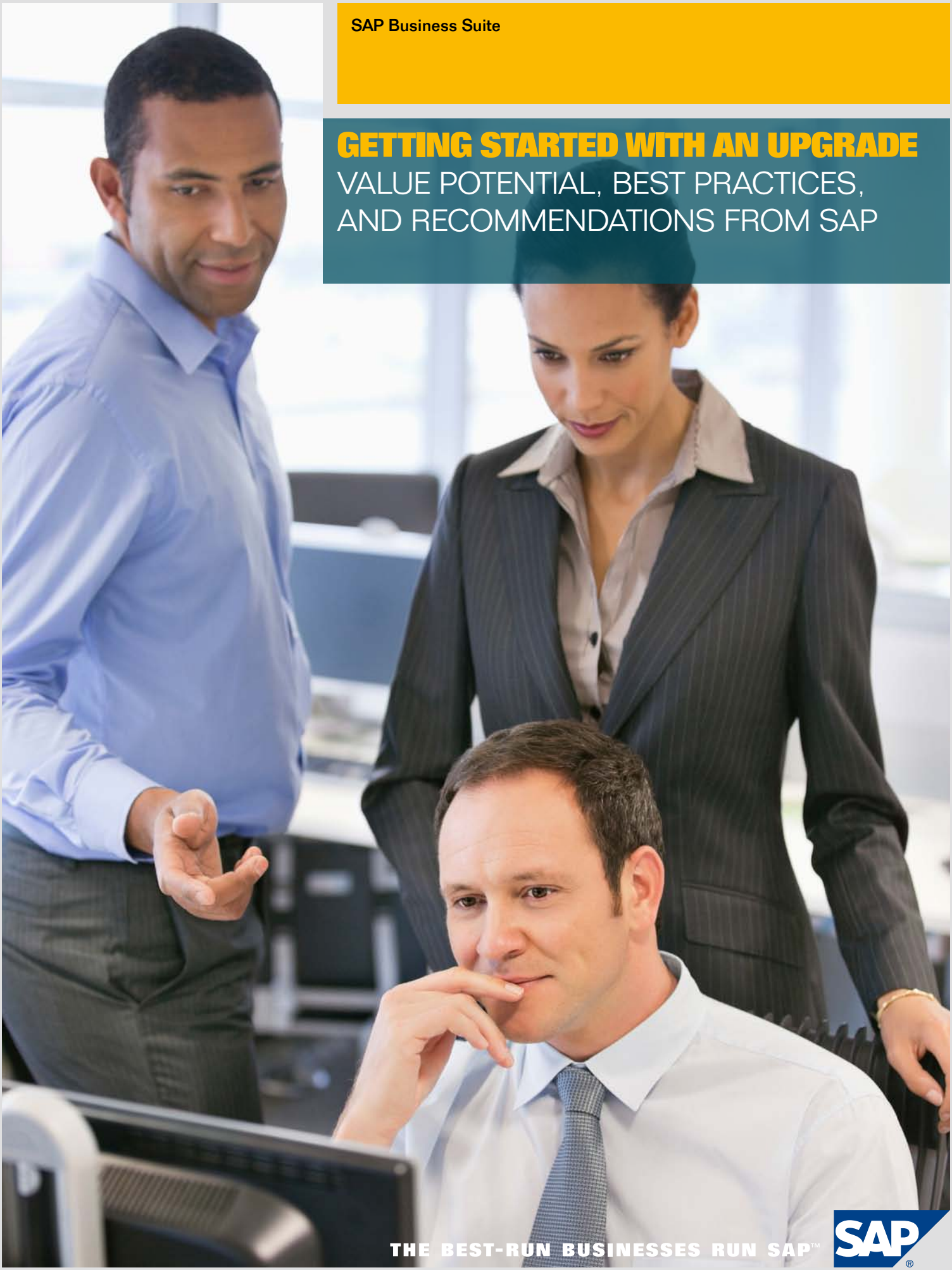
SAP Business Suite

GETTING STARTED WITH AN UPGRADE

VALUE POTENTIAL, BEST PRACTICES, AND RECOMMENDATIONS FROM SAP



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WHY UPGRADE YOUR SAP® SOFTWARE?

AN OPPORTUNITY TO MAXIMIZE THE VALUE OF YOUR INVESTMENT

As the business world changes, SAP develops new releases of its software to accommodate your organization's evolving business needs and help you remain competitive. SAP® Business Suite software helps enterprises run, grow, and transform their business more effectively. The fully integrated applications support a wide range of industry-specific business processes on a single foundation, so companies can wield business innovation to drive growth – while still managing costs.

SAP provides enhancements and innovations to SAP Business Suite software on a regular basis. The term "SAP Business Suite 7 Innovations 2010" refers to the total set of enhancements and innovations that SAP delivered in 2010 for SAP Business Suite. It included new functionality and enhancement packages that help companies navigate the recovering and new economy – with maximum flexibility and minimum disruption. With the convenient deployment options and quick time to value these innovations offer, companies can achieve their strategic goals. Businesses gain support in managing a lean enterprise, transforming business models for growth, harnessing the power of social communities, and making faster, smarter business decisions.

SAP Business Suite 7 Innovations 2010 comprised the most current releases of applications and enhancement packages, including:

- SAP ERP 6.0 application and SAP enhancement package 5 for SAP ERP
- SAP Customer Relationship Management (SAP CRM) 7.0 application and SAP enhancement package 1 for SAP CRM
- SAP Supplier Relationship Management (SAP SRM) 7.0 application and SAP enhancement package 1 for SAP SRM
- SAP Supply Chain Management (SAP SCM) 7.0 and SAP enhancement package 1 for SAP SCM
- SAP Product Lifecycle Management (SAP PLM) 7.01 application, shipped with SAP enhancement package 5 for SAP ERP 6.0
- The most recent versions of the industry applications and supplementary applications
- SAP NetWeaver® 7.0 technology platform with the enhancement packages supporting the above applications

While SAP has previously delivered enhancement packages for the SAP ERP application, SAP Business Suite 7 Innovations 2010 marks the first time that SAP has introduced the delivery of enhancement packages across all SAP Business Suite applications. This unique delivery model allows you to choose the features you want to include in your current installation readily, without requiring a huge project. You can thus create and evolve a unique solution landscape that helps you distinguish yourself within your industry.

SAP Business Suite 7 synchronizes all applications into one united release strategy and schedule that is documented in SAP's Release Strategy for Large Enterprises (see www.service.sap.com/releasestrategy).[1]

SAP uses enhancement packages to deliver innovation for all core applications. More than 9,000 SAP ERP customers have enhancement packages in productive operation already. In addition, SAP will continue to deliver new and improved functionalities through new releases of the industry applications and supplementary applications. With SAP enhancement packages, you can deploy SAP Business Suite software in a gradual manner to address specific business challenges along your own timelines and without costly upgrades.

SAP ERP 6.0 with SAP enhancement package 5 for SAP ERP is part of the innovations and enhancements to SAP Business Suite that SAP delivered in 2010. An upgrade to SAP ERP 6.0 is often the natural first step to creating the foundation with which to leverage the benefits of SAP Business Suite, including in particular the improved support for end-to-end business processes, the enhancement package concept, and the enablement of a service-oriented architecture (SOA) with enterprise services.

Getting Started with an Upgrade

Upgrading applications is an important issue for many SAP customers, but an upgrade to any of the latest releases of the applications in SAP Business Suite should not be perceived as a necessary evil. Rather, it is a valuable opportunity to maximize the value of your SAP investment. To take advantage of this opportunity, all that's required is appropriate

1. This document contains the most current information on SAP's release strategy for the product portfolio for large enterprises. Corresponding documents for the product release strategy for small businesses and midsize companies can also be found at www.service.sap.com/releasestrategy. In addition, a release strategy brochure is provided that focuses on the SAP® BusinessObjects™ portfolio of solutions. All three brochures are designed to give SAP customers, salespeople, consultants, and partners a comprehensive view of the SAP portfolio, its release and maintenance strategy, and the corresponding release plans.

planning and management. Upgrades must be well integrated within an organization's overall IT strategy and planning, which is why release and upgrade management for SAP software has become a topic of strategic importance, having high visibility among senior managers.

Prompted by the importance of the upgrade topic and the widely divergent understanding of it within the SAP community, SAP compiled this "getting started" guide and updates it on a regular basis. Directed to IT decision makers and project leaders, the guide is designed to help you assess the value potential of upgrading to the latest SAP Business Suite applications, including their respective enhancement packages. It summarizes best practices and SAP recommendations as well as a range of SAP tools and services that can assist you with the upgrade project throughout its lifecycle – from discovery to evaluation to implementation (see Figure 1).

> "Upgrading enterprise applications to a new release ranked as the third-highest priority among software initiatives in Forrester's most recent survey of enterprise software decision makers, following rationalizing and consolidating enterprise applications and updating or modernizing legacy applications. Application upgrades were rated as 'very important' by 16% of the respondents and 'important' by 38% in supporting current business goals."
>
> **Paul D. Hamerman, Forrester Research Inc.,** *Application Upgrades: How to Make Upgrade Decisions When Business Value Proves Elusive,* June 2010.

Given the inherent volatility of information technology, an upgrade can be seen as a normal business activity – an investment necessary for maintaining a stable IT environment. An upgrade can also bring significant benefits to your organization by extending the functionality and improving the performance of your SAP software. Far from being a purely technical issue that can be left entirely in the hands of IT departments, an SAP software upgrade is vital to the daily business operations of your organization and can bring about significant improvements in business efficiency.

This guide answers the following questions:

- How can my organization evaluate and justify an upgrade? (discovery and evaluation phase)
- How can my organization plan an upgrade? (planning phase)
- How can my organization execute an upgrade? (execution phase)

At the end of this document, the "Further Information" section lists useful resources that detail specific aspects of an upgrade, such as upgrade guides and Web sites dedicated to the topic.

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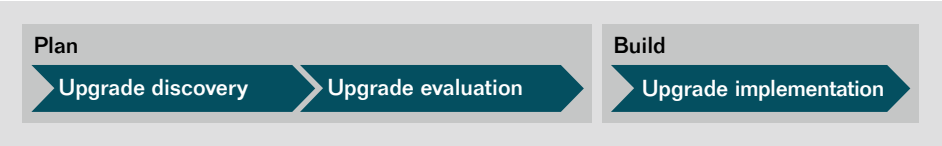


Figure 1: Three-Phase Upgrade Lifecycle

Reasons for Upgrading

Each organization has different reasons for considering an upgrade. For a well-oriented justification process, you and other decision makers in your organization should create a detailed summary of what benefits you expect or would like to derive from an upgrade. Some of the most common reasons for considering an upgrade are:

- Business user demand for new functionality to improve operational excellence, enable innovation, and support new business models
- Desire to increase process efficiency and thus reduce the total cost of ownership (TCO), particularly in terms of the total cost of operations – for example, by returning SAP software modifications and custom developments to SAP standard functions
- Requirements from IT, such as planned infrastructure updates and consolidation projects that can be combined to advantage with an upgrade
- Vendor's release schedule or support policies

Figure 2 gives the results of an SAP survey in which customers were asked what improvements they anticipated from an upgrade to SAP ERP 6.0. The figure shows the level of interest (given as a percentage of those surveyed) in specific benefits.

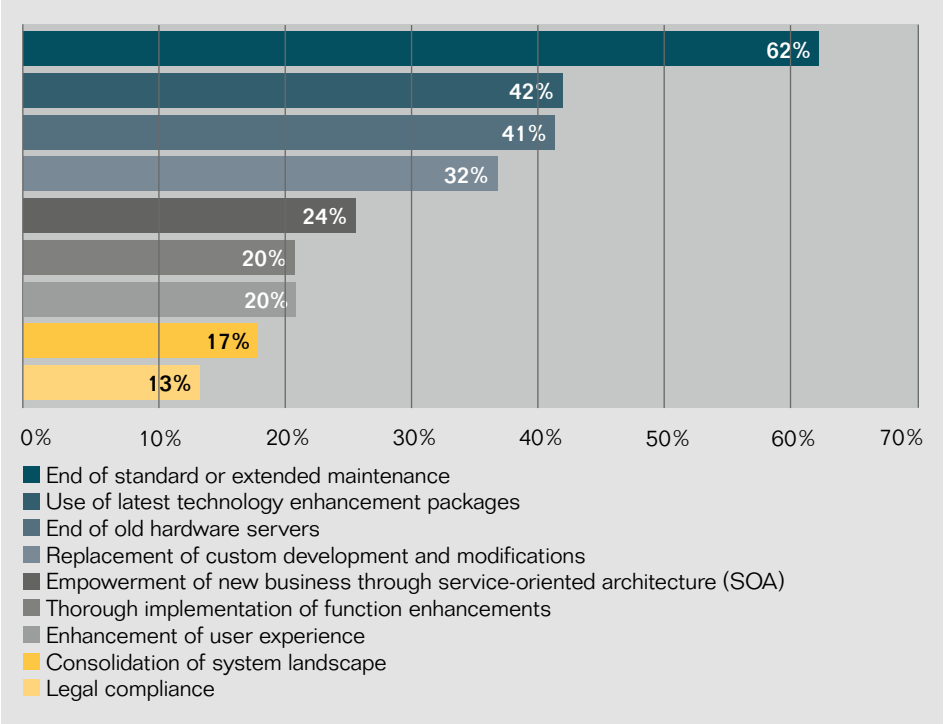


Figure 2: Business Benefits Customers Expect from an SAP® Software Upgrade

Risk of Postponing an Upgrade

From another perspective, postponing upgrades may expose your company to risk, such as failure to meet legal and compliance requirements; technological obsolescence; or incompatibility of your current hardware, operating systems, and database versions. These risks can be only partially covered by paying extended maintenance fees to software vendors. Minimizing them is an important though often underappreciated factor in justifying a software upgrade. Ignoring the risks is unacceptable in the long term. So when considering an upgrade, the question you need to ask is not simply "Should I do it or should I not?" but rather "Should I do it now or later?"

In the following sections, the benefits of upgrading are analyzed in detail from four perspectives:

- Operational excellence
- Business strategy
- Sustainability
- Total cost of ownership

Operational Excellence

Successful businesses achieve operational excellence by creating a dynamic, operationally driven architecture that goes beyond delivering functional efficiency to link business processes together. As a result, complete transparency across the entire operational chain is enabled. The benefits are multidimensional and include increased customer service levels, decreased costs, predictable compliance, and superior overall operational performance.

All of the latest releases of SAP Business Suite applications deliver a large number of functional enhancements and benefit from an increased level of integration. Furthermore, the new enhancement package technology makes it easier to implement new features across SAP Business Suite applications. This is important because organizations use different software landscapes. As a result, they must be able to identify the key value drivers and tangible benefits of the SAP Business Suite software and map them to their business needs on an individual basis.

To help you do this, SAP provides you with tools, services, and complete documentation, including release notes and details of enhancement package content. With this support, you can determine which new functionalities are included with the core release, which are with subsequent enhancement packages, and above all which of them suit your business needs. For an overview of the latest enhancements for the SAP Business Suite applications, see "Enhancements and Value Drivers" below.

> "The new user interface in SAP CRM is very well received by our end users at PBS, and by taking part in the SAP Ramp-Up program, we were able to implement it in an efficient and secure way. In order to meet the business requirements, it was not an option to stay on the old platform."
>
> **Gert Blak,** Senior Vice President, SAP Business Enablement, Nets Holding A/S, Denmark

Business Strategy

Pairing operational efficiency with stable, core functionality and a platform for integration can strengthen your business strategy, a strong incentive for updating your existing software. Besides introducing numerous value drivers, upgrading your SAP software supports your business strategy by:

- Providing business insight.
- Enabling flexibility and efficiency, which have become increasingly important success factors in business. Several influences – for example, globalization and market pressure for what is called "mass customization" – force organizations to pursue flexibility and efficiency simultaneously in order to innovate and adapt to this ever-changing environment.
- Supporting continuous innovation with minimized disruption through SAP enhancement packages. This helps organizations shorten product innovation cycles and respond more quickly to dynamic market conditions to fulfill their strategic goals.
- Creating a solid basis for the development of innovative business processes. New developments in software deployment are making it easier and faster for businesses to implement new functionality that addresses important business requirements.
- Accelerating organizational integration between different areas through an end-to-end process approach. This eases the pressure on IT departments, who have to maintain a "balancing act" between stability and innovation. It helps them match the business model and strategy coming from the business environment with the level of automation supported by the underlying system landscape.

Sustainability

SAP Business Suite applications can integrate business operations with financial and HR processes. The applications must cover regular changes in legal requirements, such as tax adjustments, as well as newer compliance standards developed to meet the needs of a global economy. Newer standards include those issued by the U.S. Food and Drug Administration and those published in the Sarbanes-Oxley Act and Basel II Accords.

Covering New Legal and Compliance Requirements

SAP provides updates for legal changes as part of the mainstream and the extended maintenance agreement for SAP Business Suite 7 applications. (SAP also provides these updates for previous

releases of SAP software when replaced by later releases.) Using previous software releases based on underlying outdated software technology may impede the implementation of effective solutions for meeting current compliance standards.

Achieving Business and IT System Stability

Running a productive business on an SAP software landscape is a major IT commitment. Any disturbance or instability in the landscape can affect the performance of the entire company. Furthermore, SAP software must remain compliant with your company's underlying technology, including your operating system, database version, and hardware. Operating systems and database versions usually have shorter maintenance periods than SAP software releases and require more regular upgrades than SAP applications. Thus, older releases of SAP software may not be compatible with newer operating systems and database versions or may not be able to use the enhanced functionality and performance of the newer versions. By upgrading, you can stay up-to-date with the underlying technology for greater business continuity and system stability.

Providing Continuous System Support and Maintenance

The 7–2 maintenance strategy followed by SAP applies to core application releases of SAP Business Suite 7. In particular, for SAP ERP 6.0, SAP NetWeaver 7.0, SAP CRM 7.0, SAP SCM 7.0, SAP

SRM 7.0, and SAP PLM 7.0, SAP offers mainstream maintenance until December 2015 and extended maintenance for two additional years until December 2017. For other SAP Business Suite applications (for example, industry applications and supplementary applications), the maintenance dates are aligned with the maintenance dates for the core application release or SAP NetWeaver release they are based on. Details of the 7–2 maintenance strategy for SAP Business Suite 7 and the maintenance strategy for SAP R/3® 4.6C software, SAP R/3 Enterprise software, and the mySAP™ ERP 2004 application can be found in *SAP's Release Strategy for Large Enterprises* and on the SAP Service Marketplace extranet (www.service.sap.com/maintenance).

You should consider the maintenance durations offered by SAP for the releases you are currently running. At the same time, you should weigh the consequences of running older releases against the potential cost savings – as well as the operational benefits of the latest SAP software – in your upgrade business-case calculation.

Considering Licensing Aspects

The introduction of SAP Business Suite 7 Innovations 2010 does not influence the license model and pricing. Customers will continue to license SAP application users and packages. Existing customers will get access to relevant SAP Business Suite 7 innovations according to the maintenance agreement. Activating certain business functions that enhance existing or introduce new functionality, however, requires an additional license. For further details, contact your local account executive.

Total Cost of Ownership

Market studies show that up to 80% of IT budgets are spent as cost of operations. One of the major contributors to the high cost of operations is a software landscape that is unnecessarily complex. An upgrade to the latest releases of the SAP Business Suite applications, when combined with other IT initiatives, can reduce TCO, mainly in terms of operations costs.

Reducing the Level of Modification and Customization

Because the architecture and technology of SAP software is very flexible, some SAP customers invest heavily in modifications of SAP code and in custom developments (customization). While it is possible to continuously adjust your software system to meet new business requirements, the lifecycle management and maintenance of highly modified SAP software systems becomes increasingly expensive and difficult. SAP internal estimates indicate that up to 60% of custom developments are not even being used. According to a customer survey conducted by SAP in 2008, 32% of customers take the opportunity of an upgrade to clean up their software systems by eliminating unused modifications and custom developments. The cost savings achieved by reducing these modifications can make a considerable contribution to the upgrade business case.

An upgrade project offers the chance to implement changes to development governance processes to reduce future modifications and custom developments and thus help decrease TCO in both the short and long term.

Consolidating the Software Landscape

Consolidation of your software landscape can provide a good opportunity for upgrading your SAP software, since both types of projects require a detailed analysis of the landscape and can be implemented simultaneously to minimize disruption. Depending on your IT strategy, you can run centralized or decentralized SAP software systems. While some multinational companies run SAP software in a single-client mode, others allow their decentralized IT and business units to run individual software instances. With the increasing pressure to reduce IT expenditure, there is a trend in the SAP community to consolidate SAP software landscapes and replace legacy systems to streamline hardware and server infrastructure and reduce overhead costs. Consolidation projects are usually planned over several years, with the goal of achieving a consolidated landscape focused on a unified target – in most cases the latest available release of SAP software.

A more consolidated SAP software landscape increases business efficiency and flexibility and reduces the complexity and expense of future implementation projects. Consolidating your software landscape also makes future upgrades considerably easier.

Lowering the Cost of Operations

Consolidating SAP software landscapes reduces the number of SAP software systems and servers as well as the number of modifications and custom developments. This, in turn, reduces the effort needed for ongoing system administration tasks, such as providing backups or applying new support packages. And using enhancement packages to deploy enhanced functionality reduces the need for future upgrades and can also reduce the cost of operations.

Beyond those cost savings, there are additional opportunities to increase the efficiency of IT operations by using the synchronized tools and infrastructure available in SAP Business Suite 7. For example, by using the software's robust and automated administration features and functions or using integrated functions such as root cause analysis, you can reduce manual system maintenance tasks. And the SAP Solution Manager application management solution provides monitoring, service delivery, and system administrator–related work centers that further improve efficiency.

For more information on how to realize productivity gains and savings by reducing TCO in general, refer to *The Move from Operation to Innovation – Clear TCO Measures for Best-Run IT Organizations*. You can download this SAP guide from SAP Service Marketplace at www.service.sap.com/tco.

DISCOVERY PHASE

COMBINE BOTTOM-UP AND TOP-DOWN APPROACHES FOR BEST RESULTS

Discover the Value Potential

SAP Business Suite software is a comprehensive, fully integrated family of applications that helps enterprises run, grow, and transform their businesses to meet the challenges of the recovering economy. The software supports you as you perform your company's essential business processes with modular applications that are designed to work with each other from a single foundation. Taking advantage of the strategy of SAP enhancement packages, you can deploy solutions quickly and with minimal disruption to business operations, while improving data consistency, interoperability, and the ability to implement your own business practices along with industry-standard best practices.

Innovations 2010 includes products and technology for SAP Business Suite that give you the freedom to grow your enterprise to meet changing business needs promptly and affordably. By selecting only the innovations you need, you can adapt your software environment by composing and tailoring processes on top of your core applications. You can deploy individual solutions and scale their implementations according to your budget and business strategies. These innovations also open the way for you to adopt key strategies that can help you meet today's most pressing business challenges, such as:

- Managing a lean enterprise
- Transforming business models to support growth
- Harnessing the power of social communities
- Making faster, smarter decisions

To further lower the total cost of ownership, you may want to combine an upgrade to the latest releases of SAP Business Suite applications with other IT initiatives. Other IT initiatives might be, for example, replacing legacy systems, consolidating the system landscape, or reducing the level of software modification and customization.

> "The software helps us to achieve cost savings through easier release management and to further broaden the functional support in areas like treasury, talent management, and supply chain control."
>
> **Jennifer Allerton,** CIO, Roche

When justifying an upgrade to the latest releases of SAP Business Suite 7 applications, you need to weigh the potential benefits and risks in light of your organization's specific circumstances. Each SAP customer faces a unique situation in terms of the coverage and maturity of its SAP software. Customers use SAP solutions in very different ways. And each has different needs, goals, and priorities as it works to achieve improvements in operational excellence or equip itself for future business innovation. A good upgrade justification does not usually depend upon a single decisive factor or "killer feature" but rather on a combination of interrelated factors that can benefit a wide range of business areas and improve processes across the business.

When determining the value of an upgrade, SAP recommends combining two approaches – bottom-up and top-down:

- **Bottom-up approach** – This technology-based approach is initiated by the IT department, which investigates new technology or functionality and creates a case for how it can be used for business improvements. New technology or functionality is the key driver. The focus is on developing use cases for opportunities identified in the available technology. This approach leverages IT's insights into technology and its unique end-to-end view of processes.
- **Top-down approach** – This approach is driven by business requirements and is employed when an attempt to resolve a key business problem leads to requirements for changing the level of IT-based process automation. The business value of an upgrade can be derived from addressing the many real-world issues – for example, demographic changes, business network risks, or environmental and sustainability challenges – that have an impact on your business by causing you to change your organization, business rules, or processes. This approach is typically triggered by business challenges and can entail organizational, process, and IT changes.

Six-Step Approach

Justifying an upgrade is an intricate process. Consequently, it is worthwhile to use a clear procedure and methodology to assess the value potential of the latest releases of SAP Business Suite applications, including their respective enhancement packages.

The six-step approach described below is considered a best practice among SAP customers for assessing and justifying an upgrade. It uses bottom-up and top-down methodologies to quantify in concrete terms the potential gains of upgrading to SAP ERP 6.0 or any other SAP Business Suite 7 application, including the respective SAP enhancement packages. It also identifies areas in the business where process change or improvement is required.

Step 1: Gathering Preliminary Information
This step focuses on investigating what new functionality is available and what has technically changed since you last upgraded to, or implemented, your current software. To perform this, the IT department gathers product information from a variety of sources such as SAP Web sites, release notes, and white papers. In addition, it should participate in SAP events to get a basic understanding of the new SAP products and enhancement packages.

Step 2: Involving Stakeholders
This step involves determining who within the business can benefit from an upgrade. The IT department and representatives of the various business units cooperate to assess the value proposition of an upgrade and build a consensus. You should ensure business executive sponsorship and user involvement to secure commitment and support for the upgrade project. Since an upgrade justification is unique to each customer situation, SAP has developed tools and services to help in this process. For example, SAP has developed a solution browser tool for SAP ERP that enables IT organizations to include selected business units in these discussions. For other SAP Business Suite applications, you should compare older releases with the latest release using delta information that can be found in the release notes (www.service.sap.com/releasenotes).

Step 3: Determining the Business Value of New Functions
This is a crucial step during which the business case is made for implementing new functionality. It requires thorough understanding both of the benefits of the features and of the business requirements that can be satisfied by implementing the features. To accomplish this, business units gather in-depth information about the specific features of SAP Business Suite applications that could be useful to them. In addition, you should analyze the environment in which you do business and determine whether unavoidable business reasons for an upgrade exist. Business units must determine the availability of the required functionality to realize their requirements. Value comes from the potential for innovation and business transformation.

Step 4: Organizing Delta Workshops
IT departments organize workshops with SAP software experts from SAP or a partner organization to identify the differences, or delta, between software releases. These delta workshops allow business process experts to assess the value potential of new SAP software functions in more detail and help them understand the effect these functions could have on business operations.

Step 5: "Test-Driving" New Functions
To become familiar with new functions in an upgraded system, the IT department sets up a demo or "sandbox" system for trying out new functions. This sandbox system has many uses throughout the upgrade project, but its initial purpose is to provide the first opportunity for IT and business users to try out new functionality in the context of their own organization. You can set up the environment to mirror the processes and requirements of the production system, possibly using a copy of production data. This is an ideal way to determine the value of an upgrade and implementing new functions and features. It gives you hands-on experience with new functionality beforehand. You can also use the sandbox system to review current business processes and see how they will be affected by the upgrade.

Solution Browser Tool for SAP® ERP

The solution browser tool for the SAP® ERP application allows you to identify new features and functions and their business benefits in a given release of SAP ERP and enhancement packages for SAP ERP. It gives business process experts the opportunity to map current business requirements with the functions available in the latest software. You can access the tool at www.sapsolutionbrowser.com.

Step 6: Finalizing a Justification
The business units and the IT department discuss the merits, costs, and risks of an upgrade and produce a justification for the upgrade. Here you should combine the bottom-up approach – where IT identifies functional improvements in the software – with the top-down approach – where the business units identify new business processes that require changes in the software. As part of the upgrade justification process, you should develop an initial cost estimate. This is important input to the business case and is the initial step in determining the upgrade project budget. The quick upgrade analysis service delivered by SAP Consulting helps you determine the high-level costs for, and benefits of, an upgrade.

Essentials of an Upgrade Justification

For an efficient and valid justification of an upgrade, you should:

- Assess the core business processes supported by the existing SAP software landscape
- Make sure complementary and competing projects that might affect the core business processes and connected SAP software systems are transparent
- Identify the key value drivers for the company's business model and key improvement opportunities in current business operations
- Become familiar with the functionality of the latest releases of the SAP Business Suite applications, including the functionality available in the enhancement packages
- Identify and map business requirements to the functions of the latest SAP Business Suite applications, thus determining what tangible benefits can be gained from an upgrade and helping establish a business case

Quick Upgrade Analysis Services

Designed to get you started promptly with an upgrade assessment, the quick upgrade analysis services for the SAP® ERP, SAP Customer Relationship Management, and SAP Supplier Relationship Management applications provide a high-level estimate of savings as well as an estimate of project ROI. Besides an assessment of the complexity of the upgrade, which provides specific information on the level of modifications in your solution, you receive an effort estimate for each phase of the upgrade project and a sample project plan.

Supporting Customers' Business Strategy

Company leaders want faster deployments, outcomes, and time to value. They cannot afford to disrupt operations to upgrade IT systems or to absorb the costs of integrating disparate applications into their IT frameworks. Using enhancement packages for the SAP Business Suite applications, you have the freedom to select the innovations you need to expand your enterprise. Innovations 2010 offers flexible deployment options that give you quick time to value and support strategic business initiatives – with minimal risk and disruption.

SAP Business Suite provides a flexible software environment for composing and tailoring processes on top of your core applications. You can deploy individual solutions and scale their implementations according to your budget and business strategies. The ability to integrate non-SAP solutions increases the power and flexibility of this robust technology environment. Our evolutionary approach protects your existing IT investments, which can result in considerable savings.

SAP Business Suite is available in modular building blocks that combine software, support for best practices, and services to help your organization benefit from SAP business expertise. Each of the core applications within SAP Business Suite is based on the SAP NetWeaver technology platform. As the foundation for SOA, SAP NetWeaver helps organizations like yours transform their current IT landscapes into strategic environments that can drive business change. The open platform helps ensure that you can affordably enhance your software as your business grows.

SAP Business Suite can help reduce hefty integration costs by supporting business processes that are tightly integrated and optimized from the start. It reduces capital outlay by eliminating the need to purchase multiple software solutions from different vendors. Such interoperability – combined with other cost savings, improved efficiency, and enhanced revenues – helps you achieve a rapid return on your investment and reduce total cost of ownership.

SAP Enhancement Packages

After you upgrade to the latest releases of the SAP Business Suite applications, you can enhance the functionality of your applications without performing further upgrades thanks to SAP enhancement packages. These packages simplify the way you manage and deploy new software functions for SAP Business Suite applications. They enable you to take advantage of the latest software innovations while minimizing disruption to ongoing operations. And – compared to traditional upgrades – the total average duration for an enhancement package installation project is reduced from 18 weeks to 8 weeks.[2]

Currently five enhancement packages have been delivered for SAP ERP 6.0, and the first enhancement packages have been delivered for SAP CRM 7.0, SAP SCM 7.0, SAP SRM 7.0, and SAP PLM 7.0 to build on the stable underlying core of these applications. SAP enhancement packages are cumulative. This means when implementing an enhancement package you get all the innovation delivered with the previous enhancement packages. For example, if you implement enhancement package 5 for SAP ERP 6.0, you get, and can activate, all innovation that was delivered with the first four enhancement packages for SAP ERP 6.0 as well.

In the future, SAP intends to continue to deliver enhancement packages for the core applications, making it unnecessary for companies to engage in large, potentially disruptive and expensive upgrade projects. As a result, organizations can contain the impact of software updates and bring new functionality online more quickly through shortened testing cycles.

Enhancement Package Experience Database

SAP customers planning to implement an enhancement package often request benchmarking data or project statistics gathered from completed projects by other customers. SAP stores this data in a database that includes information about:

- Project duration
- Business downtime
- Reasons to start the project
- Satisfaction with the project

To learn about the experiences of other customers, see www.service.sap.com/ehp-db.

2. Based on 218 upgrade projects (from SAP R/3 4.6C and SAP R/3 Enterprise to SAP ERP 6.0) and 108 enhancement package installation projects.

Selective Installation and Activation
Using SAP enhancement packages, you can implement selected software innovations from SAP and then activate selected functions and enhancements on demand to meet your business requirements.

The key innovations of enhancement packages are:

- **Selective installation of software components** – Install only those software components that are related to the functionality you want to use. After installation, as long as you do not activate a business function, no user interface or process change takes place.
- **Selective activation of business functions** – Activate only the business functions that you require. New functionality must be explicitly switched on to become active in the software, with predictable changes restricted to the activated areas.

Implementing SAP Enhancement Packages

The book *Implementing SAP Enhancement Packages*, published by SAP Press, offers project guidelines for administrators on the use of SAP enhancement packages. It includes topics on areas of use, planning, installation, project specifications, and best practices.

This unique delivery and deployment method for enterprise software, enabled by the flexibility of SOA, lets you access new functions while holding on to your core functions. As a result, you can contain the impact of software updates and quickly bring new functions online through shortened testing cycles without impeding core business processes.

Combined Installation
You can embed SAP enhancement packages into the upgrade. Combining the technical upgrade with enhancement package installation allows for a single upgrade downtime. This eliminates the need to install the enhancement package separately after the upgrade, although this is also possible. (Enhancement packages can be installed any time after installing or upgrading an application.) Including the implementation of an enhancement package in an upgrade does not extend the normal technical downtime of the upgrade. In fact, by embedding enhancement packages, you are in an advantageous position for activating the relevant innovations at any later point in time. If you install all parts of an enhancement package, you will be able to choose from all business functions delivered. If you install only some of the technical usages from an enhancement package, the number of business functions is reduced accordingly.

SAP Enhancement Packages and Support Packages
The delivery of SAP enhancement packages is synchronized with the delivery of support packages. Support packages deliver all legal changes and corrections and can be installed independently of enhancement packages. This means that you can maintain core applications by applying support packages and can optionally add functionality through enhancement packages.

To minimize effort, especially regarding potentially needed modification adjustments and testing, you can apply enhancement packages within one installation queue together with the required support packages. Using this strategy, enhancement packages are installed as a normal maintenance activity in one downtime, without causing disruption. The installation technology, implemented through the maintenance optimizer (in SAP Solution Manager), and the SAP enhancement package installer have improved the upgrade and installation procedure.

> "The effort for implementing an enhancement package is comparable to installing a support package stack rather than a release upgrade. . . . The cost reduction by combining [the support package stack and enhancement package installation] is considerable."
>
> **Wolfgang Hohman,** Senior Specialist System Integration & IT Projects, Strabag PFS

Compatibility
As a rule, existing processes work with new SAP enhancement packages and application releases. In some cases, to use new processes you may need to implement the new application releases or enhancement packages and activate new functionality. For details on integration rules, refer to *SAP's Release Strategy for Large Enterprises*.

"The support packages in our productive SAP software system are normally updated on an annual basis. Now, with the installation of an enhancement package, we can combine this process without any additional efforts. This means that the latest SAP functionality and technology is always on hand. We simply need to activate functionality on request from our business community."

Dr. Marco Lenck, CIO, Rhein Chemie Rheinau GmbH

Business Function Prediction

The business function prediction offering provides a tailored recommendation about which functionalities from the SAP enhancement packages for SAP ERP will be relevant for your business and which ones are popular with other customers. Relevant functionality in enhancement packages for SAP ERP 6.0 can be identified based on your existing system usage. A results report shows the relevance of each business function for you and how often it is used by other customers. You can request this offering free of charge from SAP Service Marketplace at www.service.sap.com/bfp.

Service-Oriented Architecture

Service-oriented architecture is a blueprint for an adaptable, flexible, and open IT architecture that enables end-to-end business processes. SAP software supports the rapid adoption of SOA – enabling companies in various industries to quickly differentiate their businesses and optimize processes in their business networks at their own pace.

At the heart of the open-standards approach to SOA promoted by SAP is the concept of enterprise services – IT interfaces that provide business processes or business process steps that can be used to compose business scenarios while maintaining business integrity and ready reuse. SAP designs and implements enterprise services in such a way to preserve semantic harmonization and business relevance.

Using enterprise services, you can leverage SAP solutions in conjunction with partner solutions and homegrown solution landscapes to implement new, flexible, and innovative business processes based on a consistent integration concept across lines of business and even across company borders. As a part of SAP enhancement packages for SAP Business Suite applications, SAP delivers prepackaged, ready-to-use enterprise services that give you a head start in your SOA project. SAP publishes all of them at the Enterprise Services Workplace site in SAP Community Network for exploration, test-driving, and use.

SAP supports SOA via the service-enabled software (SAP Business Suite) and SOA-based, open technology platform (SAP NetWeaver) and offers a comprehensive methodology for design and development as well as operational SOA governance, modeling, and implementation guidelines for service developers.

Although SOA is not currently considered a primary driver for upgrading, the innovation and flexibility that SOA enables should be considered a major plank in the case to justify an SAP software upgrade.

Supporting End-to-End Processes with SAP Business Suite

You can calculate total cost of ownership only by carefully taking into account the integration cost with your existing platform. Moreover, you need to consider how to fill all the gaps and disruptions in your business processes that are caused by process-agnostic applications and an inflexible and insufficient architecture. More often than not, you leave a lot of money on the table due to the untapped potential of process optimization for a particular line of business or the entire company.

One of the objections frequently heard about SAP Business Suite is that, because it is a comprehensive solution offering, its implementation projects take too long to deliver tangible value for a line of business. What customers are looking for is a state-of-the-art implementation technology providing implementable steps that require only short time frames of 1 to 3 months and that deliver tangible business value in 9 to 12 months. However, an upgrade to SAP Business Suite 7 can fulfill exactly those requirements.

SAP software supports business processes end to end, which fully leverages the horizontal and vertical integration potential of SAP Business Suite. The horizontal integration enables the optimization of complex business processes across lines of business and across company borders.

End-to-end processes integrate four different perspectives: the customer strategy, industry-specific requirements, the SAP product offering, and how all this helps meet the business goals of a particular line of business. In the terminology of end-to-end processes, implementable steps describe the scope of an implementation project that has a clear business owner for the line of business addressed in that part of the process.

An upgrade to SAP Business Suite 7 comes with clear documentation – such as implementation guides and instructions for customizing activities – to guide your work during the implementation.

An additional advantage of SAP Business Suite 7 is you can utilize an array of tightly integrated assets from the underlying SAP NetWeaver technology platform, from the SAP BusinessObjects™ portfolio, and from a comprehensive portfolio of partner-built applications for SAP Business Suite.

SAP has identified seven core customer strategies, called themes, and a catalog of end-to-end processes assigned to these customer strategies. They can be displayed, together with implementation content, using SAP implementation tools such as SAP Solution Manager. They are also depicted at SAP Community Network (see Figure 3). An overview lists end-to-end processes and the customer strategy and leading line of business to which they are assigned. Each end-to-end process has its own page containing detailed information on its value proposition, associated business roles, implementable steps, enabled key business processes, and industry relevance. (See the "Further Information" section below for links.) "Adoption of SAP Technology Platform," which is part of every end-to-end process page, explains how the assets from SAP NetWeaver and the SAP BusinessObjects portfolio help you implement business processes in the most efficient way and what functionality of the underlying technology platform is leveraged.

For technology professionals such as system administrators, an in-depth graphical process flow across all involved system instances and a table-style release view including all application component versions of SAP Business Suite are provided. (See "Further Information" below for links.)

Customer's Key Business Goals	Leading Line of Business	SAP® Business Suite – Support for End-to-End Business Processes (End-to-end processes span multiple lines of business and directly contribute to strategic objectives of an enterprise)			
Superior customer value	Sales Marketing Service	Accelerating lead to cash		Account and trade promotion management	Differentiating through service excellence
		Interactive customer lifecycle management		Creating the optimal offer	Continuous product and service innovation (spans marketing, product development)
Product and service leadership	Product development Manufacturing	Embedded product compliance	Continuous product change and transformation	Integrated product development (also spans procurement)	
Operational excellence High-performing assets	Manufacturing Procurement Asset management	Planning, building, and commissioning assets		Asset visibility and performance	Asset safety and compliance
		Optimized asset operations and maintenance (spans supply chain)			Real estate lifecycle management
		Integrated sourcing and procurement		Centralized sourcing and contract management	
		Corporate shared services center			Efficient manufacturing operations
Financial excellence	Finance	Managing financial and operational performance		Managing treasury and financial risk	Consume to cash in high volume business
		Accelerating financial close		Invoice to pay / Customer to cash	Managing risk and compliance
Responsive supply network	Supply chain	Collaborative demand and supply planning		Logistics and fulfillment management (also spans sales)	Manufacturing network planning and execution (also spans manufacturing)
		Service parts planning and logistics			
Best people and talent	Human resources	Core HR and payroll		Developing a high-performing workforce	Driving efficient HR operations
		Optimize workforce scheduling		Building the workforce	

Figure 3: End-to-End Business Process Support by SAP Business Suite

Enhancements and Value Drivers

Every customer uses a different SAP software landscape. For that reason, key value drivers and tangible benefits of the new SAP software must be identified and mapped to business needs for each customer individually. You can use the summary of enhancements shown in the following tables to identify the relevance of specific features and functions for your organization and to drive an internal discussion among business units. This information should also help reveal the concrete benefits you can expect from the SAP Business Suite applications, which can contribute significantly to a justification for performing the upgrade. The content in the lists reflects the current planning status. All planned enhancements, features, and functions are subject to change.

SAP Enhancement Package 5 for SAP ERP 6.0

SAP ERP 6.0 with enhancement package 5 for SAP ERP provides many functional enhancements that can improve process efficiency. In addition, it integrates the functions of most SAP industry solutions so that these solutions no longer must be installed and set up separately. The new software simplifies daily business tasks through a more appealing and integrated user interface that increases user productivity and satisfaction – for example, it enables the use of Duet® software for integrating Microsoft applications.

The following tables highlight the main enhancements in SAP ERP 6.0 with enhancement package 5 for SAP ERP.

SAP ERP Human Capital Management

Business Challenges	Enhancements	Features and Functions
▪ Adjust compensation to reward the right behavior and drive retention of key employees ▪ Provide insight into the workforce and talent data to help plan for the future	▪ Talent management analytics ▪ Compensation planning	▪ Talent management cross-analytics to measure depth of talent and departures, lateral moves, and other key actions of personnel ▪ Succession planning analytics to monitor succession key performance indicators ▪ Data migration tool to facilitate succession planning upgrades ▪ Enhanced process step choices for employee performance management ▪ New user interface and functionality for compensation planning and approval process with embedded analytics ▪ New compensation profile providing key data and analytics about an employee's compensation history, critical organization data, and talent data ▪ Different process types to allow for both organizational unit–based and employee-based compensation reviews ▪ Budgets on employee level to allow for budget transfers along with employee transfers and organizational changes ▪ Global employment functions to identify the source of data for compensation processing
Drive efficient HR operations	Enhancements for employee self-services (ESS) and employee interaction center (EIC)	▪ Improved user interface for employee self-services and HR processes and forms ▪ Integration of an interaction center with the SAP® Shared Service Framework software that leverages the SAP Customer Relationship Management application ▪ Enhanced functionality of interaction center for employee authentication, authorization, surveys, reporting, and integration of HR processes and forms ▪ Additional offering for self-services and HR roles based on SAP NetWeaver® Business Client software ▪ Localization adaptations of various functions for Japan, India, Spain, Italy, Russia, China, Ireland, Finland, Canada, Chile, and Portugal

SAP ERP Financials

Business Challenges	Enhancements	Features and Functions
Improve financial operations	▪ Enhanced reporting functionality ▪ Increased user productivity in collection activities ▪ Credit management with no need of SAP NetWeaver® Process Integration technology ▪ More information in supplier-facing portals ▪ Automated and enhanced straight-through processing of rates-of-payment advice via enterprise services ▪ Enhanced functions in generic contract accounting for companies dealing with high-volume data ▪ Improvements in the invoice process ▪ Functionality to handle significant amounts of billable data	▪ Dashboards for dispute management, credit management, and collection management ▪ Single dunning by collection specialist ▪ Attachment of documents during collection of outstanding receivables ▪ Inquiries by vendors ▪ Handling of incoming and outgoing electronic payment advices ▪ New extractor for promises to pay ▪ Determination and transfer of key performance indicators (KPIs) generated in the payment behavior KPIs of the SAP® ERP application contract accounts receivable and payable function to credit management ▪ Update run for change of collection strategy ▪ Business rule framework trace in dunning mass activity ▪ New enterprise services for promises to pay ▪ Invoice-level discounts and charges ▪ Billable item management
▪ Shift internal responsibilities to match rapidly changing market requirements ▪ Provide a reliable basis for decision making in order to optimize business processes ▪ Facilitate process control via a better user interface and higher data transparency to reduce total cost of ownership and implementation	In financial accounting: ▪ Enhanced reporting functionality ▪ Enhancements for the new general ledger, profit center reorganization, and segment reports ▪ Enhancements in the error correction functions ▪ Improved business process control and data quality for general ledger accounting ▪ Better performance and less data volume ▪ Better organizational flexibility by using a defined method for restructuring areas or responsibilities (profit centers) ▪ Standardized third-party high-volume data feed with error correction functionality and solid audit tracking ▪ Improved business process control and data quality ▪ Usability, integration, and compliance improvement in daily work with closing cockpit	▪ SAP Crystal Reports® software for general ledger, asset accounting, and accounts receivable ▪ Fixed asset accounting: reporting on segments and profit centers ▪ Reorganization of profit centers ▪ Error correction handling ▪ Impairment of assets supporting the IAS 36 standard ▪ Functionality to read new general ledger totals from the archive ▪ Multi-GAAP valuation for material inventory ▪ Number assignment during asset transfer ▪ Enhanced reports for reconciliation between materials management and the new general ledger

Business Challenges	Enhancements	Features and Functions
Value inventory using multiple accounting approaches and in multiple jurisdictions	In management accounting: ▪ Enhanced reporting functionality ▪ Valuation of inventory for manufactured goods according to multiple accounting approaches ▪ Cross-company-code actual costing	▪ SAP Crystal Reports for overhead cost management and profitability analysis ▪ Transfer of depreciation from asset accounting to controlling ▪ Calculation of activity prices to reflect multiple accounting approaches ▪ Inclusion of multiple activity prices in periodic costing run ▪ Inclusion of multiple activity rates in alternative valuation run ▪ Extension of actual costing for materials to run across company codes with no loss of actual costs, with an actual cost component split between company codes
▪ Create transparency of liquidity and cash flow to manage hedging ▪ Increase automation to reduce errors and streamline payments and collections	In treasury activities: ▪ Enhanced reporting functionality ▪ Streamlined hedge management and hedge accounting to reduce market price and interest rate risk ▪ New financial instruments ▪ Financial risk management for commodities ▪ New functional enhancements for the SAP In-House Cash application	▪ Dashboard for cash management ▪ Hedging with commodity swaps; hedge of own issued bonds, of bonds with interest rate swaps, and of local currency stocks with total return swaps ▪ For financial instruments, commodity swaps and OTC options, forward loan purchase, fiduciary deposit, and total return swap ▪ Valuations of commodity paper deals and commodity exposures using price curves

SAP ERP: Procurement

Business Challenges	Enhancements	Features and Functions
■ Enhance centralization of procurement operations ■ Improve speed, quality, and efficiency in invoice reconciliation processes ■ Provide additional services, procurement process flexibility, and extended functionality	■ General procurement enhancements ■ Accelerated capture of data in purchase orders ■ New stock in transit and actual costing	■ Park and hold for the SAP® ERP application purchase orders and purchase requisitions ■ Contract handling for invoices (SAP ERP part) ■ Integration of SAP NetWeaver® Master Data Management component catalog into purchase requisitions, purchase orders, and plant maintenance orders to build complex service structures ■ Enhanced material search ■ Display of archived invoices within the standard procurement transaction ■ Template function for purchase orders and purchase requisitions ■ Enhancement in single processing of purchase requisition to support service items and limit items ■ Tracking of dates of freely defined events assigned to scheduling lines of a purchase order item ■ Buyer role available for SAP NetWeaver Business Client software
Integrate SAP Supplier Relationship Management (SAP SRM) and SAP ERP applications	Enhancements of procurement functionality in SAP ERP based on the integration of SAP ERP with SAP SRM	■ Service procurement with central contracts ■ Integration of park and hold with SAP SRM ■ Invoice creation against central contract in SAP SRM ■ Enablement of info lines in purchase requisitions in SAP ERP ■ Enablement of contract limits through the integration of SAP ERP with supplier self-services functionality in SAP SRM ■ Integration of SAP NetWeaver Master Data Management catalog for complex service structures

SAP ERP Operations: Sales and Customer Service

Business Challenges	Enhancements	Features and Functions
Increase efficiency of sales and distribution processes	▪ Improved Web user interface (UI) ▪ Improved functionality in sales order management	▪ Role of internal sales representative supported by configurable sales UI available for SAP NetWeaver® Business Client software ▪ Improvements to the configurable sales UI: configuration wizard for adding custom fields, enabled sales contract, billing plan, repair order, and variant configuration; a simplified material search; and a print preview ▪ Enhanced material search and creation – sales transactions in the SAP® graphical user interface (SAP GUI) ▪ Provision of direct mailing to recall orders with certain batches ▪ Display of archived contracts within the standard contract transaction ▪ Improved cost update (condition type VPRS) for all standard sales processes for continuous cost analysis

SAP ERP Operations: Manufacturing

Business Challenges	Enhancements	Features and Functions
Optimize processes in production planning and execution	▪ Extended functions for lean manufacturing ▪ Enhanced outsourced manufacturing ▪ Manufacturing analytics ▪ Enhanced task and process management	▪ Enhanced tracking of events and incidents on the shop floor as well as enhanced support for shift reporting ▪ Support for additional business processes in outsourced manufacturing ▪ Extended tracking of work in process ▪ Quality collaboration in outsourced manufacturing processes ▪ Manufacturing dashboards and power lists for process manufacturers ▪ Support of global use of execution steps (XSteps) for electronic work instructions and process instruction sheets (PI-sheets) and a new archiving feature ▪ New lean manufacturing features and enhanced usability in kanban planning and execution as well as production leveling ▪ Streamlined process integration for manufacturing execution processes that run between the SAP® ERP and SAP Manufacturing Execution applications

SAP Enterprise Asset Management; SAP EHS Management

Business Challenges	Enhancements	Features and Functions
Efficiently manage enterprise assets	▪ Linear asset management ▪ Optimized asset operations and maintenance ▪ Operation account assignment ▪ Work permit management	▪ Management of continuous assets with dynamic segmentation ▪ Ability to see order costs at operation level ▪ Support for executing and completing maintenance work processes on the shop floor with a simplified user interface ▪ Support for cost assignment for a single order with cost objects at operation level ▪ Use of work permits in safety-relevant maintenance processes
Improve environment, health, and safety performance	▪ Recycling administration: environmental product reporting and lean data entry ▪ Continuous improvements	▪ Enhancements in the area of recycling to expedite regulatory reporting and data entry ▪ New functionality for product safety and Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) to gain visibility into registration requirements, avoid risk of noncompliance and supply chain disruptions, and provide timely registration of key products, materials, and substances ▪ Increased user-friendliness and configurability in the user interface of the incident management functions as well as support for workflows

Operations: Cross Functions

Business Challenges	Enhancements	Features and Functions
▪ Integrate quality management functionality of the SAP® ERP Operations solution and the SAP Environment, Health, and Safety Management (SAP EHS Management) application ▪ Enhance quality management functionality of SAP ERP Operations	▪ Integration of SAP EHS Management and quality management functionality of SAP ERP Operations ▪ Extended functions for failure mode and effects analysis (FMEA) and quality notifications	▪ Inspection characteristics and inspection plans created from specification data of SAP EHS Management ▪ Extensions of functions in FMEA, including integration with quality notifications, digital signatures, and new user parameter for setting the FMEA type ▪ Additional selection criteria for related quality notifications ▪ Ability to print quality notification without leaving the transaction ▪ New specification determination rule for integration of inspection characteristics with variant configuration ▪ Quality inspector role available for SAP NetWeaver® Business Client software

SAP Shared Service Framework

The following table highlights the main enhancements in SAP ERP 6.0 with enhancement package 5 for SAP ERP and SAP CRM 7.0 with enhancement package 1 for SAP CRM specific to the SAP Shared Service Framework software. Please note these enhancements are available only as part of SAP Shared Service Framework. SAP Shared Service Framework is initially available for the SAP ERP Human Capital Management solution and the SAP ERP Financials solution.

Business Challenges	Enhancements	Features and Functions
Lower cost of human capital management and financials activities	▪ Convenient front-end service center that provides essential support for call management, ticket management, dispatching, routing, and monitoring of service levels ▪ Reduced effort in communicating with customers of the shared service center ▪ Automated generation of service tickets, with service tickets populated during creation ▪ Intelligent use of context information to guide the service center agent to the back-end systems and business object	Integration of interaction center with back-end applications relevant for provisioning shared services
Achieve consistency in service delivery and monitor service quality	▪ Collection of performance information during day-to-day service operation ▪ Convenient interface for access to performance-related information	▪ Open hub interface to perform data extraction ▪ Guidebook to sample set of key performance indicators and how to extract them
Harmonize service provision across organizations	▪ Architectural support for several shared service functions from a single instance of SAP® Shared Service Framework software ▪ Harmonized approach to service delivery ▪ Freedom of organizational design, for example, in service centers or service teams service layers	Multifunctional framework for shared services
Provide support for multiple back-end solutions	▪ Multiple back-end systems linked to one front-end service center ▪ Support for heterogeneous system versions ▪ Connection to non-SAP back-end software ▪ No prerequisite of harmonized master data	▪ Back-end connections to shared service–relevant applications for back-end software of various releases (SAP R/3® 4.6c software and later) ▪ Avoidance of upgrade through fine-grained provision of connectors for older back-end software releases
Extend self-service provisioning	Extensive portfolio of financial self-services	▪ Journal entries ▪ Requests for information related to period-end close
Increase security and confidentiality in service provision	▪ Verification of calling party ▪ Granular authentication scheme for service agents	Customizable set of verification questions and answers

SAP Master Data Governance

The following table highlights the main enhancements to SAP Business Suite that SAP delivered in 2010 related to the SAP Master Data Governance application.

SAP Master Data Governance is comprised of domain-specific, master-data governance applications to centrally create, change, and distribute master data with a focus on SAP Business Suite software. While the SAP Master Data Governance functionality for SAP ERP Financials is enhanced with these innovations, the applications for supplier master data and materials master data are completely new.

Business Challenges	Enhancements	Features and Functions
Increase master-data quality for financial data	▪ Governance of master data for financials and organizational units ▪ Governance of master data for financials, chart of accounts, and financial reporting structure ▪ Governance of master data for financials and organizational units	▪ Organizational unit as new financial entity in the SAP® Master Data Governance application ▪ Change requests with SAP Interactive Forms software by Adobe ▪ Automated distribution of master-data changes ▪ Quality reporting on the change process ▪ SAP BusinessObjects™ software integration for the SAP Strategic Enterprise Management application: SAP BusinessObjects Planning and Consolidation application and financial consolidation ▪ Automated import of master data into SAP Strategic Enterprise Management ▪ Cost element as new financial entity in SAP Master Data Governance ▪ Automated import of master data into the SAP ERP Financials solution
Increase master-data quality for supplier data	Up-front master-data governance	▪ Workflow-driven creation and change process for suppliers ▪ Change requests that steer the maintenance and approval process of new and changed data ▪ Document changes for audits ▪ Work lists that organize due changes ▪ Nonapproved data kept in the inactive "staging" area ▪ Distribution to operational group or local systems ▪ Data distribution to operational systems via enterprise services (SOA) or application link embedding (ALE) ▪ Search, display, change, and creation of single supplier master data ▪ Creation and change of corporate, company, and purchasing attributes of suppliers ▪ Mass processing of changes ▪ Data quality services, such as duplicate check and address validation
Increase master-data quality for material data	Up-front master-data governance	▪ Workflow-driven creation and change process for materials master data ▪ Change requests that steer the maintenance and approval process of new and changed data ▪ Mass processing of change requests ▪ Document changes for audits ▪ Work lists that organize due changes to inform users ▪ Nonapproved data kept in the inactive "staging" area ▪ Transfer into the active data sets after approval ▪ Distribution to operational systems (typically via ALE) ▪ File upload ▪ Search, display, change, and creation of single materials master data ▪ Identifying and descriptive materials data ▪ Units of measurement ▪ Characteristics and valuation

SAP Enhancement Package 1 for SAP SCM 7.0

The following table highlights the main enhancements in each of the components of SAP SCM 7.0 when installed with enhancement package 1 for SAP SCM. The components are the SAP Advanced Planning & Optimization (SAP APO) component and the SAP Extended Warehouse Management (SAP EWM), the SAP Event Management, and the SAP Supply Network Collaboration (SAP SNC) applications.

Business Challenges	Enhancements	Features and Functions
Globalize and outsource	SAP® Advanced Planning & Optimization (SAP APO) component: third-party order processing	▪ The transfer consumption of third-party purchase requisitions for direct shipment sales orders from the SAP ERP application to SAP APO and back ▪ Support of midterm supply chain planning for third-party orders, including forecasting factors and finite capacities at the supplier
Increase demand and supply volatility	SAP APO: aggregated planning within supply network planning	Accurate aggregated planning, including direct shipment sales orders, distribution profile, automatic and correct aggregation, and disaggregation
Avoid poor customer service	SAP APO: demand planning SAP APO: global available-to-promise function	▪ Improved usability of the charts and graphics and relevant customizing in demand planning and supply network planning ▪ Enhanced check to determine a common delivery location for a requirements grouping ▪ Enhanced multilevel available-to-promise function to improve consideration of remaining requirements on the component level for correlating the results to the header level
Gain visibility beyond company walls	SAP APO and SAP Supply Network Collaboration (SAP SNC) application: supplier collaboration	▪ Increased planning security and visibility through use of supplier confirmation data in planning runs ▪ Enhanced supplier forecast commit collaboration through integration of planned receipts in SAP SNC with SAP APO ▪ Enhanced alerts for overdue planned receipts
Manage inbound and outbound transportation	SAP Transportation Management (SAP TM) application: integrated market-ready solution	▪ Order-driven transportation management, usability, compliance for hazardous goods (with the SAP Environment, Health, and Safety Management [SAP EHS] application), exports, the SAP ERP Financials solution, and billing ▪ Integration with SAP ERP, global trade services software, the SAP Geographic Information Systems business connector, SAP APO, and SAP EHS Management ▪ Event management support to monitor and manage process exceptions
Improve visibility in returns processing	SAP Extended Warehouse Management (SAP EWM) application	Process differences and returns from SAP EWM for real-time visibility and correction of discrepancies
Integrate processes for synchronized execution	SAP EWM and SAP TM: integrated logistics	Integration of order fulfillment process based on SAP ERP

Business Challenges	Enhancements	Features and Functions
Enhance functions in warehouse analytics	SAP EWM: predefined key performance indicators (KPIs)	Dashboards for monitoring real-time performance
Gain visibility into quality issues in distributed supply networks	SAP SNC: quality collaboration	▪ Support for quality notification that increases visibility by capturing, tracking, and allowing collaborative resolution of quality issues in the extended supply network ▪ Support for customers and suppliers (subcontractors) to create quality notifications, including notification priorities, subject and defect codes, and start and end dates for resolution ▪ Alerts for exception handling in quality collaboration issues ▪ Integration with quick views in SAP SNC to display quality notification KPIs and provide direct user access to relevant transactions
Gain visibility into dependencies in distributed supply networks	SAP SNC: grouping of purchase order items	▪ Logical grouping of purchase order items across purchase orders and associated work orders to show dependencies in the supply network ▪ Display of exceptions caused by disruptions in the supply network to allow immediate response
Drive business partner adoption through an application that is straightforward to use and interact with	SAP SNC: quick view, file transfer, and supplier onboarding	▪ Extended scope of quick-view building blocks to cover all functionality in SAP SNC and help guide end user to time-critical tasks requiring attention ▪ Extended scope of file transfer functions to include offline invoice creation, recording of work order progress, and inventory information ▪ Enhanced support for supplier onboarding, allowing delegation of select user-data maintenance to the end user
Optimize shipments to meet sustainability requirements and reduce cost	SAP SNC: shipment collaboration	Shipment collaboration functionality that allows users to group individual advanced shipping notifications to help optimize the number of necessary shipments
Supplement structured collaboration with unstructured communication	SAP SNC: microblogging	▪ New microblog support for unstructured, timely communication with one or more business partners, users, and groups ▪ Support for mass broadcasting and targeted communication, request a response, response tracking, yes and no votes, attachments, and links

SAP Enhancement Package 1 for SAP SRM 7.0

The following table highlights the main enhancements for SAP SRM 7.0 with enhancement package 1.

Business Challenges	Enhancements	Features and Functions
Provide additional services, greater procurement process flexibility, and extended functionality	▪ Strengthened service procurement processes between the SAP® Supplier Relationship Management (SAP SRM) and SAP ERP applications ▪ Enhanced sourcing and contract management functionality for services ▪ Master-data catalog as central repository for service specifications ▪ Improved contract visibility and compliance for the scenarios "non-purchase-order invoice" and "limit purchase order"	▪ Central contract for services, including service hierarchies; upload of contracts to procurement catalogs ▪ Start RFx processing for services with hierarchy structures ▪ New user interface developed in the Web Dynpro development environment to handle purchase requisitions for services ▪ Release central contract from an SAP ERP and supplier self-service invoice
Improve contract compliance and enforcement monitoring	▪ High transparency of the contract lifecycle through embedded analytics ▪ Central contracts for complex services, including hierarchies	▪ Upload of SRM contracts with service hierarchies to master-data catalog ▪ Embedded analytics; context-sensitive work center for contract management ▪ Predefined analytics reports, for example, alternative sources of supply or contract lifecycle overviews ▪ Direct contract releases from invoice
▪ Enable comprehensive process integration ▪ Provide additional flexibility and transparency to the sourcing process ▪ Deliver a secure bidding and quotation process	▪ Flexible usage of bidding scenarios (for example, offline and in front of firewall) ▪ Improved bidding engine functionality	▪ Offline bidding with SAP Interactive Forms software by Adobe ▪ RFx response "in front of firewall" ▪ Response modification at the line-item level ▪ Response comparison: weight simulation ▪ Two-envelope bidding
Intuitive self-service requisitioning	▪ New shopping-cart application ▪ Improvements in workflow and procurement catalog	▪ Straightforward requisitioning via new shopping-cart concept ▪ Catalog user interface enhancements ▪ Workflow processing improvements, including parallel approval process
Deliver more effective supplier registration and qualification	▪ Better supplier data management and support for registration, qualification, and creation of suppliers ▪ Business partner work center to manage the onboarding and updating of suppliers	▪ New user interface for supplier self-registration ▪ Upload of attachments and notes during registration ▪ Work center–based access to registration forms, credentials, master data, and distribution logs of the supply base ▪ Distribution of suppliers to SAP SRM and SAP ERP ▪ Self-maintenance of supplier data
Reduce total cost of ownership	Simplified implementation options	▪ Installation of SAP SRM without a portal by using SAP NetWeaver® Business Client software ▪ Possibility to execute enterprise services without installing SAP NetWeaver Process Integration technology ▪ Analytics functionality in SAP SRM – independent from the SAP NetWeaver Business Warehouse component ▪ Additional business scenarios supported in a one-client installation (SAP SRM integrated with SAP ERP)

SAP Enhancement Package 1 for SAP CRM 7.0

The following table highlights the main enhancements for SAP CRM 7.0 with enhancement package 1.

Business Challenges	Enhancements	Features and Functions
▪ Increase efficiency and accountability for marketing resources and results ▪ Extend marketing reach and connect with customers to drive demand and build customer loyalty	▪ Marketing resource management ▪ Segmentation ▪ Campaign management ▪ Loyalty management ▪ Marketing performance management	▪ Marketing calendar ▪ Marketing funds management ▪ Campaign templates ▪ Marketing task management ▪ Third-party digital asset management ▪ Relationship and object segmentation ▪ Segmentation on prospects ▪ Collaborative campaign management ▪ Real-time offer management in campaigns ▪ High-volume campaign execution ▪ Third-party e-mail marketing integration ▪ Partner management to enable partner participation ▪ Flexible reward platform, including benefits, vouchers, and flexible mixed payments ▪ Point-of-sale integration ▪ Loyalty analytics ▪ Membership enhancements, including business-to-business and instant or anonymous cards ▪ Predefined marketing dashboards
▪ Increase reliability and accuracy of the sales pipeline ▪ Establish distributed selling and enhance available sales functionality	▪ Account and contact management ▪ Analytics ▪ Price and margin management ▪ Accelerated lead to cash ▪ Order management ▪ Price and tax management ▪ Client-based groupware integration	▪ Quick creation of accounts ▪ Additional assignment blocks for quotations, sales orders, and quantity contracts in the SAP ERP application ▪ Dashboards for sales representative, sales manager, and sales executive ▪ Interactive reporting for sales quotations, sales orders, and sales contracts ▪ New extra-powerful query for orders ▪ Integration of the SAP Price and Margin Management application by Vendavo with the SAP Customer Relationship Management (SAP CRM) application ▪ Additional assignment blocks for quotations, sales orders, and quantity contracts in SAP ERP ▪ Updated support for SAP CRM–based transaction processing in France, Italy, India, and Ireland ▪ Enhanced order performance ▪ Enablement of the extended data retention tool (DARTX) for audit support

Business Challenges	Enhancements	Features and Functions
Increase effectiveness and efficiency of service agents	Service	▪ Mobile gateway enhancements for sales and service ▪ Service transaction monitor
▪ Differentiate through service excellence in an interaction center ▪ Reduce contact center costs while driving additional revenue	Interaction center	▪ Multisession support ▪ Task-based user interface wizard ▪ Asynchronous processing for alerts and agent in-box ▪ Enhancements to communication-enabled business processes ▪ SAP CRM instant messaging ▪ Media blending and context transfer ▪ Click to contact
▪ Reduce channel support costs while increasing partner satisfaction and ease of doing business ▪ Expand market reach and maximize revenue through channel collaboration	▪ Partner channel management ▪ Collaborative campaign management ▪ Market development funds	▪ Support for collaborating and coordinating marketing programs with channel partners ▪ Extension of sales and marketing reach ▪ Automated funding distribution ▪ Mandatory causal factors

SAP Enhancement Package 1 for SAP PLM 7.0

The following table highlights the main enhancements of SAP PLM 7.0 and the SAP enhancement package 1 for SAP PLM.[3]

Business Challenges	Enhancements	Features and Functions
Increase user productivity	▪ User interface (UI) that is easier to deploy and more intuitive ▪ UI for materials master, bills of materials, document management, engineering change management, product structures, and variant configuration ▪ Improved navigation ▪ Improved search usability and performance	▪ Web UI ▪ UI support for existing objects ▪ Object navigator for the SAP® Product Lifecycle Management application ▪ Product structure management ▪ Product structure synchronization ▪ Search functionality
Improve product intelligence	Context-sensitive embedded analytics and supplemental area in the UI	Business context view
Heighten collaboration and access control	Increased security to protect intellectual property	▪ Context-based authorization ▪ Secure collaboration architecture
Enhance engineering change management	Comprehensive and transparent change management for efficient continuous product transformation	▪ A change record to collect all objects and information to initiate, investigate, approve, and execute change management processes ▪ Predefined process routes and templates with support of ad hoc workflow ▪ Change process analytics to track and maintain workflow processes
Synchronize product structures	Generic engine to support the transformation (complex restructuring) of bills of materials and recipes and to log all changes of the transformation to provide guidance for continuous updates of the transitions	▪ Synchronization of development and R & D with manufacturing ▪ Structuring of management support across multiple locations ▪ Support for change process of product structures across organizational units

3. Shipped with enhancement package 5 for SAP ERP 6.0

PLANNING AN UPGRADE

STRATEGY AND MANAGEMENT TO MAKE THE PROJECT RUN SMOOTHLY

The discovery and initial evaluation phases produce a high-level definition of business and IT requirements and a business case. After those phases, you enter a more detailed upgrade evaluation and upgrade planning phase.

In a recent survey conducted by SAP, 69% of respondents said that cost and effort estimates are the major challenges they face during the upgrade planning phase. Forty-six percent said that project management factors are the major challenges. The definition of an upgrade strategy and development of a schedule are also significant challenges during planning and evaluation, especially in large organizations. This section outlines challenges, best practices, and SAP recommendations for these and other important planning factors.

Assessing Impact of an Upgrade on the Existing Solution

Even in the planning phase, you should perform an early risk and impact assessment to produce an accurate picture of cost drivers for the project. The risk, difficulty, and duration of upgrading to SAP Business Suite applications vary greatly depending on the source release and the software landscape. For example, upgrading from SAP R/3 4.6C or higher is considerably easier and involves lower risk because it involves only limited code changes to the central component of your current SAP ERP software. For releases below SAP R/3 4.6C, upgrades to SAP ERP 6.0 involve a higher risk and may require more application adjustments, testing, and user training.

Typically, SAP Business Suite applications are part of an SAP software landscape that contains a variety of interconnected software solutions. Business processes can run across the various solutions. When planning an upgrade of the solutions in your landscape, you must know whether this will have an impact on other software in your landscape – that is, whether the upgrade requires changes to other solutions in the landscape as well. In general, there are no dependencies – but if there are, SAP can help with the right set of tools.

The level of risk and the need for application adjustments and user training increase with the complexity of the software landscape and your levels of customization and modification. Good IT housekeeping (archiving, documentation, and regular system maintenance) can significantly increase the efficiency of an upgrade. The use of SAP industry solutions based on SAP R/3 may increase the effort involved in the project.

SAP recommendation: To perform a detailed and reliable assessment of the risk and complexity of an upgrade project, you should carry out an impact analysis for at least one typical software solution. This will serve as a reference and a basis for an initial technical risk assessment. Such a procedure is essential for calculating required resources and preparing your organization to deal with challenges.

Upgrade Information Center

A single point of access for upgrade-related information throughout the upgrade lifecycle – generally and solution specific – is available at www.service.sap.com/upgrade. You will find information here for various target groups with a technical and a business focus in English and Japanese. The information is updated on a regular basis.

Upgrade Dependency Analyzer

You can use the upgrade dependency analyzer to check the existence of upgrade dependencies between two separately installed SAP® solutions in your software landscape. For details, see www.service.sap.com/uda.

Technical Prerequisites and Limitations

When upgrading to the latest release of any of the SAP Business Suite applications, including the latest SAP enhancement packages, there are technical prerequisites that you must take into account. This section highlights some of the important prerequisites and indicates where to find more information for each application.

Upgrade Paths for SAP Business Suite Applications

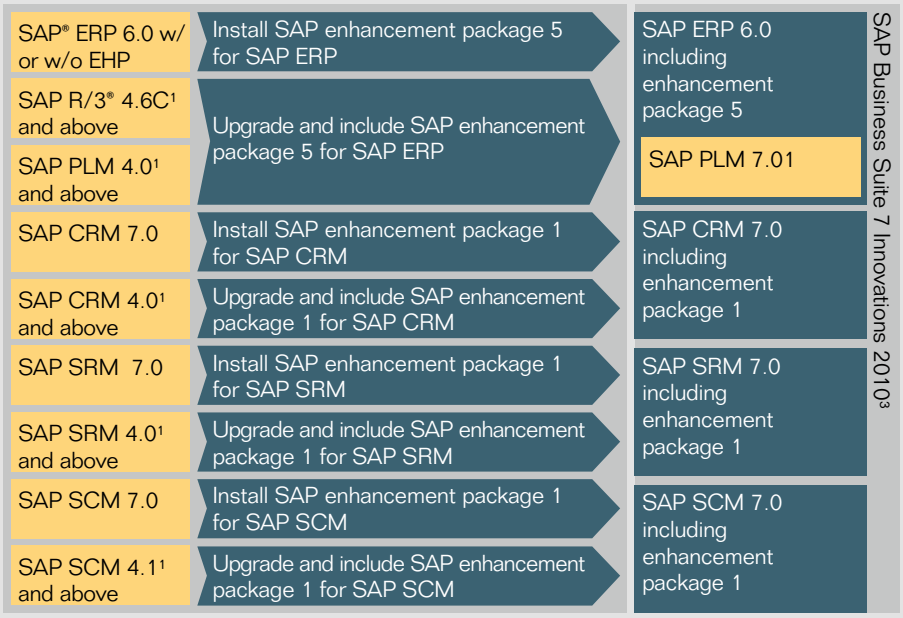
Figure 4 gives an overview of the direct upgrade paths to the latest releases of the SAP Business Suite applications, including the latest SAP enhancement packages.

To upgrade to the latest releases of the SAP Business Suite applications, including the respective SAP enhancement packages, you may need to:

- Upgrade to a source release from which you can perform a direct upgrade to the latest release
- Change your hardware, operating system, or database platform
- Perform a Unicode conversion if you use multiple-display, multiple-processing (MDMP) technology or blended code pages to display languages with different character sets

SAP® Safeguarding for Upgrades

With the SAP® Safeguarding for Upgrades portfolio of services, SAP offers a holistic approach for technical risk mitigation in SAP software upgrades. It focuses particularly on the initial technical risk assessment and tailors this to your specific situation (see www.service.sap.com/safeguarding).



EHP = Enhancement package

[1] Direct upgrade from these source releases to the latest releases of SAP Business Suite 7 Innovations 2010 is supported by SAP.

[2] If you upgrade from SAP CRM 4.0 or 5.0 to SAP CRM 7.0, customer-specific user interfaces (including the underlying coding related to the user interface) have to be migrated separately.

[3] Most industry and supplementary applications are shipped with the SAP Business Suite applications and are included in the respective upgrade. For the versions of industry and supplementary applications that are part of SAP Business Suite 7 Innovations 2010 but not shipped as part of SAP ERP, SAP SCM, SAP PLM, SAP SRM, or SAP CRM, please refer to *SAP Release Strategy for Large Enterprises* on service.sap.com/releasestrategy.

Figure 4: Direct Upgrade Paths for SAP Business Suite Applications

Technical Upgrade Notes for SAP Business Suite

The following table provides you with the most important technical upgrade notes for the SAP Business Suite applications. For comprehensive information, refer to the upgrade guides, upgrade master guides, component upgrade guides, and migration guides on SAP Service Marketplace at www.service.sap.com/instguides.

SAP® Business Suite Application	Notes
SAP® ERP 6.0 application	If you are running the mySAP™ ERP 2004 application or an older release, you must upgrade to SAP ERP 6.0 before you can use the SAP Business Suite 7 applications and SAP enhancement packages. If you are planning an upgrade to SAP ERP 6.0, you should include SAP enhancement package 5 for SAP ERP in your upgrade. The Internet transaction server functionality has been integrated into the SAP NetWeaver® technology platform. The stand-alone functionality is no longer supported by SAP. If you have been using advanced features of this software and want to continue using them, you need to perform a migration to the latest release of the SAP NetWeaver Portal component. If you want to continue using the basic features, you must perform a migration to the Internet transaction service software that is now part of SAP NetWeaver. For details, in the SAP Notes tool see SAP Note 709038: "SAP Integrated ITS." For release restrictions, see SAP Note 852235.
SAP Customer Relationship Management (SAP CRM) 7.0 application	The SAP graphical user interface is only supported for administrative tasks. The people-centric user interface (UI) is no longer supported. The new Web client UI in SAP CRM was introduced in SAP CRM 2007. For more information, see SAP Note 1118231. If you upgrade from SAP CRM 4.0 or 5.0 to SAP CRM 7.0, a technical upgrade is available, but an automatic UI migration of customer-specific UIs (including the underlying UI-related coding) is not possible. For details of UI migration, see the SAP CRM 7.0 Upgrade Master Guide. If you are planning an upgrade to SAP CRM 7.0, you should include SAP enhancement package 1 for SAP CRM in your upgrade project.
SAP Product Lifecycle Management (SAP PLM) 7.0 application with enhancement package 1	The software landscape includes the following software component versions as a minimum. These software components are included in SAP ERP 6.0, including SAP enhancement package 5, with support package 1. This installation also includes SAP NetWeaver 7.02 enhancement package 2, with support package 1. ▪ EA-IPPE 405 EA-IPPE 405 functions are available with the installation of SAP enhancement package 5 for SAP ERP 6.0 and with the activation of the /PLMU/IPPE_INT business function. ▪ SAP PLM Web UI 701 SAP PLM Web UI 701 functions are available with the installation of SAP enhancement package 5 for SAP ERP 6.0 and with the activation of the /PLMU/WEB_UI business function. ▪ SAP APPL 605 and EA_APPL 605 ▪ SAP BS_FOUNDATION 702

SAP® Business Suite Application	Notes
	■ SAP NetWeaver 7.1 TREX server For more information, see SAP Note 1249465 The viewer used in the SAP PLM Web UI must be installed on each front end, where the viewer will be used. To do this, download the installation file from the SAP Service Marketplace extranet and execute it locally. For details, see SAP Note 1319472: "Installation Note for Viewer in SAP ERP EHP5."
SAP Supplier Relationship Management (SAP SRM) 7.0 application	In addition to being available as a stand-alone application, SAP SRM 7.0 is available as an add-on to SAP ERP 6.0 (SAP SRM on one client) with functional limitations. SAP SRM 7.0 on one client in SAP ERP is available as of SAP ERP 6.0 enhancement package 4 with SAP NetWeaver 7.01. If you have an existing SAP SRM 5.0 one-client installation running on SAP ERP 6.0 software, you can upgrade to SAP SRM 7.0 on one client after the installation of SAP ERP 6.0 enhancement package 4 (with SAP NetWeaver release 7.01). For details of the limitations of SAP SRM 7.0 on one client, see SAP Note 963000: "Usage and Release of SRM as Add-On to ECC in SAP ERP 6.0." If you are planning an upgrade to SAP SRM 7.0, you should include SAP enhancement package 1 for SAP SRM into your upgrade project.
SAP Supply Chain Management (SAP SCM) 7.0 application	The following applications are components of SAP SCM 7.0 and are included in the upgrade to SAP SCM 7.0: ■ SAP Advanced Planning & Optimization (SAP APO) component ■ SAP Extended Warehouse Management (SAP EWM) application ■ SAP Event Management application ■ SAP Supply Network Collaboration (SAP SNC) application For release restrictions, see SAP Note 1284461: "Release Restrictions for SAP SCM 7.0." SAP EWM, SAP Event Management, and SAP SNC can be installed as add-on components to SAP ERP 6.0 with enhancement package 5 or SAP NetWeaver 7.0 with enhancement package 1. For details, see SAP Note 1173386: "Installation/Upgrade from SCM EWM 7.0 to ERP 6.0 EHP4 or higher"; SAP Note 1173567: "Installation/Upgrade SCEMSRV 700"; SAP SNC 7.0 Upgrade Master Guide; and SAP Note 1173389: "Installation/Upgrade SCMSNC 700 on NW 7.0 EHP1." If you are planning an upgrade to SAP SCM 7.0, you should include SAP enhancement package 1 for SAP SCM in your upgrade project.

When upgrading, you may encounter the following limitations:

- Limited availability of country versions or third-party products – archiving tools, for example
- Compatibility problems with other SAP applications or third-party products (for example, those not compatible with Unicode)

You can find comprehensive information about the release restrictions and technical limitations for each SAP Business Suite application in the SAP Notes tool.

Installing SAP Enhancement Packages

When installing an SAP enhancement package or including it in the upgrade, SAP recommends the following approaches:

- Install only selected parts of the enhancement package. Select only those software components that you need from a business point of view. As long as you do not activate a business function, the installation of an enhancement package has no impact on existing business processes or user interfaces.
- New functionality must be explicitly switched on to become active in the software. Changes are predictable, with changes effective only in the activated areas.

Planning Service for SAP® Enhancement Packages

The enhancement package planning service for the SAP® ERP application involves:

- On-site planning and knowledge-transfer workshops focused on enhancement packages
- Software landscape and interface analysis
- Prerequisite checks in SAP ERP and the SAP Solution Manager application management solution
- Development of a milestone plan, issue list, and list of next steps
- Presentation of results and recommendations

- Always install SAP enhancement packages together with a support package. Using this strategy, SAP enhancement packages can be installed as a normal maintenance activity together with support packages. Note that you have to schedule a regression test as part of this maintenance activity, as you do when importing support packages.
- You cannot combine the installation of different enhancement package versions for SAP software based on the ABAP™ programming language. You can have just one enhancement package version in the SAP software.
- After you have installed functionality from an enhancement package, you cannot reverse the installation. If you are not sure if you want to leverage dedicated functionality, use a sandbox system to explore the new functionality.
- After you have activated a business function using the switch framework, you cannot reverse the activation.
- If you have an add-on installed in your software, ask your add-on provider whether it is compatible with the SAP enhancement package you are planning to install. See SAP Note 1226284 for details about SAP add-ons.

For detailed information on how to install SAP enhancement packages, see "Further Information" below for links.

Plug-In for SAP R/3 Software

New and extended interfaces for integration between SAP ERP 6.0 and other SAP Business Suite applications are no longer delivered with the plug-in for SAP R/3 software. The SAP ERP Central Component 6.0 component contains all integration interfaces that were previously delivered in the plug-in.

Upgrade Paths for Unicode

For all SAP Business Suite applications, a Unicode conversion is mandatory for those customers using MDMP or blended code pages. However, some organizations may want to perform a Unicode conversion to provide future support for languages with different code pages – for example, for users in Asian or eastern European countries.

Note: SAP recommends that you perform a Unicode conversion for all SAP Business Suite 7 applications. The previous SAP technologies have become obsolete for a variety of reasons – for example, they do not enable proper communication with Java-based applications. For details of the requirements to convert to Unicode, see the following SAP Notes:

- SAP Note 73606: "Supported Languages and Code Pages"
- SAP Note 745030: "MDMP – Unicode Interfaces: Solution Overview"
- SAP Note 79991: "Multilanguage and Unicode Support of SAP Applications"
- SAP Note 838402: "Problems within Non-Unicode System Landscapes"
- SAP Note 1322715: "Unicode FAQs"
- SAP Note 1358929: "Depreciation of SOA Features with Non-Unicode Backend"

For most ABAP-based SAP applications, it is possible and recommended to combine an upgrade with the Unicode conversion. For further information, see SAP Note 928729.

More details on procedures for performing a Unicode conversion with an upgrade to the newest SAP software are provided in the SAP notes listed at the end of this document (see "Further Information"). You can find general information about Unicode and SAP Business Suite applications at www.service.sap.com/globalization.

Scheduling an Upgrade

To meet your specific needs, there are many factors to be considered when you develop a detailed upgrade schedule. One concern is to specify the optimal timing and sequencing of the individual upgrade projects. A transition to the latest SAP Business Suite applications is rarely a single project. It is generally a program that covers several productive SAP solutions over several months or even years. But regardless of the extent of the upgrade, the timing of the upgrade is critical given the effort and downtime it involves. Therefore, an upgrade must be coordinated with your IT planning group.

The following factors influence the scheduling of an upgrade:

- Complexity of the existing IT landscape and the number of SAP solutions to be upgraded
- Schedule and overlap with other IT projects such as global rollouts, ongoing innovation projects, or consolidation projects
- Upgrade strategy and project scope

If you have more than one SAP software environment, such as a production environment and a development environment, you must consider the entire environment group. It is recommended that you upgrade your environments in the same sequence in which you transport your modifications.

SAP recommendation: To identify dependencies with other IT projects, you should carry out an inventory of all running projects and confirm that the project timelines are compatible. Schedule an upgrade for a period of low business activity and exploit those periods for the downtime phase.

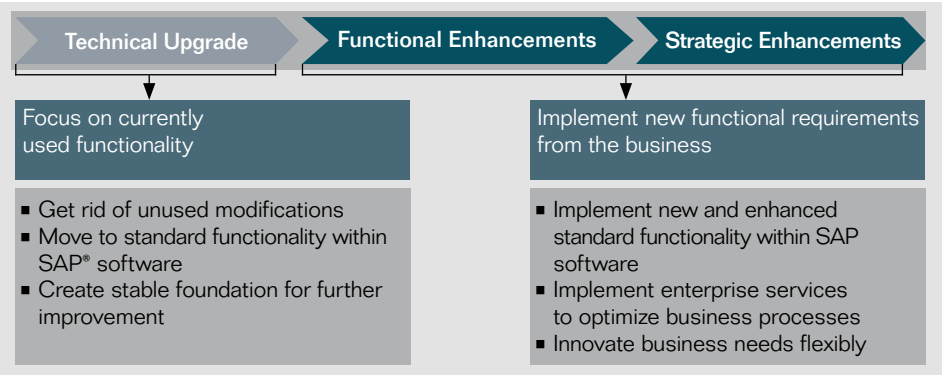


Figure 5: Upgrade Strategies

Determining an Upgrade Strategy

Successfully executing an upgrade requires a well-defined upgrade strategy that encompasses an approach and a project scope based on the circumstances and aims of your organization. The project strategy has a great effect not only on project duration and effort but also on the immediate ROI of the upgrade. The upgrade strategy usually consists of several stages that progressively expand functionality, increase business value, and prepare the organization for the transition to SOA while minimizing risk. This process typically lasts three to five years and consists of three distinct phases: the technical upgrade, functional enhancements, and strategic enhancements (see Figure 5).

Phase 1: Technical Upgrade

This initial phase involves a purely technological upgrade. The major goal is to implement the new software release as the foundation for all subsequent improvements, thus creating the basis for functional and strategic enhancements. The impact of this phase on your business and business processes is very limited:

- Previously used business functions are retained.
- Modifications and custom developments are reduced, which reduces cost of operations and system complexity.
- Unicode conversion may take place.

Note: For SAP CRM 7.0, a technical upgrade from SAP CRM 4.0 or 5.0 must be combined with a functional migration to the new Web client user interface in SAP CRM. The upgrade and migration processes are described in SAP CRM 7.0 upgrade master guide.

Phase 2: Functional Enhancements
Directed toward business benefits, this phase focuses on increasing business value by implementing the most valuable functions of the new software and laying the foundation for future business innovation and improved process automation. During this phase, SAP software modifications and custom developments are replaced with standard SAP software functions. Operational excellence is improved by picking and implementing "low-hanging fruit" – functions that offer the greatest business benefit with the least effort. Even though this phase can be combined in a single project with the technical upgrade, statistics show that more than 80% of SAP customers approach this second phase as a separate project conducted after a technical upgrade has been completed and overall stability achieved.

This phase can be used to activate new business functions provided by SAP enhancement packages. The separation of individual business functions makes it easy to pick first the ones that offer the greatest business value and initiate separate small and fast implementation projects. If you want to find out which business functions suit the current use of your software best, you can take advantage of the new business function prediction offering from SAP. For further information, see SAP Service Marketplace at www.service.sap.com/bfp.

Phase 3: Strategic Enhancements
Phase three involves implementing support for business processes and scenarios that fully exploit new functions and enable SOA. It may include implementing other software and components and is very much dependent on the business needs of your organization. SOA enables you to shorten application innovation lifecycles and implement strategic business enhancements at your own speed.

Managing SAP® ERP 6.0 Upgrade Projects

This book, published by SAP Press, is the consultant's and project team's guide to smooth and successful upgrade projects involving SAP® software. It covers:

- Planning the upgrade: strategy, scheduling, staffing, and cost estimation
- Executing the upgrade: system landscapes, Unicode, testing, and training
- Using upgrade tools: SAP Solution Manager application management solution, an upgrade assistant, and an application-specific upgrade toolbox

Managing SAP ERP 6.0 Upgrade Projects guides you through all phases of the project and gives insight on project management approaches, best practices, possible errors, resources, and tools.

Cost and Effort Estimate

Large organizations running multiple upgrade projects usually make initially a high-level cost and effort estimate for a company-wide upgrade program. This estimate is based on results from a reference upgrade – usually performed on a copy of a typical productive SAP software environment. SAP customers may draw on experience from previous upgrade projects and benchmark data from analysts or SAP to detail the upgrade costs in major cost categories.

After the high-level estimate, cost and effort factors should be considered in detail. Assuming the project scope is only a technical upgrade, some of the indicators and examples used in a cost estimate may be:

- Costs of internal IT and business staff
  - General project and change management aspects (involves about 10% of the total project effort)
  - Time for general project application adjustments (for example, one hour for each simple adjustment of SAP software modifications or custom developments)
  - Testing effort (involves up to 40% of total project effort, depending on the degree of application adjustments and the maturity of existing test procedures)
  - Training effort, if applicable – depends on the number of users affected, the training concept used (classroom versus e-learning), and the extent of functional enhancements

- Costs for external assistance
- Additional hardware costs, if applicable (for example, server adjustments – of the CPU, hard disk, or memory)
- Additional license costs for third-party or SAP software, if applicable and if the costs were not already covered by contracts for SAP Business Suite applications

The high-level cost estimation usually results in a basic cost assumption per business user affected. Analyst reports, such as AMR and Forrester studies, offer number ranges as a guideline.

SAP recommendation: For a detailed cost and effort estimate, the results of a test upgrade and an in-depth system analysis of the level of complexity are recommended best practices. The individual conditions of each solution to be upgraded, specific risk factors, and technical limitations may become potential cost drivers. Therefore, you should establish assumptions for significant cost drivers and apply them to the specific conditions of your existing solution.

Upgrade Experience Database

SAP customers planning an upgrade project often request benchmarking data or project statistics gathered from upgrades completed by other customers. SAP stores this data in a database that includes information about:

- Project duration
- Business downtime
- Reasons for upgrade
- Satisfaction with the upgrade

To learn about the experiences of other customers, see www.service.sap.com/upgradedb.

Project and Risk Management

Once the detailed project-specific cost and effort estimate is completed and approved, you need to determine a governance structure and then allocate the necessary resources. At the end of this preparation phase, you can set up a project kickoff meeting during which the team can agree on other standards, procedures, and milestones. In subsequent project phases, a project manager should conduct progress tracking, budget monitoring, capacity and resource management, efficient escalation management, and communication and change management, as well as coordinate the application and technical teams.

Success Factors

The following factors are critical to the successful management of an upgrade:

- Appropriate governance structure and top management commitment, which leads to the involvement of IT and business units; fast escalation and issue-resolution procedures; alignment with other IT initiatives; and securing required resources
- Sufficient capacity
- Project team with suitable skill set
- Adherence to project standards and guidelines
- Clearly defined project scope and reliable change management procedures, especially for the handling of the code-freeze period (Note: the code freeze is the point in an upgrade project from which the source code cannot be changed until the productive software goes live.)

Standards and Procedures

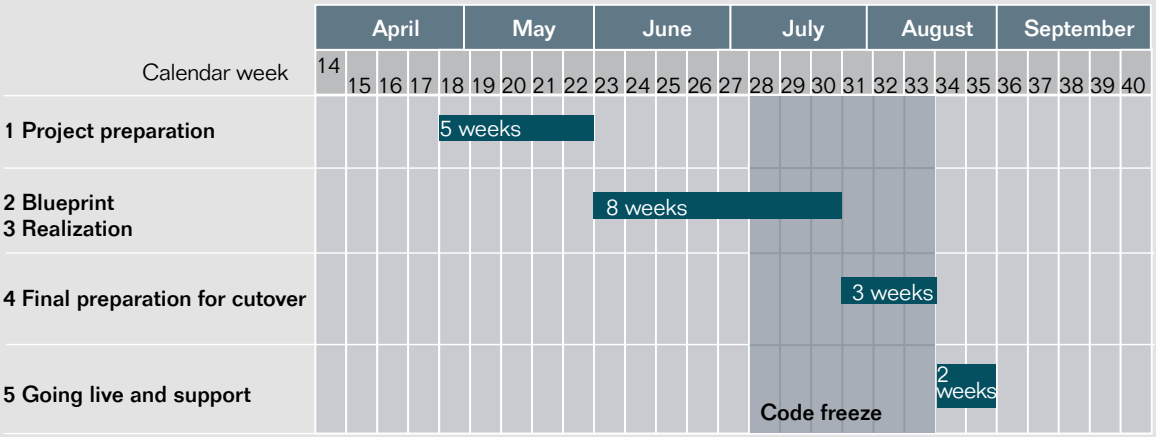
To facilitate the efficient and transparent execution of critical project tasks and overall progress of the project, the following comprehensive standards, procedures, and project elements must be established:

- Standards for project documentation, problem solving, progress tracking, and procedures for escalation
- Project approach and scope (for example, technical upgrade only)
- Roles and responsibilities of the internal and external resources involved
- Setup of project landscape and code-freeze procedures
- Guidelines and procedures for testing and training strategy

SAP Solution Manager and the SAP Upgrade Road Map content can help you define standards and procedures and help you enforce them.

Project Duration and Sequencing

As shown in the SAP upgrade experience database, the average duration of a technical upgrade to SAP ERP 6.0 is about three to five months. Figure 6 outlines SAP's recommendation on how to divide the upgrade effort into different phases for a four-month upgrade project.



Overall project duration: About 4 months
Project characteristics: Assumed start release SAP® R/3® 4.6C; assumed target release: SAP ERP 6.0

Figure 6: Milestone Planning in a Technical Upgrade Project

Technical Upgrade Planning for SAP® Business Suite

This service helps jump-start efforts as SAP customers plan a comprehensive landscape upgrade of their SAP® Business Suite software. The service is specifically intended to support projects that involve more than two software applications. The objective of this service is to enable you to plan the budget for your upcoming upgrade project. The service outlines potential risks and what internal and external competencies you will require to perform the upgrade. Based on the quantified effort estimates the service delivers, you can draw up a reliable budget. Other service deliverables – an analysis of the software landscape to be upgraded and a project plan – provide you with full visibility of the upgrade project.

Technical Upgrade Planning for SAP ERP

This SAP service allows you to evaluate your upgrade project through the combination of remote analysis and a two-day on-site workshop that covers a cost estimate, an estimate of effort required, and a milestone plan for executing your upgrade project. The service results in a "decision document" that can serve as a foundation for a fixed-price SAP proposal for technical upgrade execution.

Upgrade and Migration Assessment for SAP CRM

If your organization intends to upgrade your SAP Customer Relationship Management (SAP CRM) 3.1, 4.0, 5.0, or 2007 application to the latest release of SAP CRM, this service will show the benefits and value in upgrading as well as how the upgrade will help you meet business objectives. The service is designed to help SAP customers prepare and plan for a successful and optimal upgrade.

SAP recommendation: There are various strategies for sequencing the activities involved in an upgrade. To help achieve the best possible maintenance (such as corrections and code changes) of your productive SAP software landscape, SAP recommends that for each productive software system, you perform a test upgrade by building up a "project system" from a copy of the software system. Working with a project system allows you to test-drive the majority of project tasks, such as application adjustments and unit testing, before the actual project landscape (including development and quality assurance software systems) is upgraded. This risk-minimized approach also reduces the code-freeze period.

Upgrade Management Tools and Assistance

To keep your upgrade on track, take advantage of SAP Solution Manager, SAP Upgrade Road Map, and – when needed – expert outside assistance.

SAP Solution Manager

You can use the SAP Solution Manager application management solution to help with:

- Implementing and upgrading SAP solutions
- Implementing SAP enhancement packages
- Monitoring your solution
- Accessing services and support
- Managing project documentation efficiently
- Documenting business processes affected by the upgrade
- Accessing integrated testing and user training functions

Using SAP Solution Manager throughout the lifecycle of your SAP application leads to a faster implementation and more efficient operation of the SAP application by providing all implementation and upgrade content for commonly used standard processes. In addition, projects become more transparent, having up-to-date central project documentation all in one place at any point in time.

> "With SAP Solution Manager we can test system adjustments far more quickly than we used to be able to. Test distribution, performance, checking, and validation are also a lot more transparent now."
>
> **Detlev Voss,** Test Manager, Südwestfalen Energie und Wasser AG

For technical reasons, you require SAP Solution Manager to upgrade your SAP application. During the upgrade process you will be prompted to enter a key for SAP Solution Manager. Without this the upgrade process cannot continue. Therefore, you should install or upgrade to the latest release of SAP Solution Manager.

Note: The scope of your permitted use of SAP Solution Manager functions is defined in your maintenance contract.

Business Process Change Analyzer

You use the business process change analyzer tool in SAP Solution Manager to perform change impact analysis. This can help you find SAP objects that are subject to change when a support package or enhancement package is implemented or other software is modified. The tool analyzes your business processes, provides a list of the technical objects used in each process, and performs a change analysis for these objects. Based on the results list, you can create specific test cases.

Maintenance Optimizer for SAP Solution Manager

The maintenance optimizer tool in SAP Solution Manager is the central tool for planning, executing, and managing the installation of support packages and patches across the SAP software landscape. During the installation of SAP enhancement packages, the maintenance optimizer helps you find and download the necessary software components and sends the information to the implementation tools. When you combine the installation of enhancement packages with the installation of support packages (as SAP recommends), mutual dependencies must be taken into account. These dependencies are handled automatically by the maintenance optimizer.

SAP Upgrade Road Map

The SAP Upgrade Road Map content is delivered with SAP Solution Manager. It provides standard methodology and documentation supporting best practices for project management and the technical and business aspects of a technical upgrade project. Its checklists, templates, and how-to descriptions provide guidelines to the project manager and to the application and technical teams for accelerating and optimizing the primary project activities.

The road map (see Figure 7) has five phases and provides access to further tools, such as the solution browser and the application-specific upgrade toolbox from SAP. SAP Upgrade Road Map 3.2 includes upgrade content for the entire SAP Business Suite software and for SAP NetWeaver. For offline use, SAP Upgrade Road Map is available in HTML format and can be downloaded from www.service.sap.com/upgraderoadmap.

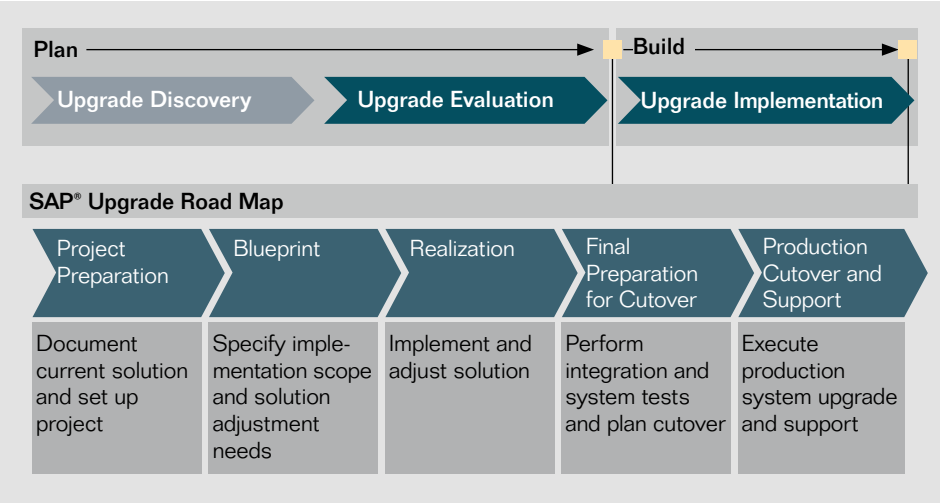


Figure 7: SAP Upgrade Road Map Content

External Assistance

If your internal resources are limited or your staff lacks the skills required for an upgrade to any of the SAP Business Suite applications, coaching and specialized services are available to help you keep your project on time and within budget. SAP surveys indicate that most SAP customers rely on some external assistance to achieve the best outcome for their upgrade projects. Figure 8 shows the proportion of customers who use external assistance in the various areas of an upgrade.

Besides tailored expert services, SAP supports its customers with holistic engagement concepts such as the SAP Safeguarding for Upgrades portfolio of services and upgrade coach services. With the coach services, an SAP coach experienced in all aspects of project management and technology assists you with your upgrade.

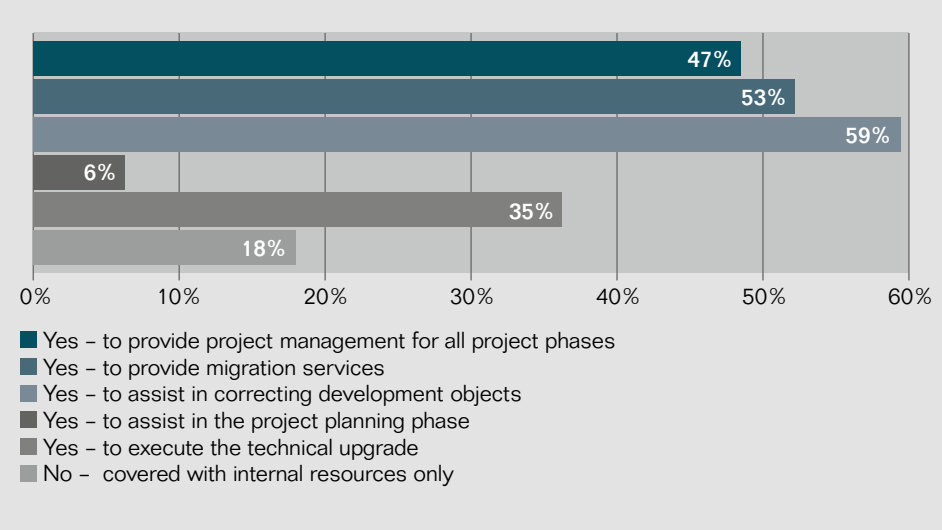


Figure 8: Customer Use of External Assistance for an Upgrade

EXECUTING AN UPGRADE

MEET THE CHALLENGES SUCCESSFULLY WITH TESTED RECOMMENDATIONS

The improved technology that SAP introduced with the upgrade to SAP R/3 Enterprise software makes upgrading considerably easier. This applies to all SAP Business Suite applications. According to recent results from the upgrade experience database SAP maintains, current procedures for upgrading to SAP ERP 6.0 meet or exceed customers' expectations 94% of the time. Nevertheless, you and your organization must be prepared for challenges in each project phase to help keep your upgrade running smoothly.

A survey conducted by SAP reveals which areas are perceived to be major challenges during the upgrade implementation phase and what percentage of survey participants found them particularly challenging:

- IT infrastructure adjustment (39%)
- Downtime minimization (54%)
- Application and modification adjustments (48%)
- Efficient testing (64%)
- User training (39%)

This section provides details, best practices, and SAP recommendations for each of these areas.

IT Infrastructure Adjustments

The SAP upgrade experience database shows that 40% of SAP customers do not need to adjust their hardware configuration for an upgrade. However, in most cases they do find it necessary to make adjustments to their IT infrastructure. These adjustments may include resizing the application server, deploying new front-end components, making network adjustments to maintain system performance, upgrading or migrating the operating system and database platform, and converting to Unicode.

Resizing the Application Server

You should check to see whether you have sufficient hardware resources, such as CPU, main memory, disk space, and swap space. For more information about sizing, see SAP Service Marketplace at www.service.sap.com/sizing. The sizing guidelines provide information on how to perform a delta sizing for technical upgrades (without functional extensions).

For new releases of SAP Business Suite applications, SAP provides details of delta-sizing requirements in SAP Notes. SAP also provides Quick Sizer, a free tool to help you get an initial sizing assessment. As a rule of thumb, with each new release of SAP ERP, the demands on hardware for the application server increase about 10%. Upgrading to SAP ERP 6.0 from start release SAP R/3 4.6C increases the demands on application server memory by 55% and on the application server CPU by 22%. SAP CRM 7.0 is a much-optimized release and requires fewer resources, as compared to SAP CRM 2007, in several key processes. For example, in the sales-order creation process, under internal test conditions database load was 20% less. Application server and memory requirements remain almost constant.

Deploying New Front-End Components

SAP recommends you use and deploy the latest release of its GUI, which is downward compatible with previous SAP applications. To run the latest SAP GUI version, you may need to upgrade hardware or the operating system of user PCs.

With SAP Business Suite 7, the application user interfaces have been harmonized. The visual design ("signature design") provides a common look and feel for the standard SAP clients, which include:

- SAP NetWeaver Portal component
- SAP NetWeaver Business Client software
- Web client user interface in SAP CRM
- SAP GUI for Windows

The ABAP programming language, commonly used within the Web Dynpro development environment, is the standard UI technology for all new user interfaces in SAP Business Suite 7 applications except for SAP CRM, which has its own Web client user interface framework technology. As of SAP CRM 2007, the SAP GUI is no longer the client for accessing functions in SAP applications. It is replaced by the new Web client user interface in SAP CRM (although SAP GUI is still required for system administration functions and maintaining application customizing).

For more details of user interfaces in SAP Business Suite, see the Wiki at: www.sdn.sap.com/irj/scn/wiki?path=/display/Found/Simplified+User+Experience+in+SAP+Business+Suite.

Adjusting the Network to Maintain System Performance

To avoid performance bottlenecks after an upgrade to SAP Business Suite applications and help keep your system performing as well or better than before, SAP has published *Front-End Network Requirements for SAP Business Solutions.* This white paper summarizes key recommendations for an optimized network configuration. It includes requirements for all individual SAP applications, such as the Web client user interface in SAP CRM and SAP NetWeaver Portal. However, it is strongly recommended that you conduct measurements on your system to perform adequate network sizing.

Upgrading the Operating System and Database Platform

This is a potential prerequisite for performing a technical upgrade. Some customers see the upgrade project as an opportunity to change their operating system or database vendor to reduce their cost of operations.

Converting to Unicode

If you are converting to Unicode during the going-live phase of the upgrade project, you need to consider additional sizing requirements, such as those described in relevant SAP notes (see the section "Further Information"). The notes also provide reasons for a Unicode conversion.

Technical Deployment

With the release of SAP R/3 Enterprise software in 2003, SAP significantly improved its upgrade procedures by introducing system switch technology. Today this technology is used for all SAP Business Suite applications based on the ABAP programming language, as well as for Java-based applications.

Benefits of System Switch Technology

With this technology, you can "switch" from one release of an SAP software application (for example, an older release of SAP R/3) to a target release level (for example, SAP ERP 6.0) in a one-step procedure. In contrast to migration techniques, the switch technology adjusts the new SAP software, the underlying database, and the related data structure in an "in-place" procedure without moving data outside the database. System switch technology performs in the uptime phase major activities that had to be performed during downtime with previous upgrade technology. For SAP ERP 6.0, for example, this reduces the average "technical downtime" of an upgrade – which averages about eight hours – by over 50% compared to previous upgrades from releases of SAP R/3 to SAP R/3 4.6C. Because the central component of SAP ERP remains stable, the technical upgrade is much more predictable and simpler than upgrades to previous SAP R/3 releases.

Enhancement Package Installer

The enhancement package installer tool builds on the mature, stable, and optimized system switch procedure to provide an improved user experience through its intuitive guided procedure. This helps streamline the installation process. SAP recommends that you use the latest version of the enhancement package installer, which is available on SAP Service Marketplace.

To minimize the effort of installation and testing, SAP recommends you apply enhancement packages and support packages at the same time, that is to say, in one queue.

For more information on SAP enhancement packages, see "Further Information" below for links.

Minimizing Downtime

Total downtime is divided into technical downtime and business downtime.

SAP® GoingLive™ Functional Upgrade Check Service

This service can help you avoid unforeseen costs before, during, and after your upgrade:

- During the upgrade, it estimates the need of IT infrastructure adjustments and provides a service plan with recommendations – for example, how to minimize cost-intensive system downtimes.
- After the upgrade, you benefit even further with optimal use of your system resources.

Technical downtime is time during which the software cannot be used productively. It does not include time for such activities as data backups or testing. **Business downtime** is the time, both planned and unplanned, during which the software is not available to users. It includes technical downtime plus the time necessary for, for example, data backups and final tests. You can reduce technical downtime by:

- Choosing a "downtime-minimized" strategy instead of a "resource-minimized" strategy (determined by the preconfiguration mode during the technical upgrade; for details, refer to the upgrade guide for each application)
- Doing a preupgrade cleanup of database tables affected by data conversion activities during the downtime
- Using the SAP transaction code for incremental table conversion, ICNV, during uptime for tables with an altered structure (the system switch upgrade enables you to use transaction ICNV for tables that have been modified by support packages, add-ons, or custom developments)
- Upgrading after hardware infrastructure has been reconfigured, enhanced, or resized (if you are performing any of these tasks), which increases the speed of database-related activities in particular
- Having the latest patch of the upgrade tool

The size of the database has no direct impact on the duration of technical downtime.

Total business downtime can be influenced by additional factors such as:

- **Backup strategy** – Depending on the amount of time available, using an online backup instead of an offline backup strategy can further reduce total downtime, while technologies such as split-mirror backup can reduce backup downtime to zero.
- **Postupgrade activities** – The time required to prepare the software for release to users can be increased depending on the languages installed, the other transports you want included in the system, and the duration of user acceptance testing. The upgrade guide for each application describes the follow-up activities that you need to perform after you have upgraded your SAP software. Each SAP software solution is highly individual in terms of its configuration and application data. Therefore, an accurate forecast of total duration of the upgrade and downtime is only possible after you have analyzed the results of a test upgrade with a representative hardware configuration and volume of data.

Application and Modification Adjustments

Application adjustments for a technical upgrade involve making adjustments to:

- SAP software modifications
- Custom developments
- Upgrade (delta) customizing for existing business processes and standard SAP software functions
- Interfaces or connected SAP applications and third-party products

Using a project (test-drive) software system, you can readily identify all relevant SAP software modifications and necessary adjustments. This will help you minimize the time it takes to make the actual adjustments in the development software system.

SAP enhancement packages minimize the need for application adjustments, since new functions can be selectively activated with very limited impact on the application in use. Building on a stable core provided by the enhancement packages significantly reduces the need for application adjustments.

Application-Specific Upgrade Toolbox

The application-specific upgrade toolbox can help you with all postupgrade activities. When you upgrade SAP® software, in addition to the actual technical upgrade, you often have to perform additional application-specific steps before and after the upgrade. The toolbox enables you to recognize the necessary steps and perform them in the software in a controlled manner. The toolbox is integrated with the upgrade GUI and can be accessed from the SAP Upgrade Road Map content (www.service.sap.com/upgraderoadmap).

Adjustments to SAP Software Modifications

The upgrade process replaces modified SAP objects with standard SAP objects. Modifications that are still needed after the upgrade must be adjusted. You can readily identify and handle all relevant SAP software modifications as well as related database and data structure changes by using the tools SAP provides for modification adjustment.

Adjustments to Custom Developments

In contrast to modified SAP objects, custom software developments are not directly affected by the technical upgrade process. However, since these custom developments are embedded in other SAP objects and often reference standard objects that might have changed during the upgrade, they also require adjustment activities. SAP release notes are the primary information source for identifying if and how much custom code must be changed to remain compliant with the standard functions provided in SAP Business Suite applications. These adjustments can be performed using standard SAP development tools. Furthermore, SAP offers a custom development optimization package to help you handle custom developments effectively during an upgrade and over the entire solution lifecycle.

SAP recommendation: If SAP software modifications and custom developments are no longer in use, you should eliminate them during the application adjustment activities in the development software system to decrease future maintenance costs. SAP statistics show that many custom developments and reports are not used in any case. SAP uses standardized tools – as part of the quick upgrade evaluation service, for example – to analyze system-specific conditions. This helps you assess the impact of the upgrade and provides a reliable foundation for a cost and effort estimate.

Upgrade Customizing for Existing Business Processes

In most cases, there is no need to change customizing settings for existing business processes after an upgrade. However, in certain areas, specific customizing adjustments may need to be performed to help keep existing business processes and standard SAP functions running properly. In this case, the necessary customizing adjustments can be highlighted in the implementation guide for upgrade (delta) customizing if desired (see the section "Further Information"). With the upgrade, some transactions may become obsolete, replaced by new functionality. Information about further application adjustment requirements is collected and delivered to SAP customers via the application-specific upgrade toolbox.

Adjustments to Interfaces or Connected Applications

Since certain business processes run across multiple software applications or use third-party products, it is important to document all interfaces prior to the upgrade so they can be checked during the upgrade project. For SAP CRM, SAP Note 1037748 describes how to display fields in the new Web client user interface in SAP CRM that were enhanced in a tool called the easy enhancement workbench.

Testing

Thorough testing is critical to minimizing the risk of business disruption in any SAP project, even in purely technical upgrade projects. Based on results from the upgrade experience database, 74% of respondents claim testing is a major challenge in upgrade projects.

The need for and the effort involved in testing is determined by the level of application adjustments and the functional scope of the project. The effort can be reduced through good organization and careful preparation. The focus of testing in upgrade projects should be on core business processes including interfaces, forms, authorizations, and developments. The manual effort and user involvement in testing can be reduced by developing comprehensive procedures and making existing business processes transparent. However, drastically reducing the time and money spent on testing – or neglecting to implement adequate testing standards and procedures – can jeopardize critical business processes. Often, insufficient transparency of critical processes or an incomplete test catalog prevents SAP customers from performing accurate testing.

SAP provides tools for planning and executing tests in a streamlined and cost-efficient manner to help you strike the balance between high-quality testing

and affordable effort. SAP Solution Manager provides integrated access to a test organizer and extended computer-aided test tools. For example, it can help organize test cases and provide transparency on available manual or automated test cases by documenting the cases according to major business processes. These test cases can be used for unit tests and to define test plans for regression and integration testing in the upgrade project. SAP Solution Manager can also reduce manual testing effort considerably and help guarantee high-quality testing results and transparent test progress even beyond the SAP software upgrade. Test automation, especially for regression testing (which is relevant when applying support packages for SAP applications), can be a significant testing accelerator and contributor, reducing manual testing effort by up to 40%.

SAP recommendation: For SAP software upgrade projects of about four months' duration, at least three weeks of that time should be dedicated to regression and final integration testing. If you need to build up test systems or other nonproductive systems more often, the SAP Test Data Migration Server software can help you maintain consistent and high-quality test systems by minimizing the hardware investment. In addition, partner tools and dedicated SAP service offerings can help optimize the entire test management process. (For details, see www.service.sap.com/upgradeservices.)

User Training

As with testing, the user training effort very much depends on the upgrade's functional scope and the extent of application adjustments. The effort involved also depends on your company's organizational readiness to deal with this topic, for example, by using accurate and complete training material.

A purely technical upgrade has limited impact on the interfaces employees are using. Where the source release is SAP R/3 4.6C or higher, an upgrade to SAP ERP 6.0 will barely affect users, since SAP ERP 6.0 employs the same user interface. For releases below SAP R/3 4.6C, the impact could be considerably higher because some crucial SAP transactions were redesigned in SAP R/3 4.6C. With SAP CRM 7.0, you may need to migrate to a new user interface depending on the upgrade source release; the new Web client user interface in SAP CRM was introduced with SAP CRM 2007.

SAP recommendation: For a cost-effective execution of delta training for users, SAP suggests investigating alternatives to standard classroom training – for example, employing a train-the-trainer concept to multiply knowledge provided to users via business process experts in a cascading process. If there are only limited user interface changes but a high number of users worldwide who need training, an e-learning approach could provide more streamlined training. You can find details of the courses offered for SAP Business Suite applications at www.sap.com/services/education/index.epx. For an upgrade to SAP ERP 6.0, the upgrade course finder helps you locate courses that train your project team to introduce employees to SAP ERP: www.sap.com/services/education/catalog/erp/coursefinder.epx.

SAP offers e-learning solutions and a documentation tool integrated with SAP Solution Manager to provide methodology support and expert guidance to suit your specific needs.

TOMORROW'S SOLUTION TODAY

WHY PUT OFF ADVANTAGES AN UPGRADE OFFERS YOUR ORGANIZATION?

SAP Business Suite 7 applications provide great potential for improving your current business operations, expanding your current functionality, and helping you innovate to meet changing business requirements. Current through 2015, the latest releases of the SAP Business Suite applications help establish a stable, long-term IT platform that minimizes risk and maintenance, enabling your organization to keep up in a dynamic and competitive business world.

Satisfaction with SAP software upgrades has increased significantly over the past years thanks to the robustness and stability of the core applications, improvements in SAP upgrade technology, and the assistance SAP provides in all areas of an upgrade. Sensitivity to the potential challenges of an SAP software upgrade and knowledge of how to master these challenges by applying best practices and establishing standards and procedures should make the transition to the latest applications of SAP Business Suite 7 and the related SAP enhancement packages smooth and straightforward. Thus, there is little reason to postpone an upgrade. Now is the time to start maximizing the benefits of your SAP investment.

Key Messages for IT Decision Makers

An upgrade to the latest release of an SAP Business Suite application including its respective enhancement packages offers significant advantages for your organization in several areas if you prepare for it appropriately:

- **Wide-ranging benefits** – The new software provides a stable, flexible foundation with a wealth of new features and functions that maximize your existing SAP investment. However, do not expect to find a single decisive factor to justify the upgrade. Instead, take a holistic approach and analyze the wide range of benefits an upgrade can bring to various areas of your organization.
- **Business-driven justification** – Identify your crucial business requirements and the aspects of your business model that could change or be improved, then map your needs to the functions available in SAP Business Suite 7 applications. The tools and services offered by SAP can help you identify the concrete benefits of the upgrade.
- **Inclusive evaluation process** – There is potential for both business units and IT departments to derive great value from SAP Business Suite 7 applications. Gain cooperation and develop a consultative relationship between these areas, and weigh opportunities against potential risks.
- **Coordination with IT strategy** – Executing SAP software upgrades has become much more straightforward and predictable in recent years. However, you should make sure an upgrade fits your overall IT strategy and does not conflict with other IT projects.

Messages for Project Managers and Technical Project Leaders

The following are key messages for project managers and technical project leaders involved in an upgrade project:

- **Take upgrades seriously** – Plan and manage upgrades as carefully as you do other SAP projects by establishing comprehensive project standards and procedures. SAP Solution Manager can help you plan and manage upgrades as well as the installation of SAP enhancement packages.
- **Prepare your software** – Clean up modifications and perform selective archiving. This can considerably reduce the effort of an upgrade.
- **Apply best practices when installing SAP enhancement packages** – Include enhancement packages in the upgrade, install only selected parts of the enhancement packages, and install them together with a support package stack.
- **Test the upgrade** – Prepare by performing at least one test upgrade in the early planning phase to identify potential risks, technical challenges and limitations, and cost drivers.
- **Take a multistep approach** – Perform a technical upgrade first; implement new functions or business innovations in subsequent projects.
- **Leverage improved upgrade technology** – Be aware that upgrading to the latest releases involves significantly lower impact, less effort, and shorter downtime than upgrades to previous releases of SAP Business Suite software.
- **Plan comprehensive testing** – Do not underestimate the effort involved in testing. Testing effort will be determined mainly by the need for application adjustments and the functional scope of the upgrade.
- **Train users** – The need for user training depends on how much new functionality is implemented. Consider using alternative training concepts such as e-learning or a train-the-trainer approach.
- **Ask for expert help when needed** – Consider using external assistance, including offerings from SAP, to complement your internal resources in areas where you are uncertain – for example, Unicode conversion – rather than jeopardize the project's progress.

FURTHER INFORMATION

The resources outlined in this section provide more specific, detailed information on upgrading to SAP Business Suite 7 applications and implementing SAP enhancement packages. Most of the online resources listed in the tables below take you to SAP Service Marketplace, which can be accessed at www.service.sap.com.

Upgrade Competency Centers

The upgrade competency centers in the Asia Pacific Japan (APJ); Europe, Middle East, and Africa (EMEA); and North and Latin America regions are centers of expertise for customer upgrades. They strengthen the upgrade support within the regions. It is their mission to drive a coherent set of upgrade-focused products, tools, and services to support customers and partners. The upgrade competency centers in each region can assist in a quick start on an upgrade project for the SAP® ERP 6.0 application and help with any topics concerning SAP Business Suite software or SAP enhancement packages. Contact the upgrade competency center closest to you:
APJ: upgradeccapj@sap.com
EMEA: upgradecc@sap.com
Latin America: upgradeccla@sap.com
North America: upgradeccna@sap.com

Overview of the Most Important Information Resources

Topic	Further Information Sources
Comprehensive information on the upgrade topic that taps the following resources: ▪ News ▪ Brochures and presentations ▪ Upgrade services ▪ Upgrade tools ▪ Application-specific upgrade information ▪ Regional upgrade information	Upgrade Info Center at www.service.sap.com/upgrade
Upgrade tools	www.service.sap.com/upgradetools
Services provided by SAP for all upgrade phases, addressing all business needs across SAP® Business Suite applications	www.service.sap.com/upgradeservices
Reference and collaboration resource consisting of the SAP Developer Network community, the Business Process Expert community, and the SAP BusinessObjects™ community	SAP Community Network at www.sdn.sap.com
Web-based documentation for all SAP solutions	SAP Help Portal at help.sap.com

Identifying the Value Proposition

Topic	Further Information Sources
Maintenance timelines for the SAP® Business Suite 7 applications	SAP maintenance strategy: www.service.sap.com/maintenance
Overview of SAP Business Suite 7 applications and enhancement packages	Overview of SAP Business Suite: www.service.sap.com/businesssuite Overview of SAP Business Suite 7 Innovations 2010: www.service.sap.com/innovations2010 Application overviews: ▪ SAP ERP: www.service.sap.com/erp ▪ SAP Customer Relationship Management (SAP CRM) application: www.service.sap.com/crm ▪ SAP Supply Chain Management (SAP SCM) application: www.service.sap.com/scm ▪ SAP Supplier Relationship Management (SAP SRM) application: www.service.sap.com/srm ▪ SAP Product Lifecycle Management (SAP PLM) application: www.service.sap.com/plm ▪ SAP NetWeaver® technology platform: www.sdn.sap.com/irj/sdn/netweaver Enhancement packages: ▪ SAP ERP: www.service.sap.com/erp-ehp ▪ SAP CRM: www.service.sap.com/crm-ehp ▪ SAP SCM: www.service.sap.com/scm-ehp ▪ SAP SRM: www.service.sap.com/srm-ehp ▪ SAP PLM: www.service.sap.com/plm-ehp
SAP release strategy	www.service.sap.com/releasestrategy
SAP solution road maps	Customized road maps published by SAP based on customers' industry, SAP software landscape, and project phase: www.service.sap.com/roadmap
Application-specific upgrade information	▪ SAP ERP: www.service.sap.com/upgrade-erp ▪ SAP CRM: www.service.sap.com/upgrade-crm ▪ SAP SCM: www.service.sap.com/upgrade-scm ▪ SAP SRM: www.service.sap.com/upgrade-srm ▪ SAP NetWeaver: www.service.sap.com/upgrade-nw
Upgrade planning services	Quick upgrade analysis for: ▪ SAP ERP ▪ SAP CRM ▪ SAP SRM
Easy discovery of relevant SAP enhancement package functionality	Business function prediction: www.service.sap.com/bfp

Implementing Support for End-to-End Processes

Topic	Further Information Sources
Representation of end-to-end processes, mapped to customer strategies	www.sap.com/solutions/executiveview/index.epx
Implementation content for end-to-end processes	Scenario and process component list, accessible for SAP customers and partners on the SAP® Service Marketplace extranet at www.service.sap.com/scl
End-to-end processes wiki	https://wiki.sdn.sap.com/wiki/display/LivLib/All+End-to-End+Processes

Assessing Impact of an Upgrade on Existing Solution

Topic	Further Information Sources
Overview of technical aspects of the upgrade	*Transition and Upgrade to SAP ERP*: SAP standard presentation
Technical prerequisites and limitations of SAP® Business Suite applications	Product availability matrix: www.service.sap.com/pam
Need for Unicode conversion for SAP Business Suite applications	Unicode: www.service.sap.com/unicode
Availability of country versions of the SAP ERP application	Localization: www.service.sap.com/localization
Compatibility issues with other SAP applications, supported business scenarios, and processes	Scenario and process component list: www.service.sap.com/scl
Assessing the impact on other software in your landscape	SAP upgrade dependency analyzer: www.service.sap.com/uda
Upgrade services	Technical upgrade planning for SAP Business Suite Technical upgrade planning for SAP ERP

Estimating Costs and Effort

Topic	Further Information Sources
Consider benchmark information for project duration and project effort in preparing for final cost and effort estimation	Upgrade experience database: www.service.sap.com/upgradedb Enhancement package experience database: www.service.sap.com/ehp-db
Upgrade services	▪ Upgrade and migration assessment for SAP® Customer Relationship Management: Overview ▪ Upgrade assessment for SAP Supplier Relationship Management: Overview

Managing Upgrade Projects Successfully

Topic	Further Information Sources
Project plan, standards, and guidelines	SAP® Upgrade Road Map content: www.service.sap.com/upgraderoadmap
SAP Solution Manager application management solution as project documentation tool and basis for advanced lifecycle management	help.sap.com > *SAP Solution Manager*

Executing Upgrade with IT Infrastructure Adjustments

Topic	Further Information Sources
SAP® tools for the technical execution of an SAP software upgrade	▪ SAP upgrade tool and graphical user interface (GUI) for the ABAP™ programming language: SAPup/SAPjup ▪ Application-specific upgrade toolbox
Update of desktop PCs for new SAP GUI	SAP GUI: www.sdn.sap.com/irj/sdn/sap-gui
Requirements for and impact on network bandwidth	Network sizing guide: *Front-End Network Requirements for SAP Business Solutions*
Application server resizing for the SAP ERP application	As a rule of thumb, servers must be resized about 10% for each later release. In the SAP Notes tool, see these SAP notes on delta sizing for previous releases of SAP ERP software at www.service.sap.com/notes: ▪ 323263 (source release SAP R/3® 4.6C) ▪ 517085 (source release SAP R/3 Enterprise 1.10) ▪ 752532 (source release SAP R/3 Enterprise 2.00) ▪ 778774 (source release Enterprise Core Component 5.00) ▪ 901070 (source release Enterprise Core Component 6.00)
Information on hardware sizing and Quick Sizer for all SAP Business Suite applications	Sizing guidelines: www.service.sap.com/sizing
Unicode conversion and related impact on sizing	SAP Note 79991: "Multilanguage and Unicode Support of SAP Applications"
Implications for operating system and database	Product availability matrix: www.service.sap.com/pam
Unicode hardware sizing	SAP Note 1139642: "Hardware Requirements in Unicode Systems"
SAP GoingLive™ Functional Upgrade Check service	www.service.sap.com/goinglive-fu

Performing the Technical Deployment

Topic	Further Information Sources
Upgrade guides, upgrade master guides, component upgrade guides, and migration guides	Comprehensive technical documentation, including installation and upgrade guides for all SAP® Business Suite applications and industry solutions: www.service.sap.com/instguides
Enhancement package installation	How to install SAP enhancement packages: - *How to Install Enhancement Package 5 for SAP ERP 6.0: A Practical Guide* - *How to Install Enhancement Package 1 for SAP CRM 7.0: A Practical Guide* - *How to Install Enhancement Package 1 for SAP SCM 7.0: A Practical Guide* - *How to Install Enhancement Package 1 for SAP SRM 7.0: A Practical Guide* SAP Notes: ■ 1306080: Installation of SAP Enhancement Package 1 for SAP CRM 7.0 ■ 1334812: Installing SAP Enhancement Package 1 for SAP SRM 7.0 ■ 1334545: Installation of SAP Enhancement Package 1 for SAP SCM 7.0

Handling Other Technical Considerations

Topic	Further Information Sources
Technical prerequisites for using the SAP® Solution Manager application management solution for generating the installation key for setting up an actual application solution landscape	SAP Note 805390: "SAP Solution Manager Is Required for SAP Software"
Upgrade and migration guide for the new Web client user interface in the SAP Customer Relationship Management (SAP CRM) application	■ SAP CRM 7.0 upgrade master guide ■ SAP Note 1118231: "Supported User Interfaces for SAP CRM"
Unicode conversion and upgrade	■ SAP Note 928729: "Combined Unicode Conversion and Upgrade" ■ SAP Note 959698: "Twin Upgrade and Unicode Conversion"
Unicode-related downtime optimization	SAP Note 857081: "Unicode Conversion: Downtime Estimate"
Identification of required software components to be upgraded in order to use specific enhancements	SAP Note 1324838: "Enhancement Package 5 for SAP ERP: Required Software Components"

Conducting Testing and User Training

Topic	Further Information Sources
Analysis and adjustment of SAP® software modifications and custom developments	Quick upgrade analysis service and technical upgrade planning service: www.service.sap.com/upgradeservices SAP software release notes: www.service.sap.com/releasenotes
Application adjustments and upgrade customizing	Use the SAP implementation guide – upgrade customizing (Note: This is not a document but a system tool that is installed and handled by the system administrator.)
Additional application adjustments	▪ SAP Note 623723: "Upgrade: Application-Specific Problems" ▪ SAP Note 1000009: "Application-Specific Upgrade Toolbox 2008"
SAP testing tools to execute tests through the upgrade and afterward	SAP testing tools: www.service.sap.com/upgradetools
Details of courses and education offerings from SAP	Training catalog for SAP Business Suite applications: www.sap.com/services/education/catalog/index.epx Course finder for upgrades and delta training for the SAP ERP application: www.sap.com/services/education/catalog/erp/coursefinder.epx

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