

# ERP-SAP: A Conceptual Framework

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## Abstract

ERP is used for planning resources [Money, Material, Man power, Machinery and Methods] to get maximum profits with minimum Efforts. For this, all the business functions and processes need to be atomized and integrated.

Thus, SAP is a principal company providing software solutions, while ERP is a software solution provided by the SAP. So this SAP which is ERP software, it is integrated suite of various products which helps larger enterprises adapt a modular approach to enhancing their technical functionality, while also reducing the costs and time associated with software implementations.

This integrated lifecycle set of applications provides you with built-in business expertise, as well as tools and best practices that reduce efforts directed toward testing and customization. This allows you to more quickly deploy new innovations and products, which improves your response to changing market conditions and allows you to better meet your customers' needs.

**Key words:** SAP, SAP Modules, ERP3

## I. INTRODUCTION

ERP (Enterprise Resource Planning) is enterprise wide information systems which consolidate information from various functions/departments of an Organisation.

Here functions means Supply chain Management, Manufacturing, Operations, Customer relationship management, Human resource, Payroll, accounts, finance, Warehouse Management, etc.

Examples of modules in an ERP which formerly would have been stand-alone applications include: Manufacturing, Supply Chain, Financials, Customer Relationship Management (CRM), Human Resources, and Warehouse Management. Whereas **SAP (Systems, Applications and Products)** is a name of a company which offers ERP solution for various industries to integrate information from various functions of that industry under one system.

## II. NOW OUR NEXT QUESTION WHAT IS ERP?

In a large company many systems runs like back office, Sales office Human Resource and management, Account department, Goods stock, Material Management. All things work together to make a company work file, Now ERP is a process which make all this system work together and give best output of it. Means how to take be of human resource and the goods, and there are many other functions of a company to work together and get best of it. SAP is the best ERP software in the world. The main advantage of using SAP as your company ERP system is that SAP has a very high level of integration among its individual applications which guarantee consistency of data throughout the system and the company itself.

### A. There are many ERP in the Market like

- Bann
- Oracle Applications
- J.D.Edwards
- PeopleSoft.

### B. Why ERP?

There are five major reasons why companies undertake ERP.

- 
- Integrate financial Information
  - Integrate Customer Order Information
  - Standardize and speed up manufacturing processes
  - Reduce inventory
  - Standardize HR information.

## III. WHAT IS THE FULL FORM OF SAP?

Systems Applications and Products in Data Processing SAP stands for Systeme, Anwendungen, Produkte in der Datenverarbeitung or in English ' Systems, Applications, and Products in Data Processing'. SAP is the leading Enterprise Information and Management Package used worldwide. The usage of this package makes it possible to track and manage, in real-time, sales, production, finance accounting and human resources in an enterprise. SAP is the third-largest software company in the world which is founded in 1972, The Company now employs more than 22,000 people in more than 50 countries. SAP global headquarters are

located in Walldorf, Germany, and the company is listed on several stock exchanges, including the Frankfurt DAX and the New York Stock Exchange, under the symbol "SAP." SAP America is a subsidiary of SAP AG, the recognized leader in providing collaborative, inter-enterprise software and e-business solutions. A truly global software provider, SAP AG has more than 1000 partners, 22 industry solutions and 10 million users at 30,000 installations around the world. SAP America has contributed significantly to this leadership position and it is the foremost provider of e-business and enterprise software in the United States.

### Definition of SAP

An international provider of comprehensive, enterprise-class information systems with proven success supporting large global manufacturing and distribution enterprise. Systems and Application Products in Data Processing

Fig 1.SAP Logo



It plays a very important role in the field of analyzing, improving and studying various business processes and practices.

### Why SAP?

- Supports all businesses
- User Friendly
- Deployed Globally
- Liabile
- Easy to Process
- Accurate
- Affordable
- Improve Effectiveness

## **IV. HISTORY OF SAP SYSTEMS APPLICATIONS AND PRODUCTS IN DATA PROCESSING GERMAN :**

SAP was founded in 1972 as Systemanalyse und Programmentwicklung by five former IBM engineers in Mannheim, Germany (Dietmar Hopp, Hasso Plattner, Klaus Tschira, Claus Wellenreuther and Hans-Werner Hector). The acronym was later changed to stand for Systeme, Anwendungen und Produkte in der Datenverarbeitung ("Systems, Applications And Products in Data Processing"), SAP is both the name of the Company as well as their ERP Product SAP system comprises of a number of fully integrated modules, which covers virtually every aspect of the business Three systems in 1976 was founded SAP GmbH, the next year its headquarters was moved to Walldorf and since the 2005 annual general meeting the company's official name is just SAP AG. Henning Kagermann became the sole CEO of SAP in 2003.

Systeme, Anwendungen, Produkte in der Datenverarbeitung Founded in 1972 by Wellenreuther, Hopp, Hector, Plattner and Tschira Renamed in 1977 Before 1977: Systems Analysis and Program Development (German: Systemanalyse und Programmentwicklung) developed: R/1, R/2, R/3 "R" stands for realtime data processing and the number 3 relates to a 3-tier architecture: database, application server and client (SAPgui). R/2, which ran on a Mainframe architecture, was the first SAP version.

□ Steps to Strategic ERP Enterprise Resource Planning is evolved through these stages ... Total Company Value Evolution of ERP Create Strategic Value Efficiency and Control Automation 80's R/2 90's R/3 Today mySAP ERP Inter-Enterprise Co-operation Enterprise Resource Planning Collaborative Business

□ For Over 30 Years, SAP Has Been Driving ERP – and They Continue to Do So... 70s SAP Invents Real-Time ERP SAP defines and establishes a new approach to Integrated Standard Business Software. ERP = The Business Software Industry The approach that SAP established becomes industry standard. New competitors enter the market. ERP Rapid Adoption Companies start to adopt ERP on a massive scale.ERP = Old E-Business = New Trends seemed to indicate that ERP was an out-of-fashion model mySAP ERP **E-Business is now seen as an extension of ERP, not a replacement.** SAP is

leading the new industry standard for collaborative business applications. 80s 90s 00s

## V. WHICH IS THE LATEST SAP PRODUCT? MYSAP ERP

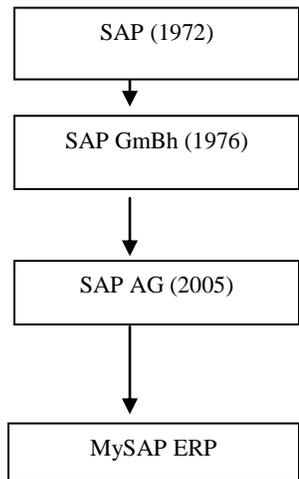


Fig 2. History of SAP

SAP's products focus on Enterprise resource planning (ERP), which it helped to pioneer. The company's main product is MySAP ERP. The name of its predecessor, SAP R/3 gives a clue to its functionality: the "R" stands for real-time data processing and the number 3 relates to a 3-tier architecture: database, application server and client (SAPgui). R/2, which ran on Mainframe architecture, was the first SAP version.

Other major product offerings include Advanced Planner and Optimizer (APO), Business Information Warehouse (BW), Customer Relationship Management (CRM), Supply Chain Management (SCM), Supplier Relationship Management (SRM), Human Resource Management Systems (HRMS), Product Lifecycle Management (PLM), Exchange Infrastructure (XI), Enterprise Portal (EP) and SAP Knowledge Warehouse (KW).

The APO name has been retired and rolled into SCM. The BW name (Business Warehouse) has now been rolled into the SAP NetWeaver BI (Business Intelligence) suite and functions as the reporting module.

The company also offers a new technology platform, named SAP NetWeaver. While its original products

are typically used by Fortune 500 companies, SAP is now also actively targeting small and medium sized enterprises (SME) with its SAP Business One and SAP All-in-One.

Reportedly, there are over 100,800 SAP installations serving more than 38,000 companies. SAP products are used by over 12 million people in more than 120 countries.

SAP holds a partnership with Hewlett-Packard. This partnership will expand around new services linked to NetWeaver and Enterprise SOA (service-oriented architecture). The software infrastructure for business applications developed by SAP is to be upgraded by Hewlett-Packard. One of the services to be upgraded is the Discovery System which was launched by SAP earlier this year. Among other services there are assessment, government and architecture for R3.

## VI. DIFFERENCE BETWEEN SAP ERP and R3

SAP ERP consists of several modules, including utilities for marketing and sales, field service, product design and development, production and inventory control, human resources, finance and accounting. SAP ERP collects and combines data from the separate modules to provide the company or organization with enterprise resource planning.

Although there can be major benefits for customers of SAP ERP, the implementation and training costs are expensive. Many companies experience problems when implementing SAP ERP software, such as failing to specify their operation objectives, absence of a strong commitment or positive approach to change, failing to deal with organizational differences, failing to plan the change to SAP ERP properly, inadequate testing. All these factors can mean the difference between having a successful implementation of SAP ERP or an unsuccessful one.

If SAP ERP is implemented correctly an enterprise can go from its old calculations system to a fully integrated software package. Potential benefits include efficient business process, inventory reduction, and lead time reduction.

The difference is that SAP R/3 has only core modules of FI TR CO MM SD PP while the mySAP.com has core modules & Extended features of ERP as BW,SEM,CRM,APO,etc,

R/3 is SAP ABAP platform, mySAP ERP is a suite involving some of SAP modules (HR, SCM, FIN, PLM, CRM), SAP Netweaver 2004 involves ABAP and JAVA platform and several other integration layers

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MySAP, a product of the German software company SAP, is an e-business software integration tool that delivers content to the user based on his or her role in an enterprise. More than 200 pre-defined role templates are available to provide the user with access to applications and resources that are task-appropriate to his or her communication needs in customer relationship management (CRM), supply chain management (SCM), e-procurement, business intelligence, product lifecycle management, human resources, or financial and marketplace channels. The user works with the SAP applications he or she requires by using a Web browser or Internet appliance to access them through a mySAP Web portal called "Workplace". Access to the mySAP.com Workplace portal can be based on either a per-user or per-number-of-transactions fee model.

## VII. SAP MODULES

SAP R/3 PP MM SD FI CO TR PS WF IS QM PM HR .PP – Production Planning MM – Materials Management SD – Sales and Distribution FI – Financial Accounting CO – Controlling Treasury-Treasury PS – Project System WF – Workflow IS-Industry Solutions QM – Quality Management PM – Plant Maintenance HR – Human Resources



Fig 3.R/3 SAP Modules

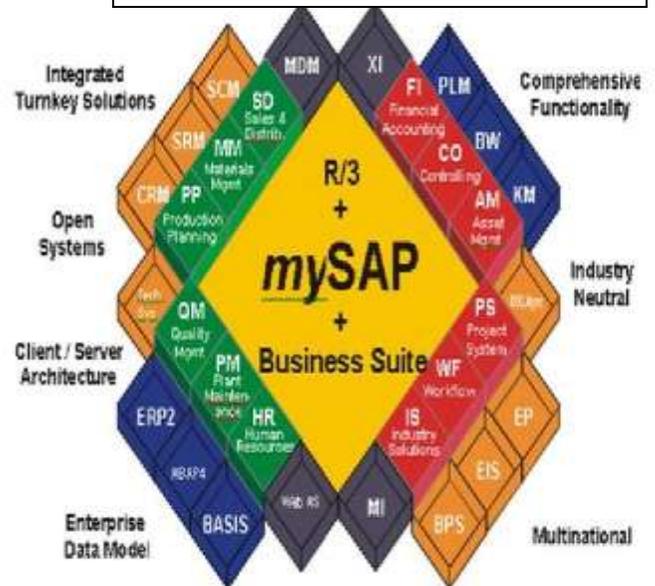


Fig 4.R/3+mySAP+Business Suite

## VIII. VERSIONS OF SAP

Different SAP releases:  
Table 1. Versions of SAP

There are different versions in SAP like 3.0, 3.6, 4.0, 4.6, 4.6c, 4, 7, 4.7ee, 5.0, 6.0, 7.0

SAP Business One 9.0 is easier to customize and extend, offering new development tools, the SAP Business One Studio Suite, including key technical infrastructure enhancements supporting better performance and security compliance. Workflow in SAP Business One is a new platform in SAP Business One 9.0 enabling users to define, customize and execute workflows for key business processes, providing greater process flow transparency, standardization and control across SAP Business One. SAP Business One 9.0 is proudly implemented and supported by Africa's largest and most successful SAP Business One Partner, Bluekey.



Fig 5. Version of SAP

## IX. SAP PRODUCTS

With the passage of time SAP has developed certain other products that tightly integrate with ECC to provide a complete one stop solution for the enterprise. These are known as third dimension products. The following are some of the important third dimension products:

- Customer Relationship Management (CRM)-Provides end to end solution for all your customer front end applications.CRM deals with acquisition of customer to its

final termination.SAP covers Marketing, Sales, Service, ContactCenter, E-commerce, and IT services.

- Supplier Relationship Management (SRM)- SRM includes Supplier collaboration,

Version of SAP	Year of Launch
R/1	1972
R/2	1979
R/3	1992
SAP R/3 Release 4.0B	Release Date June 1998
SAP R/3 Release 4.5B	Release Date March 1999
SAP R/3 Release 4.	6B Release Date Dec 1999
SAP R/3 Release 4.6C	Release Date April 2001
SAP R/3 Enterprise Release 4.70	Release Date March- Dec 2003(mySAP ERP)
SAP ECC 6.0 ERP	Release Year 2005

Supplier Evaluation, Centralized Contract Management, Centralized Sourcing, and Catalog Management.

- Product Lifecycle Management (PLM)- Deals with the complexity of developing a new product. It covers Life-cycle Data management, Program and Project Management, Life-cycle Collaboration, Quality Management, Enterprise Asset Management, Environment, Health and Safety.
- Supply Chain Management (SCM) - Success in today's competitive world depends on how efficiently, quickly, and economically you can deliver goods to your customers. It includes Supply chain planning and collaboration, Supply chain execution, and Supply chain visibility design and analytics.
- Business Intelligence (BI) - Supports Data Warehousing, Business Planning, Business Insights, Measurement and Management, Information Broadcasting, Accelerated Business Intelligence. It is not possible for transaction based systems to handle such huge volumes of data. Therefore, a business data warehouse is built to generate such information. The system is called differently by different organizations. Some organizations also refer it as Decision Support System (DSS).

## X. ADVANTAGES OF SAP

**1. Integration:** Integration can be the highest benefit of them all. The only real project aim for implementing ERP is reducing data redundancy and redundant data entry.

**2. User Friendly:** Once the person gets trained on the working process it makes an ease to work on various modules.

**3. Cost reduction:** various businesses integrate information from various functions under one system.

**4. Less personnel** Manual work can be replaced with this one software under one system with less no of staff.

**5. Accuracy:** People when worked on various modules get the accurate data in form of reports.

**6. Supports all business:** If this is set as a goal, to automate inventory posting to G/L, then it might be a successful project, which supports all business.

#### XI. DISADVANTAGES OF SAP

**1. Expensive** This entails software, hardware, implementation, consultants, training, etc. Or you can hire a programmer or two as an employee and only buy business consulting from an outside source, do all customization and end-user training inside. That can be cost-effective.

**2. Efficiency** Generally, ERP software focuses on integration and tends to not care about the daily needs of people as individual efficiency can suffer by implementing ERP.

#### XII. HOW IS FUTURE AFTER COMPLETING SAP COURSE?

It totally depends upon again on the individual's right. How much knowledge and experience one is holding and what kind of skills those persons might have honed to get a good position or opportunity in their intended field.

Further, I also would like to make you understand that future is always uncertain and so think and plan your career according to your own interests and choices. Say if we go by your interest, that is doing SAP (Fi Co) and without having any work experience and background of commerce subject in graduation again it is minus marking for the employment. Also if you take the SAP certification it will cost you almost 3.5 lacs and still even they do not assure you with a job.

So I would like to say only one thing do SAP but selecting the core subject for that, your specialisation will also support you, if you have taken any subject

other than Finance, again it becomes like a subject cannibalism for your own career.

#### XIII. SUGGESTIONS WHEN YOU SHOULD DO SAP PROGRAM

- If you learn it now before getting any job, it helps you in just short listing your curriculum vitae but no one would give you sap jobs to work upon as you are just a fresher, but on the other hand you may not understand sap HR clearly because of no working experience.
- While you start working, start taking weekend/ online sessions on sap after 6 months of your job, this is because you would have seen some practical daily work culture, this should help you to understand sap much easily than before. Added to it, start looking for job on SAP after your 1 year of successful career anywhere any industry in India and abroad.
- If any of your references are working for SAP there are chances of getting through and excel career into it.

#### XIV. SAP JOBS IN THE WORLD

In the past couple of weeks, the offer of SAP jobs in major cities such as New York, London as well as smaller cities like Geneva or Provo in Utah remained strong.

With 1 042 new openings, London is the city with the most SAP jobs available. Followed by **Bangalore**, India, where more than 681 SAP positions were posted. Houston, with 609 openings, is the American city with the most SAP jobs offered last weeks. Chicago, Mumbai, Sydney or Madrid remain some of the top cities on the SAP job market. With a strong demand for SAP consultants, London and **Bangalore rank respectively first** and second in terms of SAP openings in each of the past 2 weeks.

TOP INTERNATIONAL SAP CITIES	TOP INDIAN SAP CITIES
1 London	1 Bangalore
2 Houston	2 Mumbai
3 Chicago	
4 Dallas-Fort Worth	
5 Mumbai	
6 San Francisco	
7 Madrid	
8 Sydney	

Table 2.SAP Jobs

The fees for one SAP Module will cost about 20 - 25 thousand and if you go for certification it is about 3-4 lakhs. Students who get experience with SAP in their coursework gain a competitive advantage in top industries. Companies that use SAP include John Deere, IBM, Nestle, Coca-Cola, Proctor and Gamble, Glaxo Smith Kline, Caterpillar and more. It will help you to get the job in India and abroad, IBM, TCS, Capgemini, Infosys, Accenture etc.

## XV. CONCLUSION

Technology and its link to the global economy shows us just how quickly consumers' want and need change, and how that rapid change can have an impact on your company's ability to meet these needs in a timely fashion. To stay competitive, enter a new market niche, or maintain your current market share, you must be able to drive and direct how quickly your company adapts to new changes or meets current customer demands. Keeping IT applications and business processes up-to-date and tuned to quickly respond to these needs is a challenge facing many organizations.

Large enterprises today have to undergo three major phases before they are up and running with the latest and greatest software applications. First, there is the technical upgrade to ensure your hardware can handle

the new applications. Next, many new software packages make you look at your current business processes and tweak them, add new processes, or retire old ones. Lastly, you add the new software to get the desired new changes in functionality and then spend time training your employees on how to use the new package. What does this mean to you? Extensive time and money will be spent on what turns out to be a full-fledged upgrade, which also includes a lot of features and functions that have nothing to do with the enhancements you wanted to make.

Students have complaint saying jobs are unavailable or many students say jobs are only in marketing or finance but this seems to be false. If the students focus on their specialisation area and get into SAP their future is safe and many get opportunity to work abroad or travel outside India. Considering to their performance the salary can be doubled within a year or less than that.

Today, many students are faced with a question as to what value will pursuing an authorized **SAP training with any Degree or Master Degree** to their careers. This actually is a great choice basis that one gives in full commitment towards a solid career. An authorized SAP certification along with MBA is a great package for any student. The companies which come for recruitment during the placement season would look at such a student with a different eye.

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