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SAP Project Management Pitfalls

How to Avoid the Most Common Pitfalls
of an SAP Solution

Jayaraman Kalaimani

Apress®

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SAP Project Management Pitfalls: How to Avoid the Most Common Pitfalls of an SAP Solution

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I would like to dedicate this book to my family

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About the Author

Jayaraman Kalaimani graduated in 1996 from the department of mechanical engineering at the University of Madras. He is an SAP professional with over 20 years of experience in the industry. He has worked with various clients in the United States, European Union, and the Asian Pacific American Coalition with successful ERP implementations, upgrade, and rollout projects. He currently is a Senior Project Manager-SAP at Capgemini in India and a frequent blogger in the SAP Community Network, helping clients to achieve their project management goals.

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Introduction

This book is designed to help you manage SAP implementation projects. It is a compilation of implementation techniques, notes, and tips that I have learned.

Often, the volume of SAP embarrasses me and how the massive structure of SAP adapts to various enterprises is a wonder. Hence, it is easy to get lost in the maze without knowing what to learn and how to implement an SAP project. The objective of this book is to present quick artifacts of implementation software upgrade projects to help you to succeed as a project manager or consultant.

After compiling the information that I had collected into a coherent structure, I was approached by numerous friends and colleagues to share this information with them. Thus came the decision to publish this book. You will find it a valuable source of trustworthy advice given in an easy-to-access format, with direct answers.

This book is directed at project managers and consultants implementing SAP, but is also a valuable tool for the IT/IS department to make decisions with deeper knowledge and understanding of the product.

As you read this book, you will enhance your knowledge of SAP projects through the implementation guides, time-saving tips, and information on the do's and don'ts to keep in mind when implementing SAP projects. Most implementation projects fail due to lack of understanding the technology, lack of skills, lack of seasoned project manager, and/or lack of understanding customer requirements. The SAP project manager is the key person, the captain navigating the ship.

SAP Project Management Pitfalls will help you to understand SAP ERP from an end-to-end perspective, to help you manage ERP implementation projects completely from R/3 and ECC evolution to SAP HANA DB. However, without practicing these steps, it will be of no use. Hence, I recommend that you install SAP IDES (Training/Demo system) to practice exercises, set up projects, create orders, and so on. This will help you to get acquainted with the system.

If you're a beginner, read this book completely and ensure that you run through the system to familiarize yourself with the concepts. Each topic discussed in this book will explain the background info regarding the concepts and processes. You can refer to the SAP website (<https://training.sap.com/us/en>) for any additional information. This book is not a replacement for regular training, but it will help you to understand SAP ERP structure and effective tips provided via the real-time case studies.

CHAPTER 1



Introduction to SAP Enterprise Software

The key objective in project management is to complete a project successfully by avoiding common pitfalls. You're responsible for implementing SAP as a Project Manager or Consultant, by understanding the ERP software from an end-to-end solution perspective. One of the common pitfalls is the lack of knowledge of the software itself. This handy list of 12 common pitfalls will help you to avoid some of the problems that plague SAP implementation projects:

- Lack of basic ERP software knowledge
- Lack of end product vision
- Lack of goals
- Lack of risk management
- Lack of steering committee support
- Lack of proper planning
- Scope is unrealistic
- Poor communication
- Lack of skills
- Lack of milestones, without proper schedule
- Lack of change control
- Unrealistic resource levels

In this chapter, you'll learn about the first common pitfall, Lack of Basic SAP ERP knowledge. This chapter will cover the following areas:

1. Overview of SAP
2. Why ERP?
3. SAP System Architecture and WebAS
4. SAP ERP Solution Overview
5. Key Business Process/SAP Mapping (OTC, P2P)

Overview of SAP

SAP (pronounced ess-aye-pea) is the market leader in the enterprise application software, which has changed the way that clients do business with over 291,000 customers in 190 countries with annual revenue of €17.56 running their business on SAP (as of 2014; source: SAP). SAP's vision is to help the world with technology to improve the living standards. It has adopted best practices since its inception in 1972, evolved into Web-based architecture from the traditional Enterprise client server-based R/3 to the Netweaver-based Enterprise Core Component (ECC). Today, the enterprise applications are accessible in mobile applications. SAP has developed into the next generation mobile platform known as "SAP Mobile Platform" for adapting to new age enterprise mobile applications with flexible user (UX) experience. Whether it is a traditional client-server (R/3), a Netweaver-based Enterprise Core Component (ECC), or a mobile platform using SAP, the best run businesses run SAP. The SAP ERP product has evolved since 1972 based on customer requirements, transitioning from traditional client-server database software to Netweaver-based software (WebAS) with quick access to enterprise information. It has continued to evolve into enterprise mobility applications, analytics, and cloud-based enterprise.

SAP will continue to evolve in the future as it embraces changes with the advent of the SAP® HANA native database. With HANA, customers are creating major breakthroughs that solve complex and intricate problems. SAP® HANA has its footprint in industries including oil and gas, health care, real estate, retail, clinical trials, genetic engineering, biotechnology, R&D in the genome sequencing project, and oncology R&D, touching lives of millions of cancer patients with over 30 industry-specific solutions. SAP is the most exciting ERP product, available today with its robust architecture and a business suite almost for every requirement.

SAP Industry-Specific (IS) Solutions

SAP industry-specific solutions (IS Solutions) addresses almost every business scenario in the world. As you flip through the chapters of this book, you will learn about the product suite, releases with additional features, and the release plan for the HANA database, mobility, and cloud, which will support rapidly changing business requirements.

SAP is an orchestra of technology, business applications, and innovation, developed for the customer. It has been amazing to observe the evolution of the product from R/2, R/3, which indicates simple client-server architecture of the Enterprise Core Component (ECC) on the Netweaver platform with high-performance HANA database. The SAP Netweaver orchestration helps business seamlessly integrate both SAP applications and non-SAP with the middleware component known as "PI," which stands for Process Integration. In a nutshell, SAP is the best enterprise application software, adapting to almost every business requirements with its advanced integration capabilities. It will continue to evolve into mobility and cloud service offerings.

Hence, the architecture is continually changing with improved capabilities adapting to new trends. Today, we talk about quick-in-time data access to the volume of information as analytics, enterprise mobile applications, and enterprise portal. It is all available in the SAP enterprise software, which is integrated application software to help clients' succeed in digitizing 360-degree view of client's end-to-end business operations. The ease of SAP implementation is improving day by day with the advent of many tools such as SAP Solution Manager accelerators with improved methodology such as rapid deployment (RDS), in addition to SAP professional consulting services.

The massive SAP system can be configured in weeks, as opposed to the months and years of previous implementation techniques. You'll be excited to learn all about the techniques, tools, and accelerators to implement SAP software, responding to client requirements. A basic knowledge of the SAP product ecosystem, technical architecture, functional overview with SAP's future trending into HANA, mobility, and cloud will help SAP consultants and project managers to succeed in the endeavor.

Needless to say, if your system is configured correctly, you'll be able to run an SAP system within few months, with optimized consulting requirements. The evolving strategy of SAP will be leveraging the cost-effective cloud-based enterprise solution to quickly run business transactions in no time without having to procure an expensive hardware solution with recurring maintenance costs of the ERP software, hardware, operating systems, and the database. The trend is changing rapidly from hosting the solutions in-house to cloud-based enterprises with SAP's native database, known as "HANA" dB, with high performance guaranteed.

SAP Implementation Partner Expectations

As an SAP implementation partner, project manager, and/or a consultant, you're the most sought-after consultant/project manager in the world, based on the current job market. This trend will continue in the future due to the increased demand for ERP packages. If you're a client, you'll learn the solution offerings that will solve your business problems with faster implementation techniques. As an architect, you'll be able to comprehend the best of the features that SAP offers, to help clients with the simplest solution for complex business problems. It can be a simple "CRM on-cloud," which can be implemented in a few weeks with preconfigured scenarios, or perhaps an ERP solution with a plan to digitize a client's business operations from an end-to-end perspective. The flexible SAP solution integrates with existing mobile applications or legacy if need be, with interoperability. Cloud solutions are flexible and ready-to-use services offered such as "SaaS," software as a service, or hosting the ERP on the cloud platform, "PaaS," platform as a service. The solution architect is responsible for analyzing customer requirements, and for mapping the most appropriate cost-effective solution for the business. Hence, the key aspect of an ERP implementation is to understand the requirements of the business prior to providing a solution.

Most of the clients will need an expert consultant to guide them from the initiation to the successful implementation of the project. Thus, it is imperative for an SAP consultant and/or a project manager to have comprehensive knowledge of SAP Technical (BASIS), Functional (Modules) & Development (ABAP), as well as mobility, HANA DB, and cloud with an overall product ecosystem to succeed as an SAP evangelist in the marketplace. As an SAP brand ambassador, you'll need to have a complete view of SAP as a product, ecosystem, technical architecture, and functionality to implement the product successfully. Also, you should be able to gauge the complexities of client business requirements, by assessment of the required percentage that can be utilized as a standard solution, by leveraging the product to the maximum extent possible.

SAP Roadmap

The SAP's roadmap is to standardize the applications with its robust ERP architecture, by providing consumable services to help clients run their business in less time, thus eliminating year-on-year expensive software development, as well as license and maintenance costs. The advent of Enterprise Core component (ECC) on the SAP Netweaver platform has stabilized the backend with releases ECC 6.0 and above, with the focused changes to the application server (WebAS), and with the expanding solution offering bundle available in SAP with improved features in every release. These enhancements are available as packages known as "EHP" on ECC. With more and more IS-Solutions as add-ons to the ERP suite, this expands the SAP solution bundle. I believe there is no other software in the ERP world that is more exciting than SAP with its unique solution offerings.

The evolution of HANA as the native SAP database with advanced in-memory capabilities has improved overall performance. In simple terms, it helps you read volume of data in less time possible as opposed to the longer query time in a traditional RDBMS, providing advanced analytical capabilities. SAP has transformed itself to provide solutions with HANA as its core database, and this transformation will change the business. For the first time in the history, a software solution provider has transformed the way that we conduct business, instead of the traditional way of business requirements and/or clients driving changes in software applications.

Why Is SAP a Game Changer?

If you analyze the historic evidence of failures, big giants have failed due to lack of innovation after establishing its market. They had not reengineered their products, solutions, and services. As a result, these so-called giants in manufacturing hardware, developing software, database, and/or services failed to innovate, without being able to sustain changes in the customer landscape. Hence, the innovative small players had ventured into the ERP market and captured the market as small-scale desktop vendors to grow larger and larger in developing software applications for the enterprise customers. As you know, the large HW vendors had been replaced with smaller laptop/tablet vendors and this evolved to mobile manufacturers with larger disk space requirements and scalable operating systems to run the most demanding enterprise applications in the mobile platform.

SAP is a software giant that has continuously improved itself as the enterprise game changer, instead of acting like a giant. It listened to its customers, responding to continuously changing requirements. SAP reevaluated itself, thus shedding its image of a giant, and continuously rediscovered itself like a small product vendor. It has shaken itself from R/2, R/3 to ECC and has further evolved into HANA dB from its traditional RDBMS. This is definitely a step ahead into the world of enterprise mobile applications software and cloud enterprise practices. In addition, SAP has provided supplementary tools to implement its solution faster with solution manager (SolMAN) tools; accelerators implement ERP solutions in weeks as opposed to months and years. If you're unable to find a solution in SAP for the client's business requirements, this simply indicates your lack of understanding the requirements and/or the solutions offered by SAP.

Evolution of the Next Generation ERP Suite

You've chosen the right book to comprehend the values of SAP and the common pitfalls to avoid to succeed in the endeavor. It will help you to understand the evolution of the product suite from the past and present with future strategy. As a customer, you will need to analyze changing business requirements to explore different market avenues for the products and services. SAP is in the pursuit of an ERP that will help you achieve the vision of every enterprise. SAP is an ERP software with the offerings spanning into mobility and enterprise cloud. It will help you plan your production schedule, analyzing sales, inventory, and/or customer behavior. You'll be able to check your sales, margin, analyze employee retention, profit margin, balance sheet, and gross profit, and so on.

Someday, it will be possible to run your enterprise completely off-site, sitting in the comfort of your home in Los Angeles or Germany. Also, it will help you in researching alternate fuel technology and measuring the environmental pollution to help the world reduce global warming. The time-space will exist no more; you'll be able to integrate all business operations via cloud-based enterprise connecting all distributed locations across EMEA, North America, and Asia Pacific. There will be no difference between a demand generated in the United States, England, Germany, China or India, as the ERP will be able to scan and integrate products and services across geography.

Furthermore, at some point, SAP will be able to control and monitor an unmanned rocket launched toward Mars, Saturn, and Jupiter. It may be possible to fly an unmanned airplane or automatic cars, and even perform brain surgery with the help of robotics aligned with the SAP HANA dB in health care. It will be possible as the big data can store information with precision, enabled with electronic sensors/gadgets in the consumer electronics industry with services developed at the front-end to deliver a complex business solution. The entire future is mobility and cloud based enterprise architecture, which SAP is ready to change itself despite all challenges.

Indeed, the IT landscape will become leaner and leaner with the ease of maintaining the systems hosted on cloud, virtually leading to zero cost of application maintenance. As an entrepreneur, you'll be able to run all the business operations on-cloud, without much upfront IT investment. The next generation entrepreneurs will be able to procure appropriate SAP services for managing customers and suppliers with innovative products and services. These entrepreneurs will be able to think ahead by innovating their business, instead of getting bogged down by the IT complexities of running the enterprise software. Hence, there will be a continuous improvement along with the ROI generated for customers by running SAP ERP, more than any other ERP in the market.

There will not be upfront and huge investments in IT hardware, software licenses, and database and/or implementation costs, leading to the next generation digital entrepreneurs to begin manufacturing, sales, inventory, and distribution of their products with ease. This transition will take place in the market as more and more mid-tier, small, and new enterprises (SMEs) seek cost-cutting measures to implement business processes. However, as a consultant, you'll be required to develop innovative products and solutions as part of the cloud enterprise. SAP had responded to SMEs with Business by Design software, which are cost-effective solution.

The newer breed of SAP mobility services will increase in providing an ability to the enterprise running entirely on mobile devices. The ease of running an app is recognized throughout the world; hence, it will transform business transactions, as an app-based innovative solution. The ERP app-based enterprise solution will help you track sales, employees, HR functions, production plans, and MRP. The ERP app-based solution will disintegrate complex ERP-centric solutions into the service-based component model, where you'd be able to procure tangible services that you'll need to run a specific business operations, as not every business will need extensive end-to-end ERP software. Indeed, SAP provides it all for small and mid-tier enterprises.

Next time, when you walk into the nearest grocery store or a small or large restaurant, you may want to check the billing application! You may apply for a higher education, or file an insurance claim for your child, or register for an online course, or your doctor may send you SMS about your health checkup routine using SAP ERP mobile application. The RFID integrated with the ERP mobile app will raise an order automatically for replenishing stocks. These are just a few examples of SAP in consumer applications, and this will expand in the enterprise segment for managing inventory using RFID enabled to manage demand and supply with SAP HANA dB at the back-end.

A strategic move into aerospace will provide new avenues of business opportunities for SAP, from avionics to customer service on-board and offline customer services. The software giant has moved its strategy from a large scale enterprise software service provider to the simple, tangible service provider. SAP ERP is scalable, as it provides developers with the ability to build scalable software services based on native ABAP "Webdynpro" programming capabilities and/or external J2EE services that will integrate with core ERP solutions on Netweaver. In a smart home, a refrigerator could be filled by an order from the grocery store whenever stock is low.

Your car might have the adequate security to track, automatic warning solutions triggered through a mobile application, linked to GPS connected to the ERP. This security application can track anywhere real-time, to help you in case of an emergency, anywhere in the world. The predictive analysis in HANA can help in the behavioral analysis of customers. As a developer, you'll be able to do wonders by integrating with several applications such as LinkedIn, Facebook, Twitter, Pinterest, Skype, and WhatsApp to raise sales orders, and enhance customer experience by using voice apps to generate sales order.

Some day, psychologists and psychiatrists might be able to generate analytics of the brain/mind to assess a possible solution to your impending mental problems by harnessing SAP's Big Data known as "HANA." In the consumer arena, as well as in industry, these SAP ERP mobile applications will expand usability to simple and flexible solutions offered to millions of retail end-users first time in the history of software evolution leading into mobility.

SAP Next Gen Mobility Solutions

The mobility and cloud offerings are transforming the industry and the consumers. While writing about the future of SAP mobile app, I was amazed to read about a pregnancy app that helps in tracking the development and helping women coping with depression, released at the Heidelberg University hospital. It's just getting more and more exciting, isn't? The information is getting more transparent, and SAP mobile app is helping an intimate relationship with customers. The intuitive user interface helps you achieve the success with the power of back-end database SAP® HANA.

If you're an aspiring SAP consultant and/or an SAP project manager, or you are contemplating a change in your career, venturing into SAP, there is nothing that can be more exciting than SAP. Learning SAP is fun and exciting as you'd comprehend its journey from the legacy applications to SAP ECC, mobility, and cloud. You'll be amazed to understand how it solves the most complex business.

As an SAP expert, you'd have a role to play in advising clients and the future of mobility and the cloud if you're willing to be part of the enterprise game changer. The SAP HANA DB, mobile, and cloud services will provide you with a plethora of opportunities to excel and innovate as a consultant, architect, and a manager. If you're an existing SAP consultant, it's never too late to learn SAP HANA, cloud, and mobility services. SAP is the present and the future of the ERP world. I'd like to welcome you all to read the technological story of a game changer and be the game changer yourself!

The next generation business suite, known as SAP S/4 HANA, is the current breakthrough in this technology. Your organization will soon be required to upgrade to SAP S/4 HANA, a.k.a. SAP Business Suite 4 SAP HANA platform, to gear up to the challenges to leverage the best ERP business application suite in the world. Are you ready for the change? Your understanding of the ERP software will help you to avoid implementation pitfalls. This, in turn, will help you to succeed in the endeavor of a successful implementation by solving your customer's business problems.

■ **Note** You might have heard this before: SAP AGS was founded in 1972 in Germany by a group of young and talented engineers. They named the company Systemanalyse and Programmentwicklung. Their objective was to address impending problems of integration, thus providing an end-to-end software package that integrated a company's myriad business functions in a manner that referenced best practices. Finally, their idea became a full-fledged product known as Systems, Applications and Products in Data Processing (SAP).

Technology Breakthrough

Gone are the days of developing application software using a traditional database design with expensive hardware and development due to the laborious efforts, large teams, huge implementation costs, schedule, quality, and maintenance involved. In today's market, customers are looking for a quick shrink-wrap product, out-of-the-mill product, one that is up and running instantly in days to implement a solution. With SAP, you can run Order to Cash (OTC) or Procure to Pay (P2P) process of manufacturing, production, manage inventory and sales, track orders, plan and execute warehouse movements, and much more. All of this can be done quickly in a span of two to three weeks, instead of spending years and months in implementing a solution.

The myriad examples of implementations across the globe indicate a transient product in the market, which adapts to the business requirements with preconfigured scenarios, which are ready to run the business. You have a product that can be configured in less than four to six weeks using the Rapid Deployment Solution, "RDS," methodology with preconfigured scenarios provided by SAP. The IS-Solution specific add-ons address industry-specific scenarios such as claims processing for insurance, patient database for hospital management, and/or enhanced supply chains for automotive and consumer products. SAP has reengineered every business process scenario across industries.

In this book, I will explain the basics of SAP architecture and help you to understand the reasons for an ERP implementation and product ecosystem. I will delve into the details of how it works as an ecosystem by helping you to configure your business requirements. The following chapters will help you to gain tremendous insights based on real-time implementation case studies of large & complex projects. I will be candid about project failures, as often these failures have not been discussed. In my view, every failure is a stepping stone to success, and this applies to your professional and personal life as well. These failed projects gave me tremendous insights into possible modes of failures, and what should be averted to achieve success. If you're able to learn the failure modes, this will lead you to success without chasing it.

SAP System Architecture

In this section, you will learn the basic architecture of SAP. It runs on a three-tiered architecture, which is further subdivided into the following layers based on respective functions:

- The Database layer, which hosts the relational database (RDBMS)
- The Application layer, which takes care of the workload allocation process using Work processors (WP)
- The User Interface layer, which is the end-user interface

Figure 1-1 shows you the SAP System Architecture in a three-tier architecture, with a core database such as SAP's native HANA DB, application layer with multiple work processors (WP), which does the workload process, and a presentation layer, which refers to SAP GUI or a mobile interface.

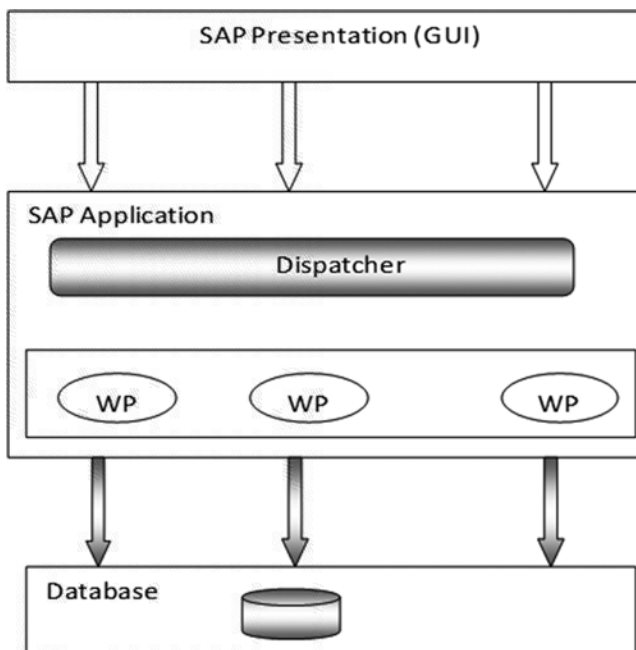


Figure 1-1. SAP System Architecture

The Database server hosts the relational database known as RDBMS, which can be any dB, from ORACLE, Microsoft to SAP’s native HANA DB, and thus this is the storehouse of the client’s data.

The Application server acts like an administrator, and it is responsible for background processing such as printing. It also manages these background requests. The Application server allows *n* number of services to run in a three-tier design.

The Presentation layer hosts the GUI; this is the interface for end users. There can be any number of front end clients to serve as an interface to access SAP. These front end clients will present the SAP screen and data output to end users. This is referred as the SAP GUI, or graphical user interface.

SAP Netweaver Architecture

Now let us understand how these SAP solutions are integrated. The SAP NW application server is the foundation for the entire SAP software stack. It hosts components such as Portal, Business Warehouse, Master Data Management, and so on. SAP NW is a comprehensive platform for development, composition, and maintenance of the enterprise software. All applications such as business process management, data warehouse, OLAP, and extending applications to mobile devices reside on the SAP Netweaver application server, as illustrated in Figure 1-2.

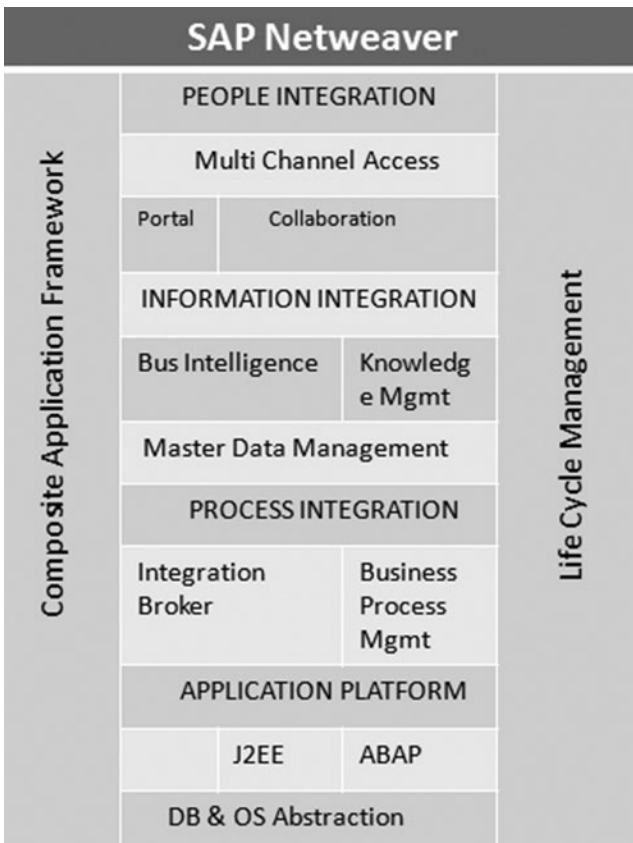


Figure 1-2. The SAP Netweaver Architecture