White Paper
Operate and Optimize your SAP Solution with SAP Solution Manager

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Making the decision to implement an ERP system such as SAP represents a huge commitment, requiring a significant investment of resources, money and time. However, the benefits of having a fully integrated IT solution that helps to ensure standardized and efficient business process execution can far outweigh these costs and provide your organization with a real advantage in the marketplace.

Ensuring that this solution continues to deliver value is an important aspect of an IT strategy, yet once implemented, many organizations become reactive in their approach to support of the system, addressing problems and failures, but failing to look for opportunities to improve.

One of the key challenges is knowing where to begin. It's hard to start a process improvement initiative if you don't understand where improvement potential exists. This paper aims to show how SAP Solution Manager can help with this challenge for those organizations running an SAP-centric solution. The starting point is to ensure that the existing business processes are stable and working correctly through use of the Business Process Monitoring functionality, before using the powerful analytical tools to help answer that all important question: "Which processes have room for improvement?".

Phase 1 – Business Process Stabilization

If your SAP solution isn't stable, your processes can't be executed as intended, therefore efficiency will be compromised. This can have a significant impact on your business. For example, consider the scenario where a SAP Workflow item requesting approval of a Purchase Order fails. Initially the support organization may not be concerned; in isolation, it's a single Purchase Order that won't be approved due to lack of notification of the responsible business owner. However, we need to consider the full impact of this failure, as shown in Figure 1- Implications of a Workflow Failure:

Figure 1: Implications of a Workflow Failure

Business Process Monitoring in SAP Solution Manager

It's clear to see that a single failure in an integrated system can have far reaching consequences. If this single failure is symptomatic of an underlying problem, indicating that many records may suffer the same fate, then it becomes imperative that such faults are fixed quickly. This is where functionality within SAP Solution Manager known as Business Process Monitoring becomes incredibly valuable; allowing you to spot these failures and rectify the situation before the end users themselves know there is a problem and before any significant impact on the downstream business process has time to take hold.

As shown in our previous paper, 'SAP Solution Manager – Much more than a Systems Administration tool' (Richardson, G & Start, N 2013), SAP Solution Manager can be used as a central repository of business process information; detailing the implemented business scenarios, processes and process steps; all of which can be associated with documents to enrich the value of the information held. The Business Process & Interface Monitoring (BPIM) functionality builds upon this documentation, allowing us to proactively monitor the execution of the Business Processes within our SAP solution.

Application-Specific Monitoring Objects

The critical Business Processes are selected and the component steps of each are assessed for monitoring potential. For example a Sales Order process is core for most businesses, for this type of process we have a vast array of differing monitoring possibilities to ensure that the process is being executed in line with our expectations, as shown in Figure 2- Sales Document Monitoring Object, Key Figures:
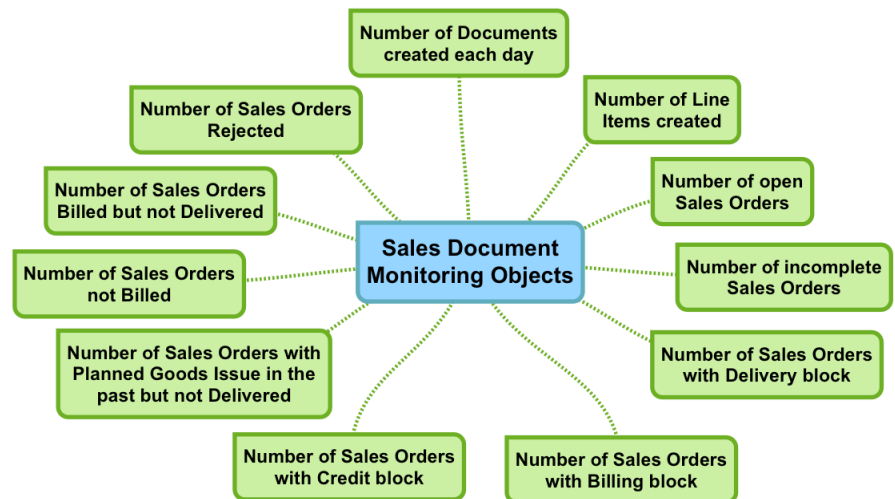

Figure 2: Sales Document Monitoring Object, Key Figures

There are over 350 pre-configured monitoring objects (also known as Application Specific Key Figures) provided in the tool, covering SAP ERP, SAP CRM, SAP SRM, SAP APO as well as some industry specific solutions. Whatever your core business process you should be able to find appropriate objects that would support your monitoring requirement.

To obtain a granular view of the performance of our business process execution across our organization it's possible to monitor based on additional criteria, such as Sales Group, Sales Office, Sales Division and so on.

Cross-Application Monitoring Objects

In addition to these Application Specific monitors there are also Cross Application and Interface monitoring objects; these allow the technical aspects of the process execution to be monitored, for example: transactional response times, batch job failures, number of short dumps, application log messages. If it was deemed that the SAP transaction 'VA01' was used as the primary means to create Sales Orders then we would also choose to monitor this transaction for Transactional Response time to ensure that we could proactively investigate a degradation in performance.

Monitoring Concept Implementation

The first stage in implementing the monitoring functionality is to work with both the Business Process Owner(s) and Technical Support team to devise a monitoring concept for the critical processes of your organization. For each identified process this concept will comprise of the monitoring objects that are relevant and critical to the process execution, their defined monitoring frequency (hourly weekly, monthly, etc.) and a specification of the Key Performance Indicators (KPI) / Threshold values that must be reached or not exceeded. These threshold values can be defined against a three-stage alert system (Red, Amber, Green), allowing the criticality of an event, and the urgency of the follow-up action, to be weighted accordingly. This monitoring concept, once implemented, will allow you to gain transparency of process execution and determine whether the critical process is working optimally or has issues that need to be resolved.

The monitoring concept is then implemented in the SAP Solution Manager Business Process and Interface Monitoring tool. Owners are assigned to each of the alerts that can be raised (triggered automatically when a KPI is not met), and documented exception handling and error resolution guidelines are recorded. Following activation, the monitoring concept will be represented graphically, with information regarding the health of the process execution, allowing for easy identification of potential issues, see Figure 3- Business Process Monitoring Graphic (SAP AG, 2013):
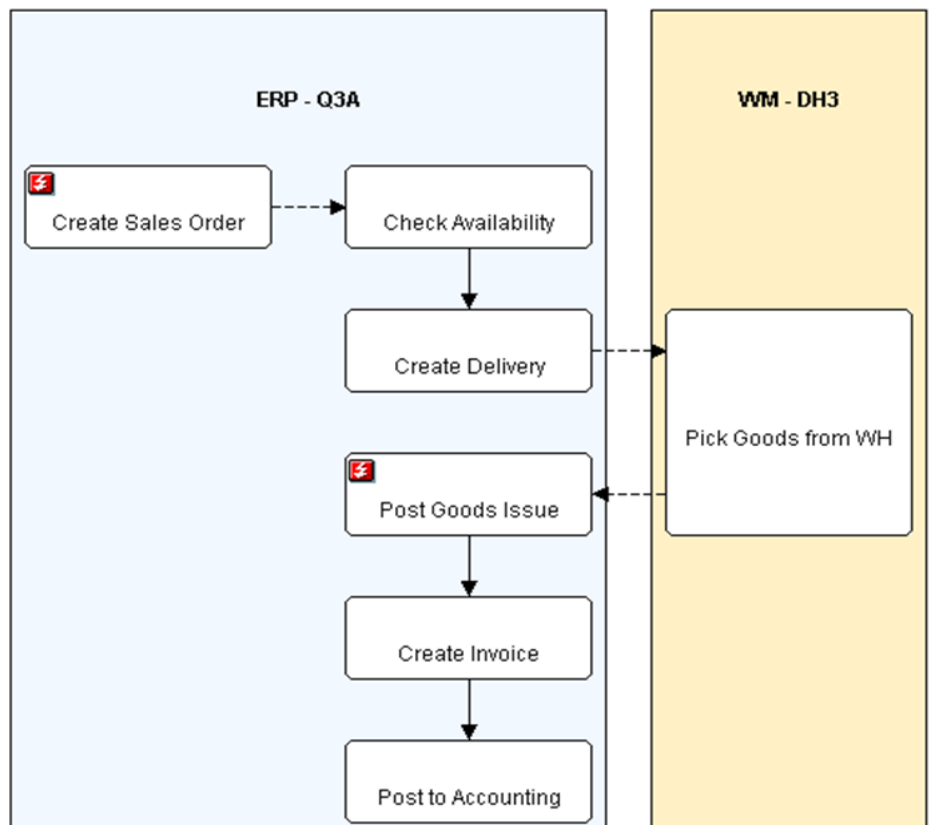

Figure 3: Business Process Monitoring Graphic (SAP AG, 2013)

Each of the process areas that have monitoring objects defined are shown with a simple icon to indicate if there are currently alerts outstanding (represented in Figure 3 by the red lightning strike against the 'Create Sales Order' and 'Post goods Issue' steps) and actions to be taken.

Of course, over time your business will change and so should the monitoring concept. It is important that it is reviewed regularly by the Business Process Owner(s) and technical teams to ensure that the monitoring is still relevant and refinements take place wherever necessary.

Benefits of the Business Process Monitoring Approach

Using the above functionality, with a well-defined monitoring concept, will bring many benefits:

- **Manual monitoring efforts will be reduced**
  How many hours each day do your business process team members spend running reports, looking for records that need to be actioned or are incorrect / erroneous? By automating these monitoring activities we ensure that the validations are carried out both accurately and in a timely fashion; with the added advantage of freeing up your team members to spend time on other value-add activities.

- **Increased stability of the system**
  Being able to monitor more aspects of the process execution without additional manual effort, previously unknown problems can be identified. Resolutions can be put in place to help increase the user perception and stability of the SAP system.

- **Reduce the number of user raised incidents**
  Automated monitoring can take place as often and as frequent as you require, thus allowing for early detection of potential problems. Alerts can then be raised and actioned before the issue becomes critical for the business, potentially before the end users themselves have even realized, negating the need to raise an incident.

In conjunction with Root Cause Analysis techniques and an ITIL aligned approach to incident management, the BPIM functionality will help to achieve the necessary stabilization of the business processes prior to embarking upon further process improvement initiatives.

Phase 2 – Business Process Improvement

Following on from the Business Process Stabilization phase, we should now be satisfied that the vast majority of simple errors are being captured, interfaces are working correctly and the system is technically performing well. The next phase is to analyze the performance of the critical processes and identify areas for improvement. However, the challenge is in knowing where to begin.

In line with Six Sigma approach DMAIC (Define, Measure, Analyze, Improve, Control; see Figure 4- Lean Six Sigma: DMAIC and SAP Solution Manager), SAP Solution Manager, and specifically both the Business Process & Interface Monitoring and Analytical tools, help you to understand where improvement potential exists, and enable verification that the subsequent improvement initiatives have had the desired effect.
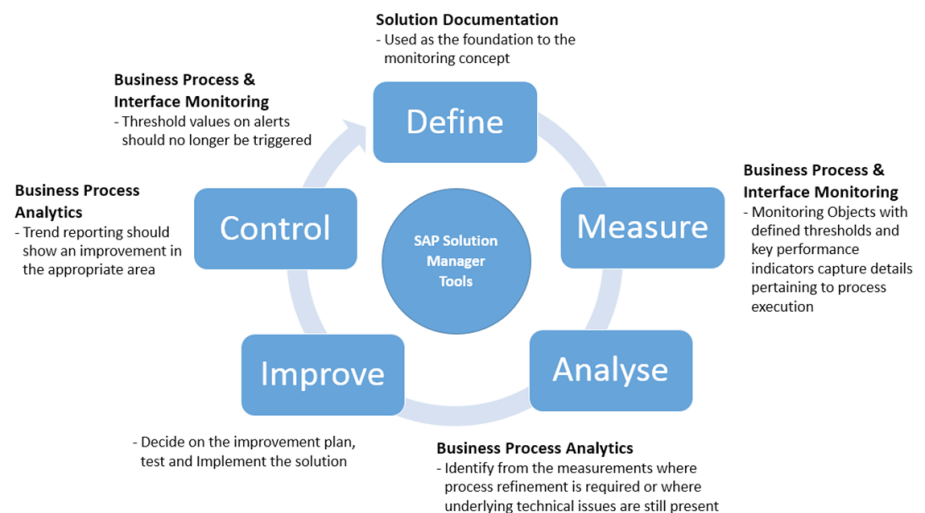

Figure 4: Lean Six Sigma: DMAIC and SAP Solution Manager

SAP Solution Manager simplifies the above activity, providing transparency of process execution through several key analytical reports. For all of the monitored processes, the results from the key figure reports are being stored ready for further analysis. In summary, the reports shown below are used to analyze the data and identify areas for subsequent process refinement:

- **Benchmarking:** For the selected key figure SAP Solution Manager will provide details of the number of records created over a specified time frame. This can detail the number of records in terms of 'Throughput', the number of records processed over a specified time frame; and 'Backlog', the number of records that are left in an incomplete state. For example, in our Sales Order scenario we might see a large number of open Deliveries for a specific Sales Organization (see Figure 5- Benchmarking). Comparisons can be made

between different organizational units to identify if a particular backlog is specific to one organizational area or is common across the business.
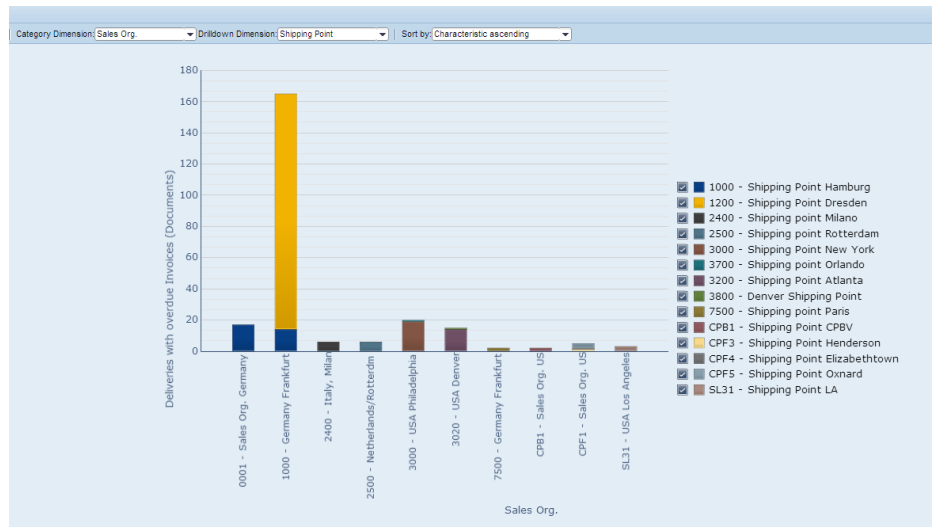

Figure 5: Benchmarking: Deliveries with overdue invoices by Sales Org (SAP AG 2014)

- **Age Analysis:** A large backlog of records identified during the benchmark activity does not necessarily constitute an issue with process execution. This could be representative of a business that simply processes large numbers of records. The next step is to perform an Age Analysis of the benchmarked results. SAP Solution Manager will provide an age distribution of the records, allowing you to identify where a backlog really does exist and where further investigation is required. For example, if your SAP system contains a large number of open Deliveries that were created 2, 5 or perhaps even 10 years ago are they really still valid? Is this symptomatic of the business process not being carried out as intended or is it simply bad data? This information is the starting point of the Root Cause Analysis process (see Figure 6- Age Analysis).
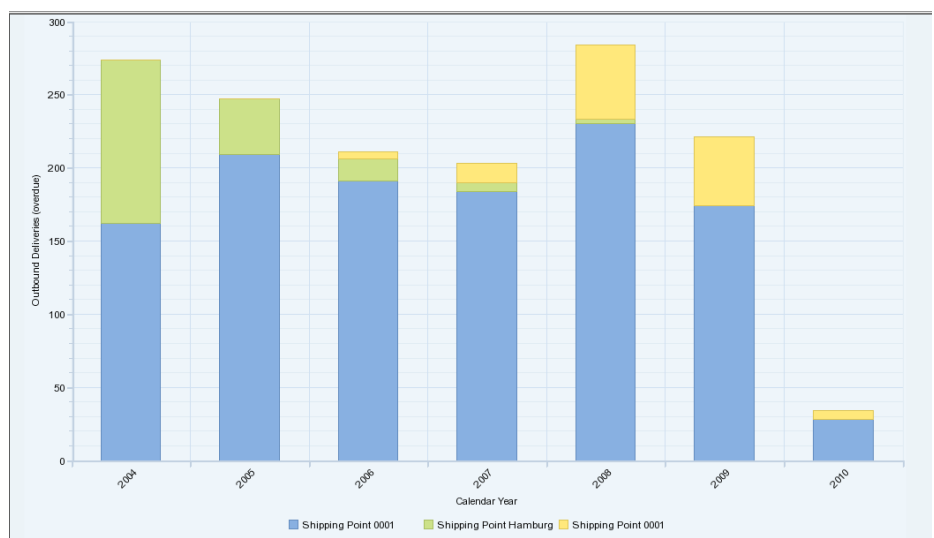

Figure 6: Age Analysis; open Deliveries by year (SAP AG 2014)

It is through gaining an understanding of the usage of the system, along with the recorded throughput and backlog of business records, that we can identify where our efforts for process refinement and improvement should be further expended. By eventually addressing the root cause of the problematic areas we can improve the efficiency of our operation.

Once the identified process improvements are in place we can evaluate their effectiveness through utilizing one further report type: Trend Reporting. This allows you to understand, over a specified period, the impact of the change through displaying the results of the monitoring object against a time dimension. Increased throughput or decreases in backlog (as appropriate) will be evident from the resulting information. Again, the functionality is providing valuable insights into the execution of the business process, without manual effort.

Conclusion

Using the Business Process and Interface Monitoring functionality of SAP Solution Manager will help protect your organization's initial investment in SAP; helping you to identify and address errors encountered during the normal operation of the system in a fast, efficient and pro-active manner. Doing so before your end users are alerted to problems will help ensure acceptance of the system in addition to preventing undetected errors from having an impact on further aspects of the end-to-end process execution.

Detect errors in
2 minutes
instead of 30

10x
Faster problem
escalation

20%
Reduction in
errors
reported by
users

40%
Faster resolution
of Issues

Figure 7- Real Customer Benefits of Business Process & Interface Monitoring (SAP AG 2014)

Once satisfied that the system is working correctly we can then use the analytical functionality to identify business process improvement initiatives. These initiatives could simply involve the removal of redundant or unwanted data, (re)training our end users in the correct operation of the system or minor adjustments to the system configuration to make it better fit the real world execution of the business process. Alternatively, this could signify the start of a complete business process reengineering project. Identifying where to start is often the most challenging aspect; SAP Solution Manager's analytical tools now empower all SAP support teams with this ability.

In closing, utilizing the tools and approaches discussed in this paper will help ensure that your organization's SAP solution continues to deliver a significant return on investment for many years to come.

Additional Information

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