Business Process and Interface Monitoring
SAP Solution Manager 7.1
## Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example</strong></td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>Emphasized words or expressions.</td>
</tr>
<tr>
<td><strong>EXAMPLE</strong></td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td><strong>&lt;Example&gt;</strong></td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
</tr>
<tr>
<td><strong>EXAMPLE</strong></td>
<td>Keys on the keyboard, for example, <strong>F2</strong> or <strong>ENTER</strong>.</td>
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# Document History

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<th>Date</th>
<th>Change</th>
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1 SAP Standards for E2E Solution Operations

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 businesses. Therefore, it is important to optimize the day-to-day tasks that 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 IT processes end-to-end (E2E) 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 Active Global Support (AGS) while serving more than 36,000 customers, SAP has defined process standards and best practices to help customers set up and run E2E 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
- Remote supportability

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 technical monitoring, end-to-end root-cause analysis, technical 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 scheduling management.

Quality management processes and tasks need to be established throughout the lifecycle to guarantee continuous improvement of the end-to-end operations processes while simultaneously ensuring the flexibility needed to react to changing requirements.
This figure shows an organizational model for solution operations that aligns SAP best practice topics and E2E standards 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
- Remote supportability

The quality management methodologies are an essential part of SAP’s Advanced Customer Center of Expertise (CoE) 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 Operations Control Center (OCC) is the physical manifestation of the Run SAP Like a Factory philosophy. The OCC allows for automated, proactive operations, which simultaneously reduces operational costs while increasing the quality of IT services, leading to improved business satisfaction. The OCC also drives continuous improvement of business processes and IT support. To achieve these goals, it relies on a close interaction with both the Innovation Control Center (ICC) and the SAP Mission Control Center (MCC).
The OCC is a central IT support entity at the customer site, which monitors the productive SAP environment as well as important non-SAP applications. During operation, the OCC requires a workforce of 2 full-time equivalent (FTE) per shift to ensure that incidents are detected and resolved as quickly as possible. The OCC is equipped with large screens that display the status of business processes, IT landscape components, as well as exceptions and alerts. If problems occur, you use a video link to get live support from SAP and partners. The customer usually sets up the room with assistance from SAP Active Global Support (AGS). The customer is responsible for managing the OCC and the team of technical and functional IT operators who act on the alerts.

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.
The Business Process Monitoring at a Glance

While your core business processes are running, problems can occur that impact the smooth and reliable operations. The goal of the SAP Standard for Business Process Monitoring is to ensure that these problems are recognized and resolved in a timely manner in order to avoid disrupting business process execution. The standard also aims to help you identify and speed up the processes with high error rates.

This standard covers every aspect of business process execution so that you can identify not only technical errors, such as canceled background jobs or failed IDocs, but also business-critical situations that are not represented by a technical error, such as growing backlog or decreased throughput for a business process.

![Figure 2: Typical Error Situations in Business Process](image)

The first thing to ensure is that the implemented business processes are running stable from a technical perspective. For example, interfaces or background jobs should be processed without errors or, if errors occur, the problem should be resolved as fast as possible. The task of Business Process Monitoring is mainly conducted by IT, who are supported by the technical and cross-application background job monitoring for single jobs or complete BW process chains and interface monitoring, for example, IDocs, qRFC, or XI/PI.

You also need to check how the existing business processes can be improved without significantly changing the process design. Experience shows that customers often operate their business processes below 100% efficiently, often seen in the SAP system as a document backlog. Therefore, the full potential of processes as they were initially designed is hardly ever achieved. Removing this document backlog from the system and avoiding...
systematic errors (master data or configuration issues, end user mistakes) clearly increases efficiencies. This kind of improvement helps you run processes to their optimal potential. This task is partly performed by IT and partly on business side (depending on the identified root cause behind the respective document backlog) with a stronger emphasis on the business department. The analysis and improvement is supported by Business Process Analytics tools.

Once the systematic issues are eliminated, you can identify the real (business) exceptions. You can then focus on further analyzing your business processes in order to identify backlog situations to compare with different organizational units. By learning from these internal best practices and applying them to other organizational units, you can increase customer satisfaction and revenue streams and, therefore, become more effective. This kind of improvement is mainly driven by the business department. The later analysis is partly supported by Business Process Analytics. In addition, the application-specific key figures can be monitored using Business Process Monitoring in order to keep the document backlog low and prevent a drop in the business process output.

From this perspective, Business Process Monitoring and Business Process Improvement are complementary processes, covering all potential problems in the execution of business process.

The key user and the responsible business process operations team have to define a model and procedures for handling exceptions and error situations during daily operations, as well as for proactive monitoring of the business process execution. These procedures describe what exception detection activities have to be carried out and which proactive monitoring activities. They provide details regarding which corrective actions are required in the given context and who is responsible for certain activities in the business process operations team or the business department. For both teams, Business Process Monitoring, the interface to other SAP standards such as ITSM, Change Request Management, and Root Cause Analysis completes the procedures for handling detected problems.

The execution of these procedures can be supported by monitoring and alerting tools within the Business Process Monitoring concept.

The SAP Standard for Business Process Monitoring enables you to safeguard the smooth and reliable flow of your core business processes. As a result, this standard also ensures business continuity. In addition, establishing one central, proactive, and process-oriented strategy for business process and interface monitoring reduces the cost of solution operations by avoiding organizational redundancies.

In the context of the “Run-SAP Like-a-Factory” methodology, which helps you optimize the implementation and ongoing management of end-to-end solution operations, the Business Process Monitoring standard belongs to the Business Process Operations work package. This work package also includes Job Scheduling Management and Data Consistency Management, which are available as separate standards.

The “Run-SAP Like-a-Factory” methodology supports the implementation of support standards in the IT landscape by providing the roadmap, which is available in SAP Solution Manager. The roadmap contains information not just about what you need to implement, but also, how-to documents, implementation methodology, and best-practice documents.

2.1 Basic Architecture

With SAP Solution Manager 7.1 SP 12, you can integrate Business Process Monitoring into the Monitoring and Alerting Infrastructure (MAI). The MAI focuses on automating the monitoring and checking processes, as well as the response to and prevention of critical situations in a system landscape.

Business Process and Interface Monitoring can be set up in the original framework as well. You need to decide which framework is the best option for each of your solutions. You can use both the classic monitoring and MAI at
the same time. In some cases, for example, if a solution contains managed systems of release 6.40 or lower, you
cannot monitor business processes with the MAI.
Alerts for the business monitoring solutions produced by the MAI are only displayed in the new MAI Alert Inbox,
accessible from the Business Process Operations (New) work center.

![Image of Business Process Monitoring Alert Inbox]

Figure 3: Business Process Monitoring Alert Inbox

### 2.2 Prerequisites

To use Business Process Monitoring with the MAI, you need to prepare SAP Solution Manager. You must complete the following scenarios in SAP Solution Manager Configuration (transaction `SOLMAN_SETUP`):

- System Preparation
- Basic Configuration
- Managed Systems Configuration

It is most important to configure the connection of all systems that you want to monitor and manage SAP Solution Manager. Depending on the number of managed systems and size of data collection, we recommend checking the hardware sizing of the SAP Solution Manager host. For this purpose, SAP provides the Quicksizer. For more information, see SAP Service Marketplace at [http://service.sap.com/quicksizer](http://service.sap.com/quicksizer).
2.3 Business Process Monitoring Architecture with MAI

For objects configured for Business Process Monitoring integrated with the MAI, you trigger the data collectors in the SAP Solution Manager Extractor Framework (for PULL metrics every 5 minutes). The data collection is executed and the measured values for the metrics are returned to SAP Solution Manager via the data provider connector. Usually, the data provider also determines the rating for the metrics. Therefore, in addition to the measured value, the rating is returned to SAP Solution Manager. The metric values are forwarded to the SAP Solution Manager Business Warehouse (BW), where they form the basis for the Alert Reporting function.

The MAI Event Calculation Engine rates the metrics. Most of the metrics for Business Process Monitoring already have a rating. In this case, the Event Calculation Engine simply creates the events based on the returned rating. An alert is sent to an alert consumer based on an event. By default, the alert is sent as an email.

Depending on the event, an alert is sent to an alert consumer. By default, the alert is raised in the Alert Inbox and an email is sent to the responsible party.
2.4 Classic Business Process Monitoring Architecture

The Business Process Monitoring Engine is the central infrastructure component on SAP Solution Manager. The client-specific engine calls the data collectors on the managed systems and determines if an email or incident needs to be sent for the alerts.

The central CCMS on SAP Solution Manager triggers the engine at 5 minute intervals via the local RFC destination. The engine also stores the alerts for business processes and provides information for the business process monitoring graphic in SAP Solution Manager.

Figure 5: Computing Center Management System (CCMS) based alerting
3 Lifecycle of Business Process Monitoring

Business Process Monitoring and Improvement can complement each other, covering all potential problems during the execution of your business processes.

The business process operations team is responsible for developing and driving the business process monitoring concept which is essential for a successful implementation. This team contains designated members of business process operations and application management.

The following figure shows the four phases that are important to ensure a successful Business Process Monitoring implementation. This chapter describes the important tasks and information for the four different phases.

3.1 Plan

Establishing a comprehensive monitoring concept requires a defined project plan and a monitoring scenario scope, which ensures a common understanding for the implementation of the project. Therefore, an implementation project needs to be planned carefully.
3.1.1 Tools

To perform the various activities within a Business Process Monitoring concept, you use the following tools and functions:

- Monitoring tools to gather information about the monitored objects and evaluate the alert statuses
  How many monitoring tools you use depends on your monitoring objects.

- Business process documentation tools to document the business process flow and the technical details behind the business process steps and interfaces

- Documenting tools for monitoring activities, error handling procedures, communication paths, and escalation procedures

- Notification tools to communicate alerts to the first level application support or forward the alert to the second-level application support

- Root-cause analysis tools to determine the cause of the alert and solve the alert situation
  These tools vary and include SAP transactions.

- Logging tools for alert history, alert confirmation, and alert comments to provide a central store for documented alerts and their processing status

- Incident and problem management tools to forward alerts to the next support level or other teams within the support organization
  This tool should support the escalation procedures defined within the incident and problem management process.

- Reporting tools for identifying long-term trends within process execution and alerts

Tracking multiple monitoring objects requires you to implement different monitoring functionalities and these should be integrated in a central automated monitoring tool. The Business Process Monitoring work center in SAP Solution Manager is a powerful tool for this purpose. It provides you with a single point of access for each of the systems of your landscape. A central monitoring tool ensures that you begin monitoring processes in the source system and continue to monitor them until they reach the target system. This ensures that processes take intersystem dependencies into account. The Business Process Monitoring functionality of SAP Solution Manager enables systematic analysis of your end-to-end business processes and helps you to ensure the transparency and reliability of your core business processes.

SAP Solution Manager can serve as a central point of access for all monitoring activities. By using automated functionalities wherever possible, the manual effort for monitoring is greatly reduced. SAP provides various predefined monitors for business process and interface monitoring out of the box. These monitors include the following:

- Sales and services monitors that monitor business-related KPIs

- Cross-application monitors that can be used to monitor technical KPIs, such as background jobs and dialog performance

SAP also provides monitoring for interface technologies, for example, ALE/IDoc, tRFC, qRFC, and XI/PI Alert Monitoring.

Business process documentation should be integrated into this central monitoring tool so that the determined alerts can be immediately correlated to the involved business process steps and interfaces. SAP Solution Manager allows you to document your business processes and attach information like transactions and reports to the business process step.

SAP Solution Manager provides a link between monitoring objects and business process steps and interfaces in the form of a graphic representation of the business process and the corresponding alerts. This graphical representation of the whole business process works as a point of access for more detailed information, for
example, the actual number of errors for each process step or interface. You can access the monitored object directly in the related managed system and perform a deeper analysis.

In SAP Solution Manager, the documentation for responsibilities, monitoring activities, and error-handling procedures are also integrated into the Business Process and Interface Monitoring functionality, so that the person recognizing the alert has immediate access to all information relevant to resolving the error. Automatic alerting mechanisms allow you to proactively inform members of business process operations in case a critical situation has occurred.

SAP Solution Manager provides both automatic reporting and ad-hoc trend analysis functionality for the values measured within the monitoring objects, allowing you to easily determine trends like growing backlogs or increasing response times for your business processes.

### 3.1.2 Project Management

SAP Solution Manager provides documented business scenarios to help speed up the implementation. This means that you already have best practices for all common SAP applications in the Business Process Repository (BPR) out of the box. These project management features are part of the Implementation/Upgrade work center.

You can select either Business Process & Interface Monitoring or Business Process Improvement as an entry point. SAP provides general documentation for each step, including typical scenarios, which you can reuse and adapt to your needs. You can adjust the estimated effort for each step in the project.

![Figure 7: Implementation Content for Business Processes, Including Standard Content](image)

In addition, SAP provides a roadmap for implementing Business Process Operations in SAP Solution Manager. This roadmap contains a detailed description of how to implement a Business Process Monitoring concept.
3.1.3 Define Requirements

During this phase you need to decide the number of business processes and the initial level of detail to for your Business Process Monitoring concept.

All systems and technical components of the system landscape need to be connected to SAP Solution Manager as the basis for monitoring business and technical key figures. It is important to check whether SAP already provides standard KPIs for certain technical or application-related areas. For more information, see SAP Service Marketplace at http://service.sap.com/bpm → Media Library → Overview and Demos → Business Process Operations Key Figures - Overview

SAP Solution Manager provides tools to monitor the application layer and complex scenarios. With Business Process Monitoring, you can monitor various application-related and technical areas. The tool supports job monitoring, interface monitoring, data consistency monitoring, and application log monitoring for both SAP and non-SAP solutions.

In order to monitor non-ABAP or non-SAP systems, you can use Application Monitoring on remote databases with the following configurations:

- Generic monitoring object for remote databases
  The generic monitoring object allows you to run generic database queries to count the number of entries or distinct values in any remote database table.

- Specific monitoring object for other third-party or legacy systems
  For specific monitoring objects, you need to create a Business Process Monitoring customer exit by using the framework of predefined SELECT statements to access remote databases.

It is important to decide which business processes should be involved during the implementation phase. You also need to consider which business or technical areas you need to monitor and to what level of detail.
All involved parties need to discuss useful thresholds and possible follow-up activities. The business should deliver business-related KPIs, such as availability or necessary response times, but you must optimize the thresholds after the initial setup.

The level of information in monitoring means that you need to plan if and what automatic information level should be in place.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>You scan the Alert Inbox regularly. The Alert Inbox allows you to process the alerts and confirm them after the root cause of the incident has been resolved.</td>
</tr>
<tr>
<td>Enhanced notification</td>
<td>You can define a notification method. If an alert occurs, you can use email or SMS to automatically inform responsible persons or teams for follow-up. You can also enable dynamic recipient determination using predefined decision tables as part of the Business Rule Framework (BRF+).</td>
</tr>
<tr>
<td>Enhanced incident management</td>
<td>You setup a full integration with incident and problem management by enabling the system to automatically create incident messages in your ticket system. SAP recommends integration with IT Service Management in SAP Solution Manager, but Business Process Monitoring does allow setup and integration with other third-party ITSM systems.</td>
</tr>
</tbody>
</table>

You can combine different levels for use with different KPIs and systems.

**Recommendation**

SAP recommends integrating alerting into your incident management process. To account for critical situations, you should combine this with enhanced notification to ensure that not just the incident management team sees the incident. This is the most reliable way of ensuring that you handle an incident properly and that you track and document every occurrence and error in one central system. You can also set an ABAP program to automatically execute when a specific error occurs.

In addition to the reactive use of monitoring and alerting, you can optimize your IT and business processes. Suitable monitoring procedures for your historical and prognosis KPI data are essential for your IT optimization process. Therefore, you need to plan how you will report on collected data. All measured monitoring data will be stored in the SAP Solution Manager Business Warehouse. You need to plan which KPIs are useful as well as how and how often they should be reported.

Reporting is only useful if you have established a follow-up process for the improvement. You need to plan who will use the reporting and what should happen if critical values or critical prognoses occur.

### 3.1.4 Plan Authorization Concept

An authorization concept should be part of your monitoring blueprint as well. You need a clear definition of who has access to which parts of the monitoring and reporting framework. There should be only a limited group of named users that have full access to all monitoring objects and the monitoring Customizing. The service desk and
support staff should have read-only access to the Alert Inbox and should be able to use available root-cause analysis tools.

SAP Solution Manager delivers predefined roles and authorizations, which you can adapt to your existing authorization concept if necessary.

### 3.2 Build

You configure Business Process Monitoring by following the guided procedure provided in the *Business Process Monitoring* scenario of SAP Solution Manager Configuration (transaction: SOLMAN_SETUP).

![Figure 9: SAP Solution Manager Configuration: Business Process Monitoring](image)

During the setup, the system automatically checks the landscape preparation. If you use BW reporting, you need additional standard template users in the BW system or client. If your BW system is in the same client as SAP Solution Manager, the relevant roles are assigned to standard users in the SAP Solution Manager system.

You can manage and configure all connected systems to prepare them for proper data collection.

You can execute the configuration process multiple times and adapt it to changes in your landscape or processes. If you need to add a new system or change the templates, you have to run the configuration again.

After finalizing the configuration, you can begin monitoring. The list of monitoring objects depends on the add-on ST-A/PI version on the managed system and the product and version of the managed system. For example, you will see different objects in a CRM 5.0 system than in an ERP 6.0 system.

The configuration of Business Process Monitoring is based on the Business Process Hierarchy (BPH) of the related solution. You need to select the relevant business process steps for the business process.
In contrast to the configuration of Business Process Monitoring, you set up the key figures for Business Process Analytics on the logical component level, for example, Z_ERP_RWE.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Scenario</th>
<th>Logical Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI Business Process Stabilization Pilot</td>
<td>Create Sales Order</td>
<td>Z_ERP_RWE</td>
</tr>
</tbody>
</table>

**Monitoring Objects (1):**
- Total number of Docs created: EDI Reporting, Z_ERP_RWE, RME, 800

**Details for "Total number of Docs created"**
3.3 Run

You need to set up the auto-reaction methods for sending notification about exceptions. For example, you can specify that the system sends an email containing a direct link to the Alert Inbox in SAP Solution Manager.

In the Alert Inbox, you can view previous alerts and cross-check threshold values and selection parameters. Within the Alert Inbox, you access the respective managed system to run a detailed root-cause analysis. This may mean executing a transaction or report on the managed system or displaying the list of documents or items that led to the alert. From the document or item list, you can open the single business document, job log, IDoc, or qRFC queue and determine the reasons for the alert. You can then resolve the error by identifying the root cause which led to the exception. After the executing the root-cause analysis and the resolving the error, you confirm the alert in SAP Solution Manager.

If available error handling procedures are not sufficient to find a resolution to the alert situation, an incident is created and forwarded to Incident Management.

Figure 12: Process for Alert Handling

If Business Process Monitoring is executed as part of the OCC, you need to also establish an Event Management process, as shown in the following figure:
3.3.1 Monitoring Activity and Alert Detection

The business process operations team executes the defined monitoring activity and detects the alert within this activity by comparing the observed situation to the defined thresholds or status values.

An alert is raised if the observed value for the monitoring object is outside the limits defined by the thresholds or if the status of the monitoring object has reached a defined value. This way, you can determine whether the business process is running properly and matches all business requirements, or whether a critical situation exists that requires further activities.

If you use an automated monitoring tool, the alert is detected automatically. In case of an alert, members of the business process operations team are notified by email or SMS. If no automated monitoring tool is used, you need to detect the alert situation manually.

3.3.2 Initial Analysis and Error Handling

The business process operations team performs the initial alert analysis. They begin by determining the business relevance of the alert. You must identify which business processes, business process steps, or interfaces are the source of the alert and which business processes, business process steps, or interfaces are affected by it.

For each business-critical alert, the initial error handling procedures documented for the business process operations team are performed within the initial analysis. These error handling procedures are stored in a central
location and are accessible to all involved parties. These include procedures like unlocking a user or restarting a job in the business processes.

3.3.3 Business Criticality and Communication

If the exception handling procedures do not resolve the exception, the key user verifies the criticality of the business process.

Business process operations works in close collaboration with the key user to determine if problems within the business process execution have caused the alert situation or the exception.

The key user defines the business criticality of the alert or exception. Key users also define further applicable error or exception handling procedures that can be performed by the key user or the business process operations team. If these procedures are not successful, the key user creates an incident through the key user or the business process operations team.

3.3.4 Create Incident

If the available error handling procedures are not sufficient to resolve the alert, the business process operations team or the key user creates an incident is created to forward the alert or exception to the application management team. This incident contains the description of the problem, including the expected behavior compared to the observed behavior, steps that led to the problem, and the error handling procedures that already have been applied.

3.3.5 Create Action Plan

After you have found the root cause, the system determines countermeasures for solving the alert and compiles them in an action plan. Depending on the outcome of the root-cause analysis, executing the involved action items may result in changes to the system or changes to the Business Process and Interface Monitoring configuration.

If the problem was caused by an issue related to the execution of a business process or the underlying technical infrastructure, you need to fix this issue by changing the system or adjusting the technical infrastructure. It is also possible that the exception occurred because the Business Process and Interface Monitoring configuration did not include an alert that could have discovered the problem before it resulted in an exception. In this case, you need to adjust the Business Process and Interface Monitoring configuration.

3.3.6 Solve Incident

Once you have performed the activities required to resolve the alert or exception, the application management team communicates the problem resolution to the business process operations team or the business department and closes the incident, indicating that the problem has been solved from application management side. Closing the incident must be signed off by the business process operations team or the business department.
3.3.7 Alert Resolution Approval

The business process operations team approves the alert resolution, while the key user approves the exception resolution. Until the approval, the problem is not considered fully resolved.

In parallel to this alert handling process, the Run phase can also cover activities for business process improvement. These activities are usually triggered by a business process improvement project, which itself can be triggered from within a monitoring concept.

3.3.8 Improving Business Processes

The following figure shows how you can improve your business processes:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Get Global Transparency</td>
</tr>
<tr>
<td>2</td>
<td>Identify Org Units to be analyzed</td>
</tr>
<tr>
<td>3</td>
<td>Split between old &amp; operational data</td>
</tr>
<tr>
<td>4</td>
<td>Perform Detail Analysis</td>
</tr>
<tr>
<td>5</td>
<td>Identify Root Causes (RC)</td>
</tr>
<tr>
<td>6</td>
<td>Create Frequency Diagram of RC</td>
</tr>
<tr>
<td>7</td>
<td>Define Action Plan</td>
</tr>
<tr>
<td>8</td>
<td>Visualize Impact on Benefit/Value Categories</td>
</tr>
<tr>
<td>9</td>
<td>Control Achievements via Trend Analysis</td>
</tr>
</tbody>
</table>

Figure 14: Business Process Improvement
### 3.4 Optimize

You must continually optimize your business process and interface monitoring, as well as business process improvement to ensure that they fit into the customer support strategy.

This means that you need to integrate both processes into customer incident and change management processes. Changes to business processes trigger changes in the monitoring concept, such as adjusting thresholds or selection criteria.

Additionally, you check whether changes to business processes, such as changes to document types and other customizing changes, are effective by performing a business process improvement project.

You have to continually check success of the monitoring concept and the potential need for improvement. For example, for example, you can check the following KPIs,

- Number of incidents that are not detected by monitoring
- Number of alerts that are raised incorrectly
- Time from alert creation to alert resolution
For business process improvement, the improvement activities largely focus on improving recognizing the need for an improvement project. Therefore, you have to check the following KPIs regularly:

- Number of incidents that could have been avoided by an improvement project
- Trend in measured value for critical key figures

The monitoring information for your business processes can be displayed in the Business Process Operations work center of the SAP Solution Manager.

Business Process Monitoring and Improvement are integrated in processes. Those processes need to be optimized. You need to consider the quality criteria for the monitoring processes and how KPIs can be measured.

Ideally, monitoring processes detect upcoming events or potential incidents fast enough for you to react and avoid incidents for your end users.

The following activities should be considered:

- Improvements to the monitoring concept, such as adjustments to monitoring objects
- Number of incidents that could have been avoided by performing Business Process Improvement activities
- Changes to business processes to avoid critical situations as early as possible
  - These are based on the results derived from different Business Process and Interface Monitoring sources, such as the Business Process Operations Dashboards.
- Verification that changes in the business processes are effectively used in productive operation, for example, changes in document types and other customizing changes
- Ratio of manual, reactive work to proactive work

You need to continuously optimize your productive business processes because daily operations change. Adapting thresholds, adding new monitoring objects, and changing business processes affect which Business Process Monitoring configuration you need.
4 Driving Continuous Improvement

4.1 Quality Assurance Tasks

Business Process Monitoring describes the monitoring and supervision of mission-critical business processes, including how to define a model and procedures to manage exceptions and error situations during daily business operations. Business Process Improvement helps you to identify and speed up processes with higher error rates or processes that may be less cost-effective.

From a quality management perspective the key tasks are as follows:

- Introduction of a proactive business process and interface monitoring
- Regular adjustment of monitoring thresholds until business users are satisfied
- Ensure backlog and throughput monitoring
- Ensure follow-up support process KPIs, such as response and resolution time
- Ensure quality of documentation
- Identify process exceptions and gaps
- Ensure regular communication between business and IT

4.2 Quality Targets and KPIs

To assure a high maturity of business process monitoring and drive the value recognition of IT, the most important quality targets are as follows:

- Improved transparency by constant monitoring of business processes
- Increased effectiveness by proactive and faster detection of business process deviation
- Increased efficiency and stability

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<tr>
<th>Quality Target</th>
<th>Challenges</th>
<th>KPIs</th>
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| Improved transparency by constant monitoring of business processes | - Identifying critical business processes  
- Setting up key alert thresholds in order to ensure transparency of the key critical business process steps  
- Ensuring cooperation between business and technical teams  
- Regularly reviewing thresholds to ensure continuous appropriate setup of Business Process Monitoring  
- Maintaining documentation. | - Percentage of your critical business processes in that are integrated into Business Process Monitoring  
- Trend in time it takes to escalate if severe business impact is identified  
- Trend in time of error resolution  
- Percentage of business process documentation completed  
- Percentage of ownership |
### Quality Target
- Including business process owner and escalation paths, to achieve the defined target values in terms of reduction in escalation time and error solving due to central documentation, guided error handling procedures, escalation paths, and responsibility assignments

### Challenges
- Increased effectiveness by proactive and faster detection of business process deviation
  - Continuously improving IT operations and the reliability of service levels

### KPIs
- Assigned to business processes and updated
- Percentage of improvements resulting from business department performance comparison performed

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<tr>
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<th>Challenges</th>
<th>KPIs</th>
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| Increased effectiveness by proactive and faster detection of business process deviation | • Continuously improving IT operations and the reliability of service levels | • Trend in incidents raised by end users  
• Percentage of critical business processes monitored versus overall critical business processes  
• Trend in user satisfaction after service-level reporting has been implemented  
• Reduction in effort spent for service-level reporting measured in percentage |
| Increased efficiency and stability                  | • Reducing operational costs by automating monitoring, ensuring faster and reliable deviation handling, and reducing interface and background job failures  
• Reducing costs and manual effort required to monitor IT systems, which support key business processes. This includes the cross-application, interface, and non-SAP systems to ensure an end-to-end solution  
• Setting up and integrating real-time alerts effectively to improve reaction time and reduce manual monitoring effort | • Trend in number of resources used for monitoring  
• Trend in critical business process downtime  
• Trend in savings in terms of failures, time savings, and human resources  
• Trend in optimized performance for critical business processes |
5 Training

For Business Process Monitoring and Improvement, SAP offers the following training courses:

**SM300 – Business Process & Interface Monitoring**

This training course explains how to operate your business processes successfully and reliably by establishing a business process monitoring concept for your solution landscape. This includes, among others, defining roles and responsibilities in your solution support organization and monitoring your core business processes and interfaces, as well as defining procedures for program scheduling management and strategies for data management and master data distribution. The course explains how you can use SAP Solution Manager to implement a business process management concept and focuses on setting up Business Process Monitoring in SAP Solution Manager. You are introduced to the functions offered by Business Process Monitoring. The course will help you to set up Business Process Monitoring for a sample business process yourself.

**Course Content**
- Introduction to Business Process Monitoring
- Implementing Business Process Monitoring
- Monitoring Configuration
- Using Business Process Monitoring
- Application Monitoring
- Cross-Application Monitoring
- Interface Monitoring
- Data Consistency Monitoring
- Reporting
- Trouble Shooting for Business Process Monitoring
- Change Management

**E2E300 - Business Process Integration and Automation Management**

This training course explains how business processes running in a solution landscape should be supported as part of Run SAP like a Factory and consequently helps you understand the content and purpose of Business Process Operations. The course explains which roles should be involved in the implementation and execution of a Business Process Operations concept.

**Course Content**
- Introduction to Business Process Operations
- Job Scheduling Management, including the usage of the job request process and the job documentation in SAP Solution Manager
- Business Process and Interface Monitoring, including the usage of Business Process Monitoring, BW Reporting for business process monitoring alerts, and Business Process Analytics in SAP Solution Manager
- Data Consistency Management, including the usage of the Data Consistency Monitoring, Data Consistency Toolbox, and Cross-Database Comparison in SAP Solution Manager and the tools for transactional correctness
- Business Process Improvement, including the usage of the BPO Dashboards in SAP Solution Manager
5.1 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, you can perform the relevant steps in your own version of SAP Solution Manager. If you have any questions, you can then contact an SAP expert by phone or e-mail.

For more information about EGIs and the schedule see the EGI calendar on SAP Service Marketplace at http://www.service.sap.com/~sapidb/011000358700001780312008E.