to perform a deeper issue investigation.

The Problem Management process is integrated in SAP support message processing (SAP Collaboration), from where the ability to request support from SAP Active Global Support Backbone. Let’s imagine that SAP AGS has provided a SAP Note as a solution for an issue, which is now ready to be implemented with the help of SAP Notes Assistant. However, as this leads to a change in the live system, create a Request for Change (Change Management) out from the Problem record, which, after it has been approved, is implemented by means of a correction from the development system to the production system (Deployment Management).

As the Incident records documents, which business process is affected by the change, it is possible to identify an appropriate test case in the SAP Solution Manager Solution Documentation, in order to test (either manually or automatically) the business process that is affected by the change (Test Management).

Finally, the Problem and Incident records are closed.
2.4.2 Integration with Other SAP Products

SAP Front-End

SAP Solution Manager can be integrated into the following SAP front-end components to create incident records:

- SAP GUI
- SAP CRM WebClient UI
- SAP Solution Manager LaunchPad
- SAP CRM Interaction Center
- SAP UI5 Applications
- SAP Portal
- SAP NetWeaver Business Client

If an end user discovers a malfunction in one of these front-end components, they can create an incident record in the current transaction. The record is then forwarded to IT Service Management. The user immediately receives a message number, which can be used later to track the progress of the incident. The progress of incidents can be tracked by using the WebClient UI or by contacting the service desk. When the incident record is sent, the front-end gathers background information about the system from which the incident has been created and adds this automatically to the record. This provides the support agent with important information to help them find a solution.

SAP UI5 Application

SAPUI5 represents SAP’s user interface JavaScript toolkit for HTML5 applications. It consists of a collection of libraries that developers can use to build desktop and mobile applications that run in a browser. SAP UI5 uses SAP’s new web development standards based on Fiori design principles. Such applications can be also integrated into the Solution Manager LaunchPad as an information and inbound channel for the IT Service Management.

E-Mail Response Management System

The E-Mail Response Management System (ERMS) is a tool for managing large amounts of incoming emails. Instead of routing all incoming emails into one queue, ERMS provides services for processing and organizing incoming emails automatically. For instance, dedicated Incidents can be created automatically out of incoming emails via using CRM rule policies. These Incidents are directly forwarded to the responsible Support Teams. This reduces the need for manual intervention by ITSM dispatchers and processors. Thus, substantially increasing efficiency and processing accuracy, by helping processors and dispatchers to process emails in less time and allowing them to provide the same response quality regardless of the skill level.

SAP Contact Center

By the integration of the SAP CRM Interaction Center with the product SAP Contact Center, calling business users can be easily captured without manual intervention. All detailed contact information as well as the raised business transactions such as incidents, service requests or related problems and request for changes are displayed immediately when a new phone call is accepted.

It improves customer services across calls, email and web channels – even when the volume is high and resources are distributed. Contact center operations, provide fast access to problem solvers and embed multichannel communications in SAP Customer Engagement and Commerce applications.
SAP Business Suite

ITSM and ALM can be integrated with SAP CRM and SAP ERP functions. SAP Solution Manager is technically able to use any CRM function based on SAP NetWeaver. In the CRM service area, some processes work well with ITSM processes. CRM middleware can be used to synchronize data from a managed ERP system. For more information, contact the SAP sales representative.

1 Note
To use some of these processes, additional licenses may be needed.

SAP Collaboration

For SAP-specific message processing, integrated SAP Solution Manager into the other SAP applications. This enables creation of notifications. SAP Solution Manager allows message processing between users, internal support organizations, SAP Active Global Support, and SAP partners.

Customers can work directly with SAP Active Global Support to shorten solution times. This enables them to target specific information and allows SAP Support to process message more efficiently.

If a partner’s software is affected by a problem, the SAP Active Global Support Backbone gives them access to all of the functions available to SAP Active Global Support, for example, root-cause analysis or the ability to create notes.

SAP IT Infrastructure Management

SAP IT Infrastructure Management is a solution for acquiring and administrating IT components in an infrastructure, including PCs, printers, servers, and routers. This management solution enables the collection of infrastructure data for all components within an IT landscape and perform comprehensive monitoring without the need to install any agents. The collected data is stored in a configuration management database (CMDB), which is the basis for IT Service Management. The integrated CMDB allows a clear view the infrastructure of both SAP and non-SAP environments. Complete system and device information can be found relating to the relevant IT component and this can be correlated for Incident Management and Change Management, as well as monitoring and alerting processes. It is important to automatically detect all active components and normalize data throughout the IT Service Management process.

The following functions are core components of SAP IT Infrastructure Management:

- Automatic discovery of the IT infrastructure
- Allocation of the elements to the systems or processes
- Monitoring and alerting for any network-enabled devices and systems
- Lists of all configuration items involved in Incident Management and Service Management processes
- Application lifecycle process support

For more information about IT Infrastructure Management, see SAP Note 1652552 at https://support.sap.com/notes.

SAP CRM and Third-Party Help Desks

IT Service Management provides an open WebClient UI that can be used by customers and other manufacturers to exchange incident records with SAP Solution Manager and one or more external ticketing systems. For example, using only some SAP ITSM functions can be selected incase replacing all the existing non-SAP help-desk tools is not on desired. The bi-directional interface can be used to create messages in SAP Solution Manager and then transfer the messages to another tool for further processing.
Message can also be created in another help-desk system and transfer it to SAP Solution Manager. However, to do this, further processing activities must be performed in SAP Solution Manager. The fields in the source system are synchronized but the message can only be processed in the target system.

Configuring the interface to enable it to use multiple systems. In addition to connecting products from external manufacturers, linking two SAP Solution Manager systems using the same technology. Using this setup to connect to ITSM Incident Management if it is operated on a standalone SAP CRM system.

The data is exchanged in XML format. Relevant customizing settings, such as mapping definitions on the field level, together with documentation can be found in the SAP Solution Manager Implementation Guide. For more information, see SAP Support Portal at http://www.support.sap.com.

Some providers offer integration with SAP Solution Manager as standard and are certified by SAP. SAP recommends checking with the manufacturer whether they offer a standard interface with SAP Solution Manager before implementation.

For more information on certified providers, see http://www.sap.com/partners/overview.html.

Text Retrieval and Information Extraction
TREX provides powerful analytic capabilities for large data volumes. It can join and aggregate structured data from relational tables in a wide range of business applications and can retrieve and classify unstructured data from text documents in knowledge management applications. TREX is a search engine that can index and analyze both structured and unstructured data. TREX supports numerous search options including Boolean search, fuzzy search, wildcard search, multilingual search, and attribute search. TREX enables a full text search for incidents and problems within IT Service Management.
2.5 Use Case Scenarios

Creating Incident Records in Managed Systems

If SAP Solution Manager is connected to the SAP application, incidents can be reported in the managed system directly in the transaction in which an error occurred. To do this, proceed as follows:

1. In the affected transaction, choose Help ➔ Create Support Message or use the appropriate entry in the WebClient UI.
2. Enter a short text, a priority, and a problem description in the dialog. The name of the component in which the error occurred is automatically added by the system.
3. Save all entries.

This is not the only information that SAP Solution Manager automatically acquires to provide effective and targeted support for the SAP solution. Every incident stores technical data such as the system ID, the client, the support package version, and the transaction being used. This minimizes the number of questions sent to the reporter by the service desk employee and accelerates the support process.

Saving the incident record automatically sends it to the service desk in SAP Solution Manager. The reporter is notified that the incident record has been created in SAP Solution Manager, and a system message containing the incident number is generated. By using automatic support-team determination, the incident can be assigned automatically to the respective support level. For building dispatching rules, several incident attributes like SAP component, priority, or categorization can be used. Finally, the reporter can access the incident record in the WebClient UI.

Forwarding SAP-Related Incidents to SAP Active Global Support

If a support organization is not able to find a suitable SAP Note on SAP Support Portal and cannot identify the problem using root-cause analysis, the incident can be forwarded to SAP Active Global Support (SAP AGS).

In IT Service Management, SAP AGS works closely with the customer by contacting them directly in the incident or problem record. All necessary information, such as the message number at SAP, current status, timestamps, provided attachments, implemented SAP Notes, and a description of the solution, appear directly in the incident or problem record.

Referencing Affected IT Assets During Creation of Incident Records

When reporting incidents, the reporter can log the affected SAP or non-SAP system as a configuration item within the incident record. User authorizations are set to ensure that reporters can only select certain configuration items.

By using standard SAP Solution Manager data queries, all records can be viewed, such as incidents, problems, or requests for change, which belong to a specific configuration item. This enables the ability to report on the impact of these issues on specific configuration items and track any changes that have made so far.

Creating Incident Records from the Test Management Workbench

If Test Management processes are used, the option to report upcoming test-case errors to IT Service Management is available. These errors can be created as incident records directly from a test package or test case. Information about the test case, for example, the test case description, is added to the incident record automatically. The ability to jump from an incident to the Test Management workbench is an option to get information about how to resolve the test-case error.
Creating Incident Records from Technical Monitoring

If Technical Monitoring features are used in the SAP landscape, the system can automatically create a dedicated incident record in IT Service Management from the alert. During technical monitoring, the alert is triggered when a specified KPI meets a predefined threshold. The alert is removed again when the KPI returns to a value within the threshold. The alert only provides basic information and it is not required for documentation purposes. Integration with IT Service Management allows the ability to add more information to the alerts and their related incidents and to document everything that is needed to do to process the alert. In addition, using the reporting capabilities available in the BW. This allows the ability to analyze historical alerts.
3 LIFECYCLE OF IT SERVICE MANAGEMENT

3.1 Plan phase

In this phase, all the aspects that might affect your IT Service Management implementation must be considered. This is important because the implementation must be run in the same way as any project. The following chapter provides guidance on how to plan an implementation and fulfill the prerequisites.

3.1.1 Project Related-Aspects

It is important that the general aims of implementing IT Service Management in your company must be clarified using an "as is" and "to be" analysis. The scope of the project must be defined, including which IT Service Management processes and functions will be deployed. Usually, it is not necessary to implement all tools and functions to begin with. Instead, identify the business-critical core services and processes and focus on implementing the necessary functionality to support them.

Think about what kind of project is intended. For instance, consider a rapid deployment solution if a pilot or proof-of-concept is running, or a full implementation using a phase-based approach with well-defined milestones is desired. The kind of project is running also influences how to proceed with any subsequent planned activities.

Start defining priority-based work packages and schedule required time frames for finishing them, calculate the effort and plan assets according to resources and capabilities.

The following table lists examples of these factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>• Available staff</td>
</tr>
<tr>
<td></td>
<td>• Budget</td>
</tr>
<tr>
<td></td>
<td>• Current or planned infrastructure</td>
</tr>
<tr>
<td></td>
<td>• Access to information</td>
</tr>
<tr>
<td></td>
<td>• Existing applications</td>
</tr>
<tr>
<td>Capabilities</td>
<td>• The structure of an organization</td>
</tr>
<tr>
<td></td>
<td>• Management responsibility</td>
</tr>
<tr>
<td></td>
<td>• Current documented processes and knowledge</td>
</tr>
</tbody>
</table>

Evaluate which part of the IT landscape needs be covered by ITSM. Decide if only SAP-applications need to be covered or whether to include non-SAP applications. The main difficulties in doing this are organizing and standardizing current live processes and ensuring cooperation between all stakeholders.
Consider the following high-level work packages:

- Analysis of functional and organizational requirements
- Blueprinting and preparing functional specifications
- Hardware setup
- Implementation (prerequisites, basic configurations, customizing, and migration)
- Preparation of master data (users, organizational units, technical systems, and authorizations)
- Preparation of documentation (configuration documentations, user manuals, and test cases)
- User and administration training courses
- Testing (functional tests, and integration and acceptance tests)
- Bug fixing
- Planning and preparation for go-live
- Performing go-live
- Project management

3.1.2 Organizational Aspects

In addition to the project-related aspects, examine any organizational aspects. It is important to identify critical functions, roles, and responsibilities. Document this in a responsibility assignment (RACI) matrix and prepare a communication plan. This means that all the necessary contact details are in place. Clearly assign all project members to the ITSM project and ensure that they are available for the duration of the project.

First, make sure that all project members have a general understanding of ITSM. Teams must be educated if they are performing the implementation, and will need to be trained appropriately. SAP offers several training courses and knowledge sources for this purpose. For more information, see Training and More Information. External resources that responsible for various project-related activities such as project management, implementation, or development can support, for example, from the SAP Customer Center of Expertise (CCOE).

The CCOE improves transparency and quality management, aiming to resolve critical challenges across SAP Solution Operations. The CCOE program provides information, methodologies, and tools to help improve quality checks and continuously improve SAP Solution Operations. It verifies the processes that customers implement to perform these activities and ensures that the process is compliant with the SAP Standards for E2E Solution Operations.

Be aware of any disagreements between the departments or employees regarding changes. In order to be successful, all acceptance and support of management staff, affected process owners, and stakeholders must be granted.

Consider work spaces and grant access to buildings or other necessary areas for external employees during an on-site engagement.
3.1.3 Technical Aspects

The following technical aspects have to be taken into consideration when planning an IT Service Management implementation:

Hardware Sizing

When sizing hardware for ITSM, consider the following KPIs:
- Workdays per year, according to company policy
- Average workday start and end time
- Peak load start and end time
- Number of concurrent users in average per year, peak during day
- Number of low, medium, high activity users
- Maximum number of user logons per hour
- Throughput – Average number of Service Desk documents (Incidents, Problems) created per year, peak during day

When scaling dedicated hardware, consider the following KPIs:
- Average number of concurrent users during peak times
- Average number of queries per user in one hour
- Average number of high and medium connectors per query
- Total number of files to be loaded
- Total number of business objects to be loaded
- Number business objects increase per year

For detailed information in regards to the topic of hardware sizing please check the Master Guide for SAP Solution Manager 7.2:
http://service.sap.com/quicksizer

SAP Solution Manager Configuration

Before starting an ITSM implementation, complete the System Preparation, Basic Configuration, and Managed System Configuration scenarios of SAP Solution Manager Configuration (transaction SOLMAN_SETUP).

Master Correction Note

Make sure that the latest version of the Master Correction Note is implemented according to the SAP Solution Manager support package stack level. Check for updates regularly to ensure that bug-fixes are implemented.

System Access

Grant system access, including Internet access or internal network connection, to everyone involved in the configuration in both SAP Solution Manager and the managed systems. In addition, do not forget to prepare SAP Solution Manager system users, including user names and passwords, with sufficient authorizations for all involved stakeholders. Requesting authorization objects can be time consuming and laborious during the implementation phase.
If SAP staff are involved in the implementation, it is crucial that the enablement of the remote SAP R/3 and HTTP connection from SAP Support Portal to SAP Solution Manager.

Change Management Process
Implementing and customizing actions are stored in dedicated transport requests as workbench and customizing requests. Therefore, think about the change management process for the implementation project. SAP recommends that the bundle all relevant IT Service Management transports into one CTS project or use Change Request Management.

SAP Connect
SAP Connect (transaction `SCOT`) has to be configured to send emails according to defined email actions within IT Service Management.

Text Retrieval and information Extraction
To enable full-text search within incidents, problems, and knowledge articles, set up the Text Retrieval and information Extraction (TREX) search engine.

Non-SAP Infrastructure
If IT Service Management will be used for non-SAP IT assets, use one of the following methods to send the information to SAP Solution Manager:

- Manually create the data within IT Service Management
- Integrate ITSM with ERP Asset Management (separate license required)
- Integrate ITSM with SAP IT Infrastructure Management (separate license required)

SAP Jam Integration
Optionally, the IT Service Management can be directly integrated with SAP Jam. SAP Jam is a collaborative environment that brings people, information, applications and processes together to solve business-critical problems and drive rapid results.

As a prerequisite SAP Jam needs to be installed and configured. Business Functions have to be enabled within the Solution Manager to establish the integration with the IT Service Management.

3.1.4 Incident and Problem Management

Before implementing the incident and problem management processes, consider several specific planning and design activities.

Existing Processes
Review all process documentation, for example, process-flow diagrams or descriptions, particularly those relating to Incident Management and Problem Management processes and check to see if any modifications are necessary. This documentation can be used as a basis for the implementation.
Process stakeholders must work together, including the process owner, process manager, and practitioners, to define process descriptions. Process descriptions are often missing when the problem management process has not been introduced during the implementation project. Furthermore, add all related stakeholders to the RACI matrix and the communication plan.

Functionality
Check whether specific functional requirements are covered by SAP IT Service Management. Build a requirement matrix to analyze whether key features are covered fully, partly, or not at all. This can be easily document and necessary developments added here. Later, track any effort spent implementing key functionalities, such as customizing or development, in the project plan.

Analyze the following core features:
- Automatic email notifications in case of status changes
- Multilevel categorization
- Automatic support team determination and incident dispatching
- Processing Times
- Notification Framework
- Embedded Search

Support Organization
Build the basic structure of the individual support organization in SAP Solution Manager. Before this can be done, have to analyze and define the structure for the organization. You’re the structure can be based on any kind of organizational structure. After assign team members, for example, dispatchers, message processors, or service managers.

Setting up the support organization enables the use of several features in ITSM. For example, notify the responsible team via email when an incident has been automatically dispatched to them or when the search filter for incident and problem records assigned to the support team becomes applicable.

Inbound Channels
With ITSM, incidents can be raised in a variety of ways. When requirements are being analyzed, decide the scope of inbound channels. Remember to set up each function and that each feature requires specific configuration activities.

ITSM provides the following inbound channels:

<table>
<thead>
<tr>
<th>Channel</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebClient UI</td>
<td>End users can raise and monitor their own incident records in the WebClient UI. End users can access this stripped-down UI, which provides a guided procedure for creating incident and service request records, and specific widgets for viewing their own incident records, service request records, and service order records.</td>
</tr>
<tr>
<td>SAP Solution Manager LaunchPad</td>
<td>The SAP Solution Manager LaunchPad is representing the general entry point to the SAP Solution Manager. Using state-of-the-art design principles, the LaunchPad provides a role-based experience across all lines of business, tasks and devices. It grants central access to all SAP Solution Manager functions and capabilities by providing functional groups which contain a set of tiles representing business applications called SAP Solution Manager Apps. A tile can include live status indicators, such as the number of open Incidents. Which tile groups are available depend on the assigned user.</td>
</tr>
</tbody>
</table>
authorizations. Furthermore, the possibility to compose most favorite apps within a personalized tile group is available. The app ‘My Incidents’ allows direct Incident creation and tracking for end users such as business users. Additionally, apps are offered which allow direct navigation to the ITSM Web UI and reporting views dedicated to dispatchers and typical message processors. The responsive UI technology enables also the usage on mobile devices.

**Channel** | **Description**
--- | ---
**ERMS (Email Response Management System)** | ERMS contains an email inbox and enables the creation of incident records directly from received emails. Emails and incidents are linked by a specific tracking ID. This means that incident records and their related emails can share attachments and textual information.

**Managed systems** | End users can create an incident record from an SAP managed system experiencing an issue. Detailed information, such as system data, error codes, and the relevant transaction, is transferred to the record.

**Interaction Center for IT Service Desk Agents** | The Interaction Center enables the ability to automatically identify accounts, objects, and installations. It also provides an agent inbox, which can integrate with SAP Business Communication Management or third-party telephone systems (SAP Contact Center as separate pricelist component).

**Authorization Concept**

Identify all user groups working with ITSM and define the related authorization roles. Documenting and setting an authorization concept is not simple and must be carefully considered. SAP Solution Manager allows the definition of many authorization objects, for example, to view and use different UI components, set the visibility of text types, apply specific workflow statuses, or create and modify incident and problem records.
3.2 Build phase

Once the Plan phase has been completed, begin to implement the solution. Make financial, IT, and personnel resources available from the start of the Build phase.

Set up a system landscape with a minimum of two systems, one for development and one production. If this is a completely new implementation, use a sandbox environment. After implementing and successfully testing the sandbox, copy it to construct a maintenance landscape.

After preparing the system and performing the basic configuration of SAP Solution Manager, complete a configuration for managed systems according to the level of integration between IT Service Management and the managed system configuration. The following chapter provides guidance on how to implement a IT service management process.

3.2.1 Solution Manager Landscape

SAP recommends setting up a three-tier system landscape with a development, quality assurance, and production system. Begin implementing IT Service Management on the development system. After finishing the implementation, transport the changes to the quality assurance system which are used to run test cases. After a successful test, transport the ITSM implementation to the production system and activate it. Continuous improvements, for example, developments, implementing new features, bug fixing, and upgrades, should only be introduced in the development system. This protects the production environment against any unconfirmed and unsuccessfully tested changes.

If for any reason a three-tier landscape cannot be set up, establish at least a two-tier landscape for SAP Solution Manager. In this case, use the non-productive system for both the pilot project implementation and for testing.
Figure 13: Two-Tier System Landscape

Connect the non-productive SAP Solution Manager systems and the non-productive managed systems to the productive SAP Solution Manager system. Use one of the following connection types:

- Connection via trusted RFC between productive and non-productive SAP Solution Manager systems
- Connection via trusted RFC between productive SAP Solution Manager system and managed systems

3.2.2 Functional Implementation

The start point for implementing ITSM is the IT Service Management scenario of SAP Solution Manager Configuration (transaction SOLMAN_SETUP). This includes a guided configuration procedure containing everything needed to do to set up ITSM.

In addition to SAP Solution Manager Configuration, advanced implementation activities and documentation can be found in the Solution Manager Implementation Guide. To find this, in SAP Customizing Execute Project (transaction SPRO) choose SAP Reference IMG → SAP Solution Manager Implementation Guide → SAP Solution Manager → Capabilities (Optional) → IT Service Management and regarding CRMWeb UI choose SAP Reference IMG → SAP Solution Manager → Customer Relationship Management → UI Framework.
Adapting Incident and Problem Workflows

Once the IT Service Management basic configuration has been completed, adapt the workflow for incidents and problems according to business needs by customizing dedicated transaction type profiles. Use the BAdIs provided by SAP to enhance the processes. The web-based user interface can be adjusted using the Web UI configuration mode or the Application Enhancement Tool.

Master Data

Before create or process incident or problem records can be created, prepare the master data.

The master data contains the following objects:

- System User
- Business Partner
- Organization
- Configuration Items (SAP installations and non-SAP assets)
- Multi-Level Categorization
- Service Products

Business Partners

In SAP Solution Manager, business partners guarantee effective and easy communication between all employees involved in the Incident Management process. All relevant information relating to a business partner can be accessed from a central location.

If there is a business role with the appropriate administrative authorizations, for example, SOLMANPRO, create individual business partners manually in SAP Solution Manager. In general, however, business partners are migrated from connected SAP systems with background processing. The report copies all or selected users (including their email addresses) from other systems and generates all the necessary business partner functions in SAP Solution Manager, for example, contact, employee, or general. In addition, generate an SAP Solution Manager Login User and assign a template authorization role to the user. Make the relevant settings in SAP Solution Manager’s implementation guide.
It does not matter in which part of a process the business partners are involved. For example, a single employee can function as both a requester and tester. Therefore, use SAP Solution Manager to assign a business partner different roles and relationships to other business partners. In the standard configuration shipped by SAP, some partner functions have been defined.

The following table shows examples of some predefined business partners and their functions:

<table>
<thead>
<tr>
<th>Business Partner</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Represents the role of the business process organization Represents the organization to which the message creator belongs The Sold-to Party partner function is mandatory and cannot be deleted</td>
</tr>
<tr>
<td>Reported by</td>
<td>Creates the message</td>
</tr>
<tr>
<td>Support Team</td>
<td>Represents the respective support team in the customer’s organization</td>
</tr>
<tr>
<td>Current Processor</td>
<td>Represents the employee currently responsible for the message</td>
</tr>
</tbody>
</table>

The organizational schema in the General Attribute Change (transaction PPOMA_CRM), must be up to date and accurately display the organization of the support department.

Use this tool to define the various levels and assign employees to the various groups of experts. This is a prerequisite for activating automatic rule determination that finds a responsible group within the support organization based on message characteristics, for example, category.

To develop end-to-end support concept, clearly define and map the internal support processes in a company. The SAP support process enables implementation of a four stage concepts for various tasks, for example, message processing. This architecture is structured as follows:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First level</td>
<td>First-level support is the single point of contact for end users. Both key users and designated users in the managed system who also work in SAP Solution Manager are included at this level. End users can either create their own support messages, or key users can create support messages for end users from managed systems or from SAP Solution Manager.</td>
</tr>
<tr>
<td>Second level</td>
<td>Second-level support includes employees who are familiar with the details of the customer’s own applications and business processes. These employees assume the role of system administrator. Therefore, second-level support comprises both application and technology experts.</td>
</tr>
<tr>
<td>Third-level (Customer Centre of Expertise)</td>
<td>Third-level support depends on the company’s size. For smaller companies and customers that do not have a Customer Center of Expertise (CoE), this level is equivalent to the fourth-level support component. In this case, tasks that are associated with the Customer CoE level are handled by the second-level support.</td>
</tr>
<tr>
<td>Fourth-level (SAP Active Global Support)</td>
<td>Fourth-level support is SAP Active Global Support. This is the final message processing level for large customers and customers with a Customer CoE. This support level also includes certified partners that are involved in processing and resolving messages through the SAP Active Global Support Backbone.</td>
</tr>
</tbody>
</table>

This structure allows the ability to handle and resolve problem messages efficiently across the whole SAP system. If required, use the organizational model to set up additional support levels in the SAP Solution Manager.

**IBase and Configuration Items**

To use Incident Management and Problem Management scenarios in SAP Solution Manager, the installation in the IBase must be defined. The creation an IBase component for each component system used to send messages to SAP Solution Manager must be made. Therefore, IBase components represent managed systems in your landscape.
In a standard system, IBase components in SAP Solution Manager are managed in the SOL_MAN_DATA_REP IBase structure and are updated automatically for each enhancement made in the Landscape Management Database (transaction LMDB).

Any IT objects that are intended to process in ITSM have to be created as configuration items. Maintain the configuration items for IT objects must be done manually or synchronize them with an SAP ERP system, such as Asset Management, using a CRM middleware. The use of a project as the basis to connect the Configuration Management Database (CMDB) for automatically entering the IT infrastructure can be made.

### 3.2.3 Implementing Interfaces

The effort required to implement IT Service Management depends on the particular implementation scenario. A common scenario involves integrating ITSM with third-party service desk. This enables an integration of a company's current service desks with IT Service Management to allow them to access the SAP Active Global Support Backbone and SAP Partner Ecosystem. Experts in each application have to implement the interface. The different service desks can then exchange and process tickets. Make sure you plan enough time to implement and test interfaces sufficiently. The length of time it takes to implement and test varies greatly depending on the complexity of a solution. Development packages are defined and calculated in the implementation effort during the Plan phase.

### 3.2.4 Authorization Concept

Authorization concept are created for the Incident Management and Problem Management during the Plan phase. During the Build phase, creation of the user profiles for dedicated IT Service Management users begins. SAP provides predefined composite-roles for each user group, which include individual roles for the entire Incident Management and Problem Management processes and features. For more information about implementing an ALM authorization concept, see the Application-Specific Security Guide for SAP Solution Manager on the Service Marketplace at http://service.sap.com/instguides/ → SAP Components → SAP Solution Manager → Release 7.2 → Operations → Application-Specific Security Guide.

### 3.2.5 Testing, Bug Fixing, and Retesting

Test packages with test plans must be available to perform an integration test that covers the entire process, together with other integration scenarios and systems. SAP provides tools for Test Management. These helps store test sources for central access. Test results can be access and the ability to see test status is available. For more information, see the SAP Standard for Test Management.

Any issues are then sent to the relevant ITSM expert for correction. Bug fixing and retesting activities usually require a lot of time. As such, plan them carefully.
3.3 Run phase

After a successful integration test, prepare and perform the transition phase. The production system is then ready for import ITSM transport requests. Perform any preprocessing activities before import, including loading master data. During import, the SAP and ITSM implementation teams need to be available to fix import errors immediately. After importing ITSM transport requests, perform the post-processing tasks. This ends the transition phase.

According to the scope of the integration scenario and the available inbound channels for Incident Management, all parties involved and affected partners must be informed about the implementation of the ITSM application. The support organization must be ready to handle requests from end users, such as developers and testers. There should be a single point of contact to bundle different inbound channels for incidents. Use substitution rules to reduce incident and problem processing time.

During service operation, process owners have to monitor different ITSM aspects, including performance and feedback from end users. ITSM offers different reporting features so that they can analyze the state of the ITSM implementation at any given time. Emergency modifications can be made to the solution during maintenance activities to fulfill the ITSM process SLAs that are defined during the Plan phase. Perform any additional modifications or improvements, including implementing new features, as part of Optimize phase.

3.4 Optimize phase

The following chapter provides a method for identifying and applying aspects of the current IT Service Management implementation that could be improved. SAP Solution Manager provides features to help do this.

3.4.1 Deming Cycle

An ideal method for implementing IT Service Management is the Deming Cycle. This is also called a Plan–Do–Check–Act (PDCA) cycle. It is an iterative four-step management method used in business to check and continuously improve processes and products.

The following table describes the aims of each step of the cycle:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Prepare a project plan and a functional specification to establish the objectives and processes necessary to deliver results in accordance with the expected output.</td>
</tr>
<tr>
<td>Do</td>
<td>Execute the activities defined in the project plan and functional specification and implement IT Service Management.</td>
</tr>
<tr>
<td>Check</td>
<td>Test the implementation by executing prepared test cases. Study the results and compare them to the expected results in the functional specification.</td>
</tr>
<tr>
<td>Act</td>
<td>Make corrective actions, for example, bug fixing, where required and highlight and eliminate significant differences between the implementation and the functional specification. Adapt new requirements, if necessary.</td>
</tr>
</tbody>
</table>

After the IT Service Management implementation is complete, it reaches a certain level of stability, known as the baseline. This stable working configuration is then the starting point for the next iteration of the
cycle. Performing the cycle a second time enables learning more about the implementation and make further improvements.

Consider the following activities, when defining a starting point for the next Plan phase:

- Implementing SAP Notes
- Implementing a new version of the central correction note
- Updating to a new support package level
- Implementing new features and functions
- Meeting new requirements
- Automating manual activities
- Monitoring and reporting of ITSM
### 3.4.2 Incident and Problem Management

SAP Solution Manager offers various reporting and monitoring capabilities, which help to improve the Incident Management and Problem Management processes.

#### 3.4.2.1 Web UI Online Monitoring

Using Web UI Online Monitoring, snapshots can be created of the current incident and problem records. Service desk processors can define custom searches based on the concatenation of multiple parameters. These searches can be stored for later use and shared with other users. This can also be exported as a list in an Excel spreadsheet and perform an advanced analysis of the data.

A variety of filters can be applied for analysis. The following parameters are the most useful for improving the ITSM processes:

<table>
<thead>
<tr>
<th>Filter</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category Text</td>
<td>Filtering by category can be a useful way of measuring the effectiveness categories. If people are assigning categories to incidents, then organization is using them effectively. If many records are found with non-specific or no categories, re-definition of categorization schema is needed. If users are not using categories effectively, it is more difficult and less beneficial to process new documents and search for previous solutions.</td>
</tr>
<tr>
<td>Solution Category</td>
<td>Filtering by solution category can be a useful way of seeing how many incidents are currently being resolved by workarounds. A high number of workarounds indicates that dedicated changes are needed. This enables the service desk to focus on new issues.</td>
</tr>
<tr>
<td>Support Team</td>
<td>Filtering by support team can be a useful way of seeing whether new incidents are being assigned to a responsible support team. A high number of unassigned incidents implies that the need to consider setting up specific determination rules to automatically dispatch new incident records to the right support team.</td>
</tr>
<tr>
<td>SAP Incident Number</td>
<td>Filtering by SAP incident number can be a useful way of seeing which incidents have been forwarded to SAP. A high number of SAP incident numbers indicates that you may need to consider giving employees more training.</td>
</tr>
</tbody>
</table>

These filters are examples and you can use many filters can be used to come to a range of conclusions. However, further investigation is often required to identify the root cause of an issue. Concatenating multiple filter criteria provides valuable information for a specific scenario.
Use ITSM Analytics to analyze historical data. The responsible analyst can select any period of time for the report.

Using this feature, certain trends can be seen, which allow identification of areas for deeper investigation. For example, a large number of incident records may have been caused by a previous upgrade. With BW reporting, investigation and filtering by category helps to identify the root cause of incidents. If the incidents were the result of an upgrade, check the priority and user status of the records. If a large number of new incidents have been raised but only a few have been resolved, then an area for improvement has been discovered. Decide on how to improve the upgrade procedure or to increase the number of service desk employees during and after the upgrade in order to handle the number of new incidents that have been raised in addition to those already in progress.

Export these results as an Excel spreadsheet and perform an advanced analysis of the data. With ITSM BW reporting, you can track the following KPIs:
From there, the possibility to drill-down further into one of the tiles to make a detailed historical analysis regarding certain predefined incident/problem attributes such as priority, status, categorization, source of creation or affected configuration item is available.

Figure 18: ITSM Analytics

Figure 18: Tile ‘Created’ for historical data analysis with the help of BW Reporting
The view allows also using any kind of filters and available fields as dimension to display specific diagrams and data information according to business needs.

Figure 19: Tile 'Created' for historical data analysis with the help of BW Reporting
4 DRIVING CONTINUOUS IMPROVEMENT

To measure the success of the IT Service Management implementation, check the efficiency of the support processes by using the following KPIs:

- Length of time it takes the end user to create an error message
- Length of time it takes the central support organization or service desk to provide an initial reaction
- Average resolution time for incidents and problems
- Number of systems involved when incidents are forwarded to partners
- How often the tracking of action items identified in SLA reports
- Stability of incident volume
- Correlation between enterprise satisfaction with current processes
- SLA compliance

4.1 Quality Assurance Tasks

There will have to be a defined quality assurance procedure to make sure that continual improve of the solution is on-going. When developing the procedure, consider the following tasks:

- Define clear ownership of the issue by using a quality manager
- Define message process standards, such as classification and priority definition
- Check number of level 1 priority messages in each function area and level of business
- Improve user guide for Incident Management
- Implement and improve knowledge database to include new functions
- Track the number of messages per day, week, and month
- Track average resolution time and filter by severity, throughput, and processing time
- Ensure message escalation is appropriate
- Ensure SLA compliance is incorporated into the process
- Identify increased message volume caused by project, training, or product quality

4.2 Quality Targets and KPIs

To assess the quality of the IT Service Management process, clearly-defined parameters and measurable objectives must be set. Key parameters should be collated and evaluated with regular reporting. The historical data that is created in this way can be used to identify trends and develop ways to improve the application.
The following table describes the important targets to ensure the maturity of the ITSM processes and drive value recognition of your IT department. The table also describes the main challenges for each of these quality targets and which KPIs can be used to measure them.

<table>
<thead>
<tr>
<th>Target</th>
<th>Challenges</th>
<th>KPIs</th>
</tr>
</thead>
</table>
| Increased business continuity achieved by using modern service desks and successfully integrating SAP Solution Manager into the system. | • Setting up service desks as a single point of contact  
• Ensuring that the predefined communication methods are used  
• Ensuring that employees follow quality standards for messages, for example, priority and classification are correctly used | • Average time required for end users to create an incident message  
• Average time required for administrative tasks  
• Total number of incidents affecting business continuity (as a control measure)  
• Initial reaction time by category (first, second, third, and fourth priority)  
• Mean resolution time by category (first, second, third, and fourth priority)  
• Percentage of messages solved by service desk  
• Update frequency of knowledge database  
• Average training costs for new support employees  
• Percentage of tickets escalated to second-level support although solution is available |
| Improved efficiency achieved by efficiently using expert knowledge | • Handling issues and requests effectively  
• Enabling first level support  
• Identifying requested components using a structured approach to clearly show who is responsible for the issue or request | • Number of incidents being processed  
• Speed of message processing  
• Rate of resolution compared to previously used tools  
• Incidents solved by first level support  
• Average number of components required to resolve an issue  
• Customer satisfaction with ticket handling  
• Average time from request creation to completion, according to priority |
<table>
<thead>
<tr>
<th>Target</th>
<th>Challenges</th>
<th>KPIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved compliance achieved by properly documenting incident and problem resolution</td>
<td>• Monitoring and reducing downtime caused by incidents</td>
<td>• Level of business satisfaction</td>
</tr>
<tr>
<td></td>
<td>• Ensuring service level compliance and transparency</td>
<td>• Frequency of SLA reviews and completed action items</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stability due to reducing the negative impact of changes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Visibility of responsibilities for each issue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bill and charge-back based on actual effort</td>
</tr>
</tbody>
</table>
5 TRAINING

For IT service management implementation, SAP offers the following training courses:

Classroom Training SM250

The SAP classroom training SM250 covers all aspects related to IT Service Management. The following topics are covered:

- Outlining the SAP Solution Manager Architecture and User Interfaces
- Introducing the Application Incident Management Scenario
- Outlining usage rights for SAP Solution Manager IT Service Management
- Performing the system preparation and basic configuration in SAP Solution Manager
- Preparing the system for incident, problem, and request management
- Master Data
- Creating Business Partners for the IT Service Management Scenario
- Maintaining Installed Base (IBase) Components
- Defining and maintaining an organizational model
- CRM WebClient UI for IT Service Management
- Customizing the Web Client Framework
- Using categories to classify incidents and changes
- Granting authorizations to employees
- The application incident management process
- Introducing the incident management process
- Creating and processing incidents and service requests
- Integrating Incident Management with Change Request Management
- Application incident management customizing
- Introduction to transaction types in Incident Management, Problem Management, and Change Request Management
- Customizing the CRM incident transaction type
- Advanced customer-specific customizing of the Incident Management scenario
- Connecting SAP Solution Manager with a third-party help desk tool
- Connecting mobile devices
- Integrating Test Management with IT Service Management

After completing this training course, a certificate of participation will be distributed. For more information, see the SAP Training and Certification shop at https://training.sap.com.
Expert Guided Implementation Sessions

For Enterprise Support Customers, SAP offers Expert Guided Implementation Sessions (EGI). Expert Guided Implementation (EGI) sessions are a combination of remote training, live configuration, and on-demand expertise, which allow you to perform complex activities with the help of experienced SAP support engineers. The instructor will demonstrate what to do step by step. Afterwards, the class can perform the relevant steps in their own version of SAP Solution Manager. If there are any questions, contact an SAP expert via phone or e-mail.

Expert Guided Implementations enables the execution of activities without being a subject-matter expert. The methodology closes the gap between classroom training and consulting. Expert Guided Implementation sessions provide guidance for the execution phase of the project.

EGI sessions are appropriate for IT Service Management, for example, when the IT Service Management is configured and it is ready for productive use or when a service has been executed and a service report for optimization activity exists.

Please refer to the EGI Portfolio and the EGI Calendar and search for ‘ITSM’ to check out upcoming sessions: https://support.sap.com/solution-manager/training-services.html → Learning from Expert to Expert.