

## Training on SAP-ABAP (Batch-2)

# Overview of SAP



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# AGENDA

- Introduction to ERP
- Introduction to SAP
- Navigation through SAP
- Q&A Session

# What is ERP?

## Enterprise Resource Planning (ERP)

- ✓ Major business processes combined into an integrated software solution
- ✓ Focus on entire value chain
- ✓ ERP is a package used by software to control the whole organizations different departments .
- ✓ Use of this package makes it possible to track and manage below listed departments in real-time

- Financial Accounting
- Controlling
- Fixed Asset Management
- Production Planning
- Materials Management
- Sales & Distribution
- Customer Service

# Enterprise Resource Planning

- Full integrated processes and data
- Real time processing
- Drives significant percentage of Company's business
- Includes:
  - Finance
  - MRP II
  - Supply Management
  - Quality
  - Scheduling
  - Sales and Distribution
  - Tooling
  - Program Management

# Enterprise Resource Planning

- Enterprise Resource Planning (ERP) is a software that is built to organizations belonging to different industrial sectors, regardless of their size and strength.
- The ERP package is designed to support and integrate almost every functional area of a business process such as procurement of goods and services, sale and distribution, finance, accountings, human resource, manufacturing, production planning, logistics & warehouse management.



## Functions of ERP

An ERP system typically performs the following functions –

- Supports the integrated business process inside the organization.
- Improves capital planning and helps in executing organizational plans and strategies.
- Helps speed up the decision-making process over the analysis of accurate data.
- Helps extend the business network to wider domains, expanding the products and services to reach more customers, suppliers, and partners.
- Identifies operational risks to improve governance.
- Provides protection against organizational data breaches and security threats to leakage of information.
- Makes the organization adaptable to the rapid changes in the business process according to the needs.
- Gives long-term profit by providing means to increase the customer base.

## **Functional Areas**

ERP is a business management software is usually a suite of integrated applications that a company can use to collect, store, manage, and interpret data from many functional areas including –

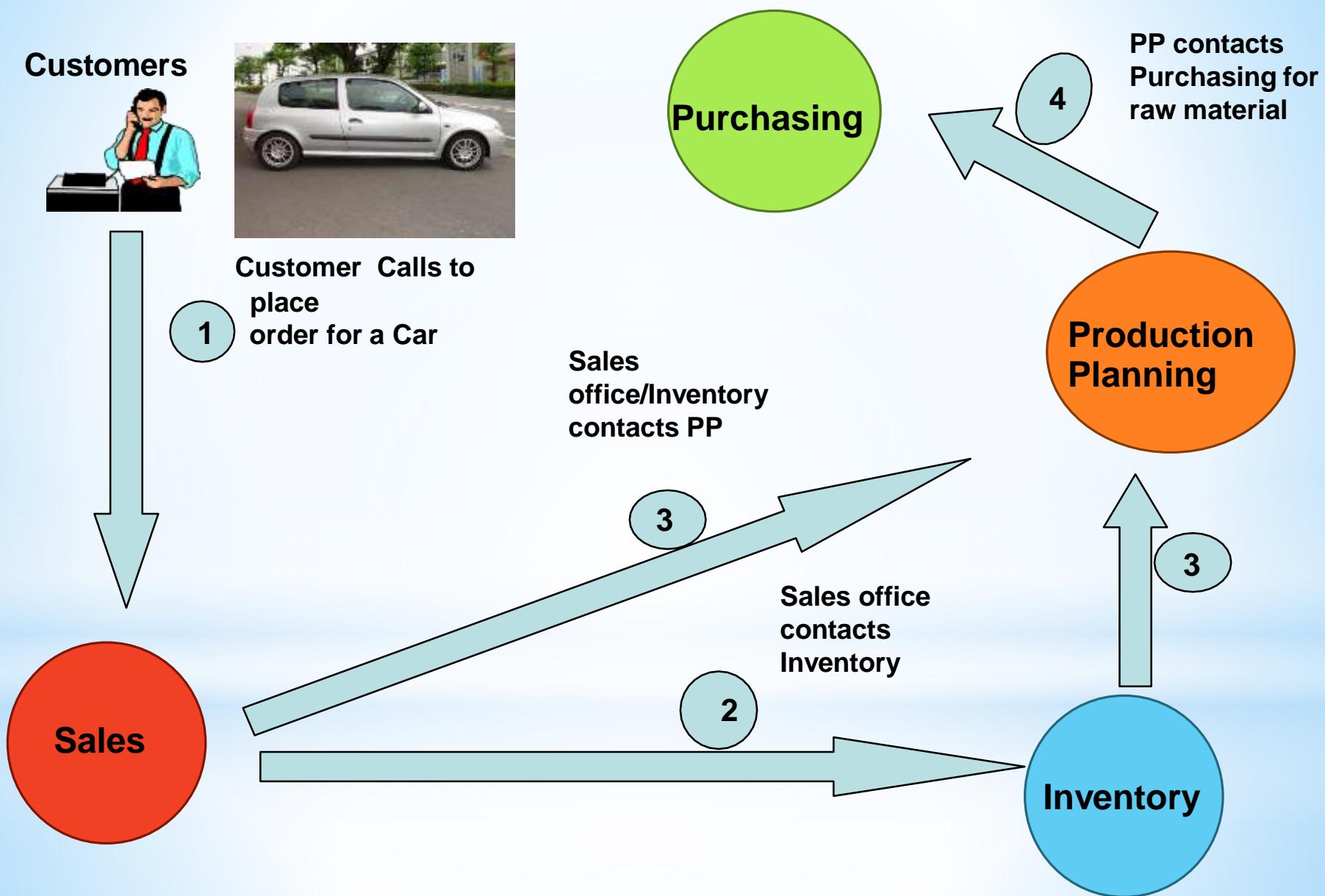
- 1. Financial Accounting** – Deals with financial transactions and data.
- 2. Human Resource** – Deals with information related to employee of an organization.
- 3. Customer Relationship Management** – Deals with capturing and managing customer's relationship, facilitating the use of customer experience to evaluate the knowledge database.
- 4. Sales and Distribution** – Deals with order placement, delivery, shipment and invoicing.
- 5. Logistics and Warehouse Management** – Deals with storage of products and shipment.
- 6. Manufacturing and Material Management** – Deals with the production and production planning activities.
- 7. Supply Change Management** – Deals with the movement of products, storing, managing, and controlling supplies.
- 8. Business Intelligence** – Analyzes data and converts the same to information.

## Advantages of ERP

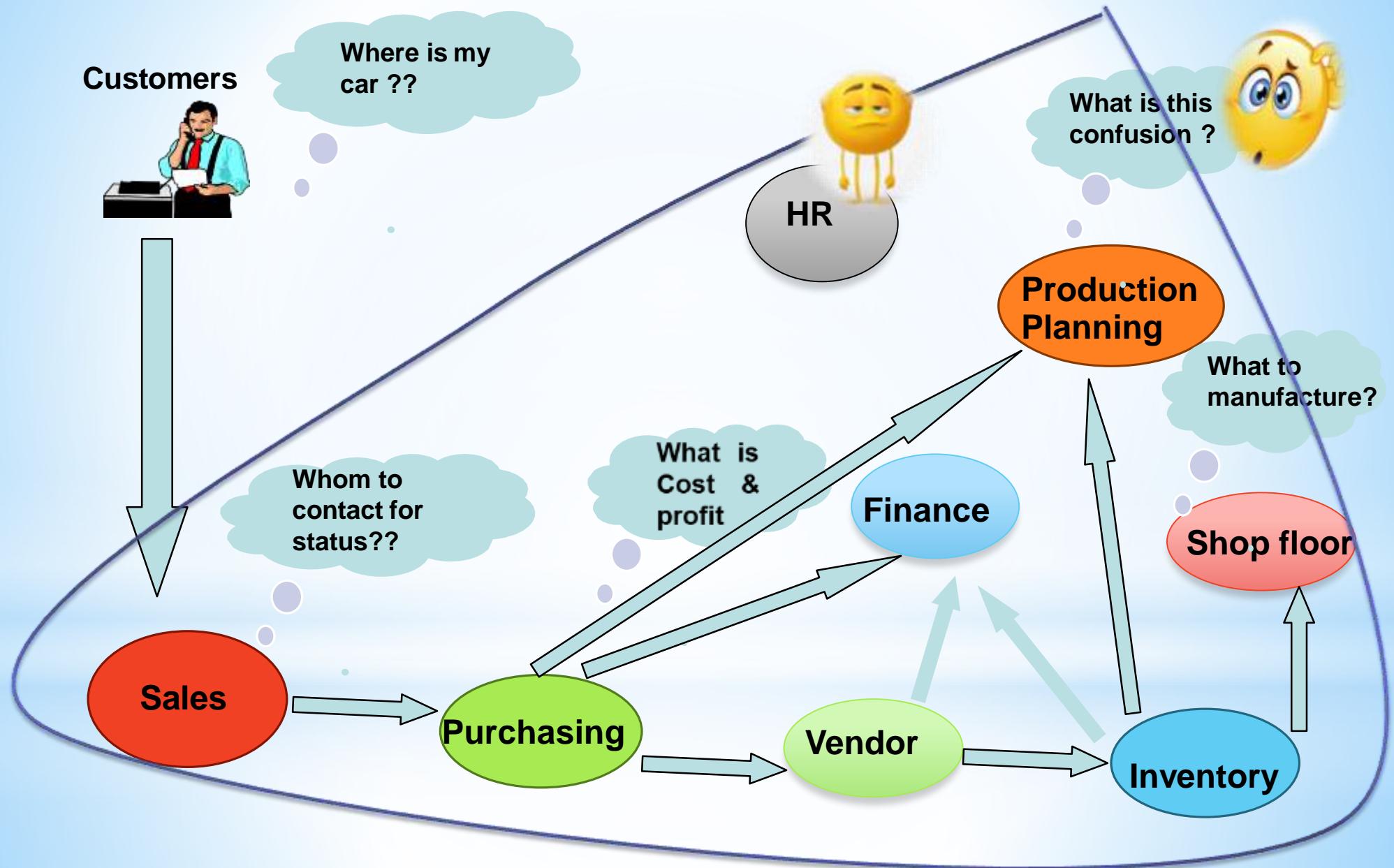
By integrating the business processes, the ERP offers the following advantages-

- Saves time and expenses.
- Allows faster decision-making by the management, utilizing the data and reporting tools designed in the systems.
- Single data source and sharing of data among all the units of an organization.
- Helps in tracking every transaction that takes place in an organization, from starting till end.
- Supplies real-time information whenever required.
- Provides synchronized information transfer in between different functional areas such as sales, marketing, finance, manufacturing, human resource, logistics, etc.

# Business without ERP



# Business without ERP



## Lets Deliver the end product to customer..



I did not  
order for a  
**TRUCK!!!!**



Dear Sir,  
Your Order...



## Business without ERP (Contd..)



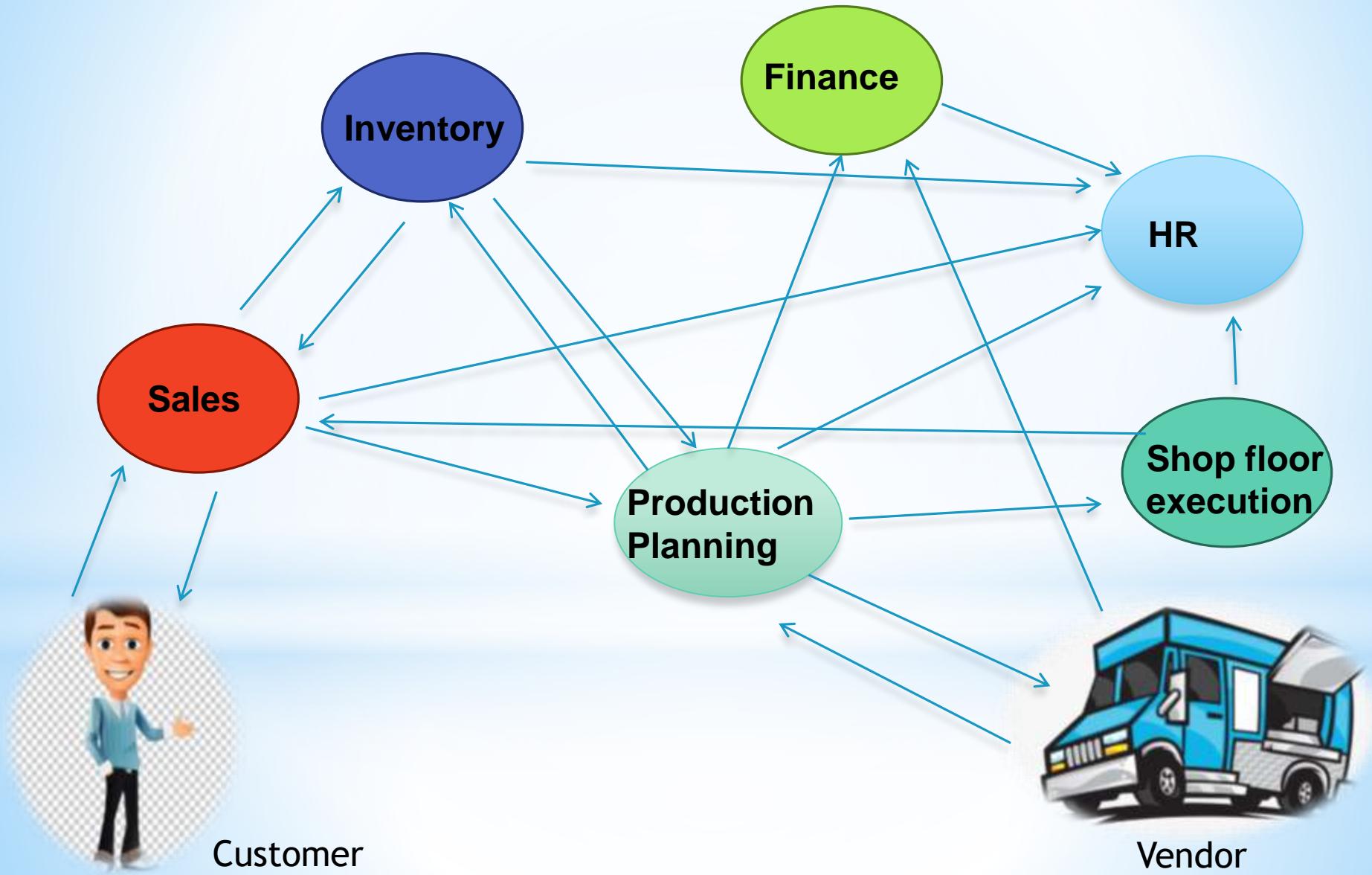
I AM NOT TAKING  
DELIVERY AND WILL  
NEVER DEAL WITH YOU!



We are  
**SORRY Sir**



## TYPICAL BUSINESS PROCESS - OVERALL PICTURE



## Key Inferences

- A typical Enterprise has many Departments/Business units .
- These departments /BU continuously communicate and exchange data with each other.
- The success of any organization lie's in effective communication and data exchange within the departments/BU as well associated third party such as vendors, outsources and customers .

# **ENTERPRISE SOFTWARE SYSTEM**

It can be classified into two types .

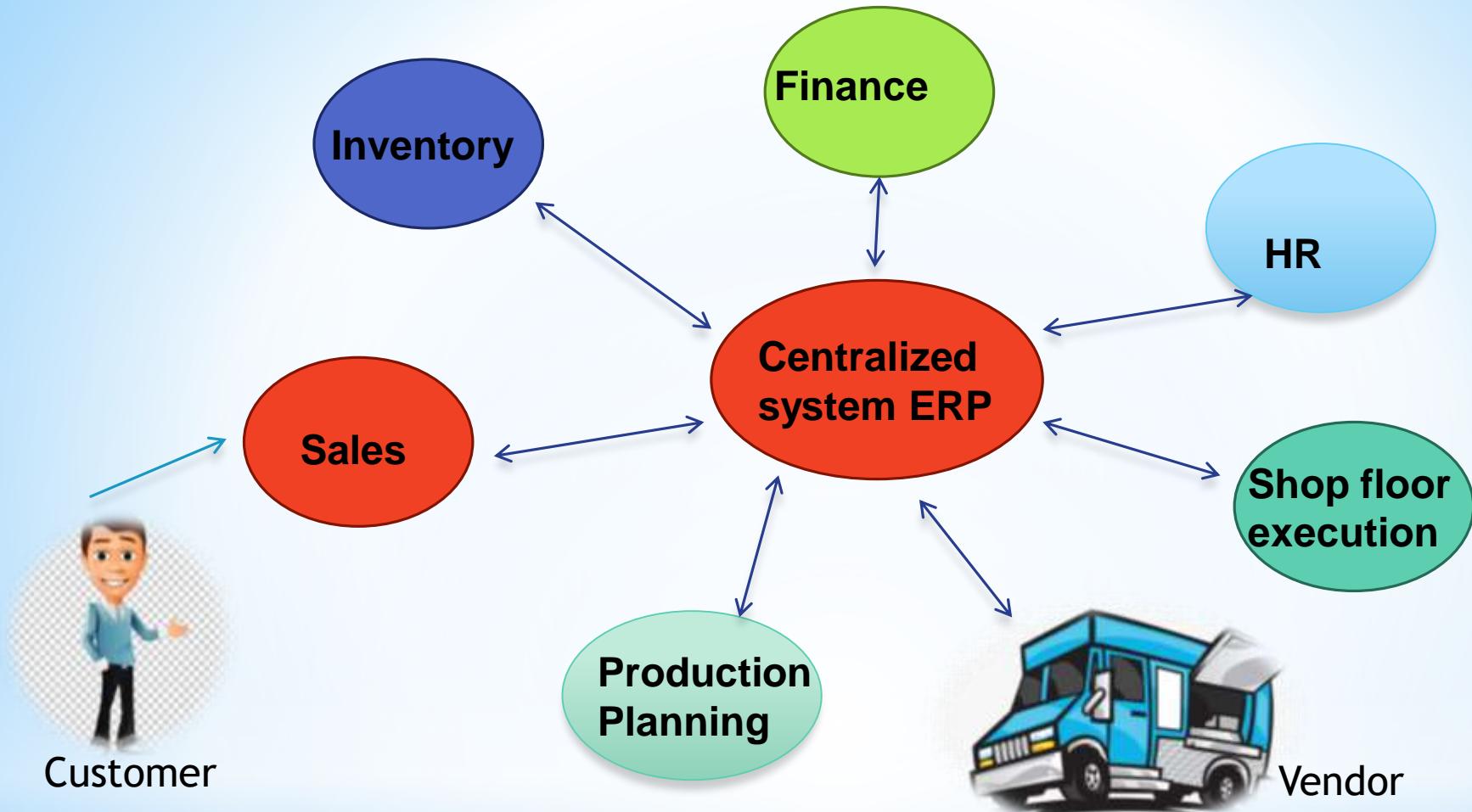
1. Decentralized Systems
2. Centralized Systems

## **Decentralized Systems**

- Data is maintained locally at individual dept.
- Dept. s do not have access to data of other dept.

## **Problems**

- Numerous disparate information systems are developed individually over the time.
- Integrating data becomes more time and money consuming .
- Inconsistencies and duplication of data .
- Lack of timely information leads to customer dissatisfaction ,loss of revenue and reputation.



Data is maintained at a central location and is shared with various departments.  
Departments have access to data of other departments/BU .

## BENEFITS

- Eliminates the duplication, discontinuity and redundancy in data.
- Provides information across departments in real time.
- Provide control over various business process.
- Increases productivity ,better inventory management ,promotes quality ,reduced material cost ,effective human resources management .
- Better customer interaction ,increased throughput .

# Why Enterprise Architecture

- Why Enterprise Architecture ?
  - Numerous disparate information systems
  - Integrating the data becomes costly
    - Time
    - Money
    - Resources
  - Inconsistencies and duplication of data
  - Lack of timely information
  - Required: Central enterprise definitions
  - Required: Centrally controlled business change

## Enterprise Architecture - Benefits

- Eliminates the duplication, discontinuity and redundancy in data
- Increases the return on investment made on IT implementations
- Delivers quality information designed for the Enterprise as a whole
- Faster and cheaper
- Delivers quality information to produce a quality enterprise
- Satisfying Partners/Customers
- Reducing required manpower



E R P



## Before ERP & After ERP

- Stand alone System.
  - Lack of coordination among business function(Manufacturing & sales)
  - Non Integrated data: Data have different meanings.
  - System are maintained on a procedural basis
  - Redundant data and inconsistent information.
  - Difficult to manage.
- 
- Integrated System.
  - Support coordination among business functions.
  - Integrated Data: Data have the same meaning across multiple functions.
  - Changes affect multiple functions or Systems
  - Common interfaces across systems.

# Why ERP?

- Radically changed business environment
- Dynamic marketplace
- New markets
- Increased competition
- Higher customer expectations
  - Pressure to lower costs across the value chain
  - Pressure to significantly reduce lead-times
  - Greater focus on inventory reduction/management
  - Trend to expand product/service offerings
  - Drive for improved product/service quality
  - Geographically dispersed global marketplace

Being more responsive to *all* internal & external customers

# ERP PRODUCTS

# ERP Products - Global Players

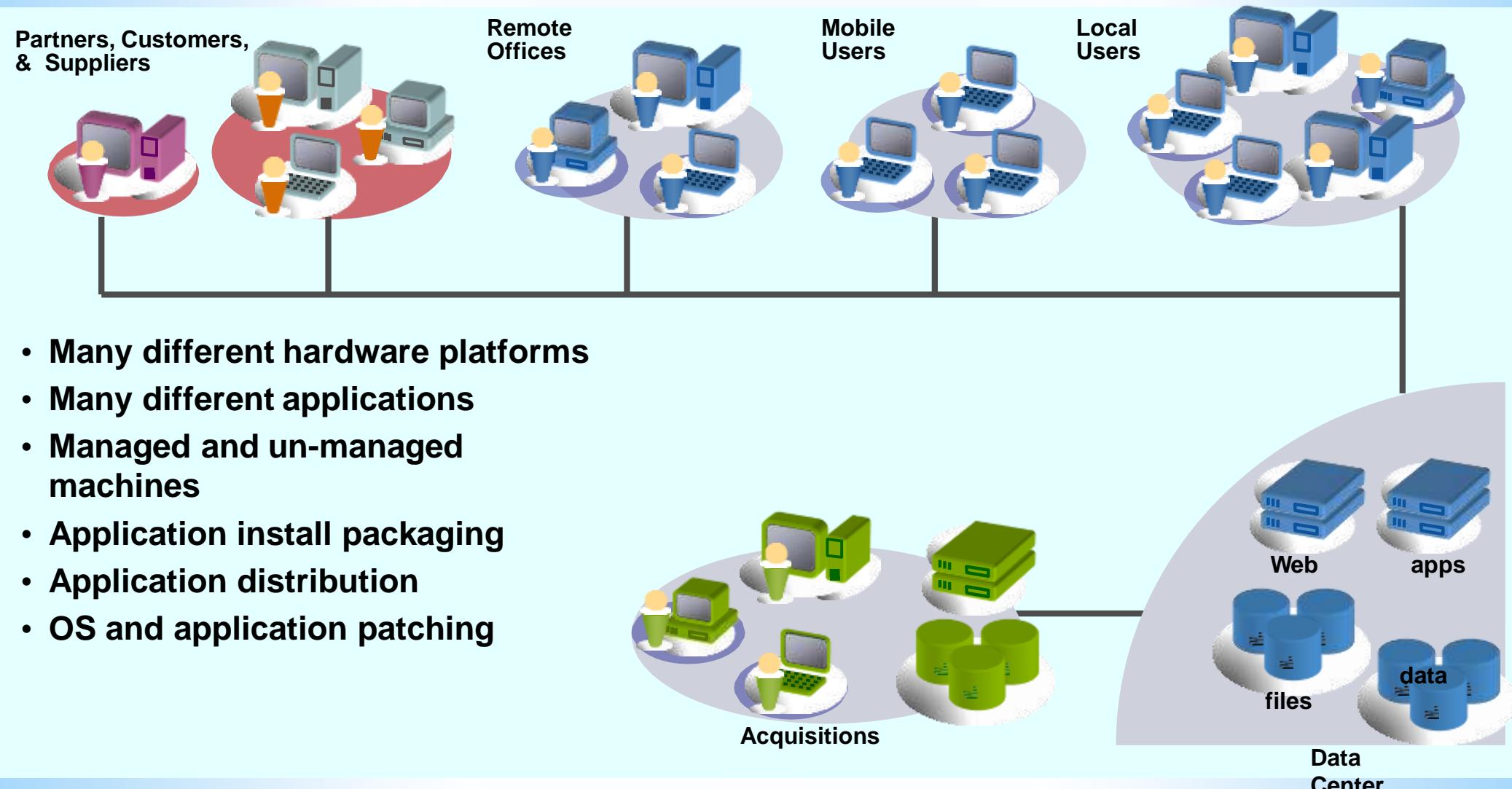
- \* SAP
- \* BAAN
- \* ORACLE
- \* PEOPLESOFT
- \* BPCS
- \* J D EDWARDS
- \* AVALON
- \* SCALA
- \* MOVEX
- \* MFGPRO
- \* SYMEX
- \* RAMCO

Enterprise Architecture is based on Enterprise Relationship Management Systems, which are the backbones of the modern day industries

These are a set of applications combining key functions like

- **Finance**
- **Production**
- **Sales**
- **Logistics**
- **Human Resources etc.** , in an integrated Fashion.

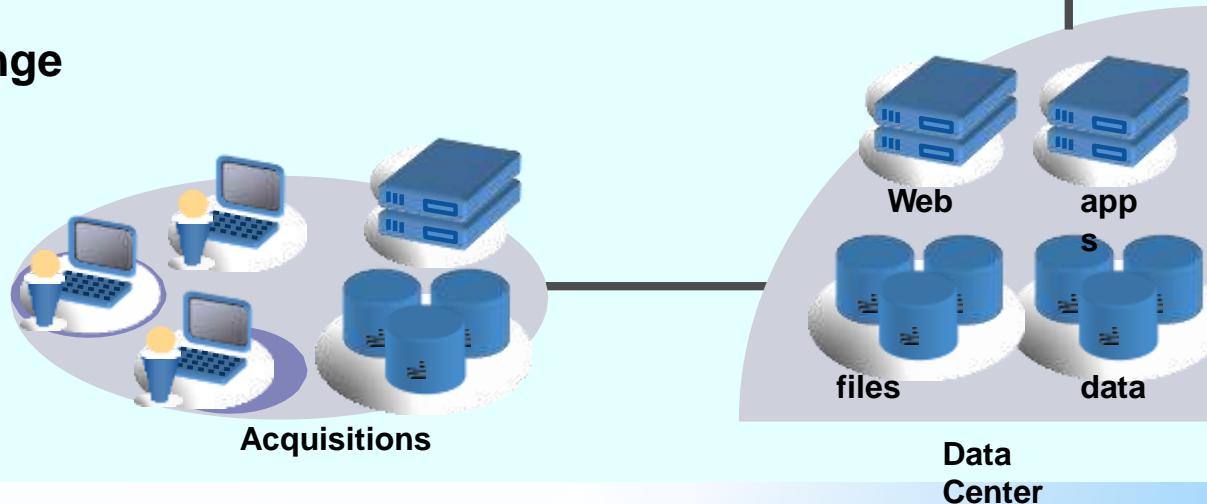
# IT Environment Today



# Complex Problems



- Application compatibility
- Application certification
- Replace target machines
- Cost of application deployment/change
- Support for offline application access
- Frequent application updates
- Efficient use of IT resources
- Efficient use of computing power



**ERP SYSTEM - SAP**



# Systems Applications and Products in Data Processing

(German : Systeme, Anwendungen, Produkte in der  
Datenverarbeitung)

## Differences between ERP and SAP :

- ERP are software solutions that helps organizations to manage their business processes.
- It is a centralized system that streamline all processes.
- ERP is termed as super set of SAP.
- ERP is a web-based application.
- ERP systems are more focused about the organization growth.
- Examples - NetSuite ERP, Scoro, AcTouch, etc.
- SAP is multinational company that sells ERP software solutions to business.
- It groups process into modules and interact with different business aspects.
- SAP are largest provider of ERP software systems.
- SAP is developer that provides variety of options depending upon requirements.
- SAP takes the care of both customers and organization while developing software solutions.
- Examples - SAP Business Intelligence, SAP Enterprise Buyer Professional, SAP Internet Transaction Server, etc.

# **SAP**

# **A Complete Integration**

## **of**

# **The Entire Business**

# History of SAP



- ❖ Systems Applications and Products in Data Processing
  - German : 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)
- ❖ 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
- ❖ Four system developed : R/1, R/2, R/3, S/4 HANA

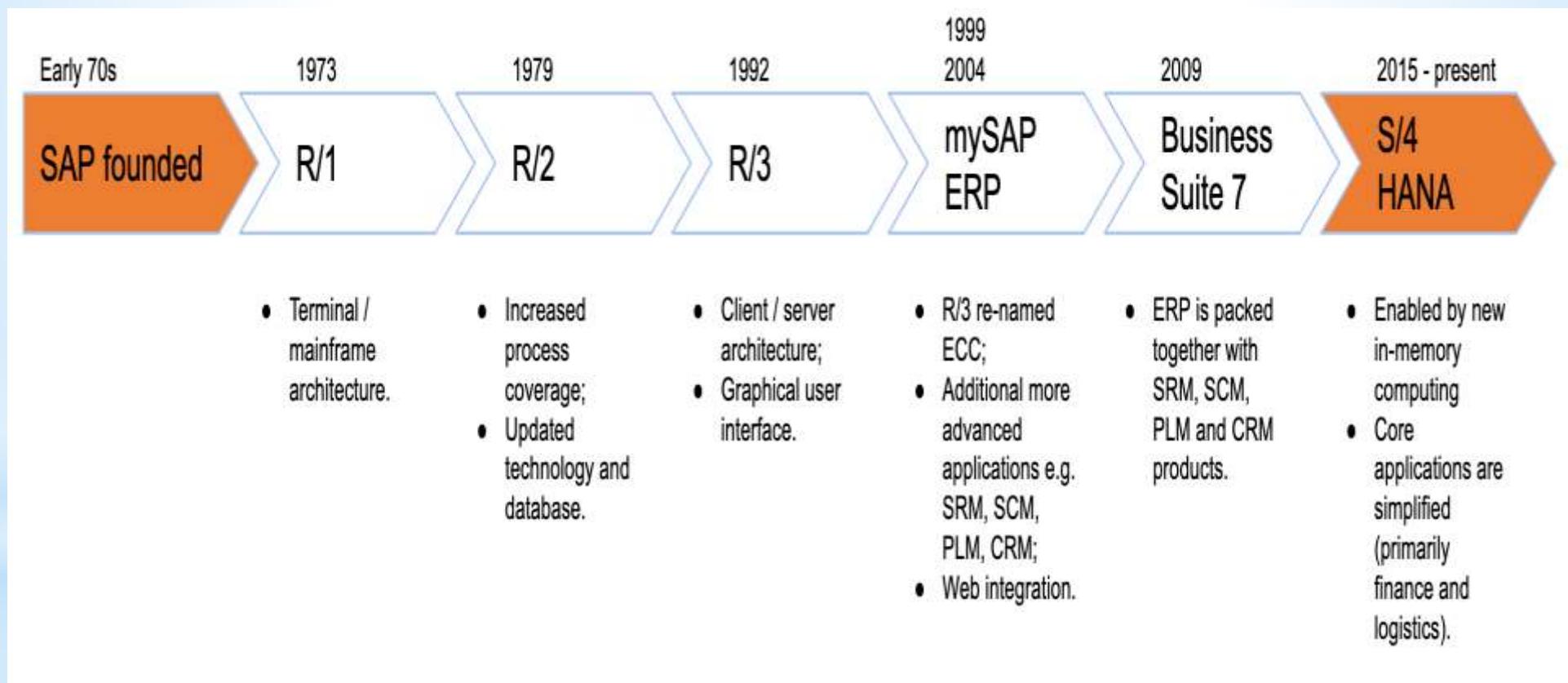
# What is SAP

- Systems, Application, Products in Data Processing.
- ERP software facilitates the flow of information among all the processes of an organization's supply chain .
- ERP products are available from several vendors, such as SAP, Oracle .
- SAP is German-based software company founded in 1972 by former IBM employees to track and manage, in real-time, sales, production, finance accounting and human resources in an enterprise.
- Built-in more than 1000 Best Business Practices & Processes
- On 7 July 2014, SAP announced it had **changed** its legal form to a European Company (Societas Europaea, SE).

# SAP

- Systems, Applications, Products in Data Processing
- Fully Integrated, Modular Structure
- Integrated and online business information system
- Providing maximum flexibility
- Provides simplified business solutions
- Ease of interface with non-SAP Systems

# Evolution of SAP



# Evolution of SAP

- The first version of SAP's flagship enterprise software was a financial Accounting system named R/1
- This was replaced by R/2 at the end of the 1970s. SAP R/2 was in a mainframe based business application software suite that was very successful in the 1980s and early 1990s.
- SAP R/3 was officially launched on 6 July 1992. It was renamed SAP ERP and later again renamed ECC (Enterprise Core Component).
- SAP ECC 5.0 was first released in 2004 and next version SAP ECC 6.0 was released in 2005.
- SAP ECC is still the most widely deployed ERP platform.
- Between 2005 and now SAP has routinely released multiple enhancement packages to keep up with changing customer requirements. Last SAP enhancement package 8 for SAP ERP 6.0 was released in 2016
- Since 2015, SAP announced its strategy to move to cloud. Following which SAP released S4/ HANA. Today this is the recommended ERP from SAP. S4/HANA has seen traction from CFOs and Supply chain teams. In addition to ease of data management, analytics, HANA supports Java and Fiori based development offering better user interface and mobility.
- In addition SAP is now actively promoting its collaborative cloud platforms like HCP, Ariba, “Asset Intelligent Network” , Ganges etc.

# Why - SAP has been successful



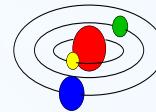
Multi-Lingual



Secure  
Informatio  
n



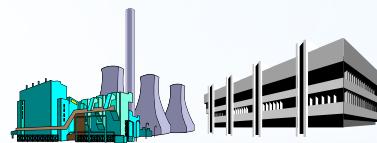
Multi-Currency



Integrated



Best Business  
Practices

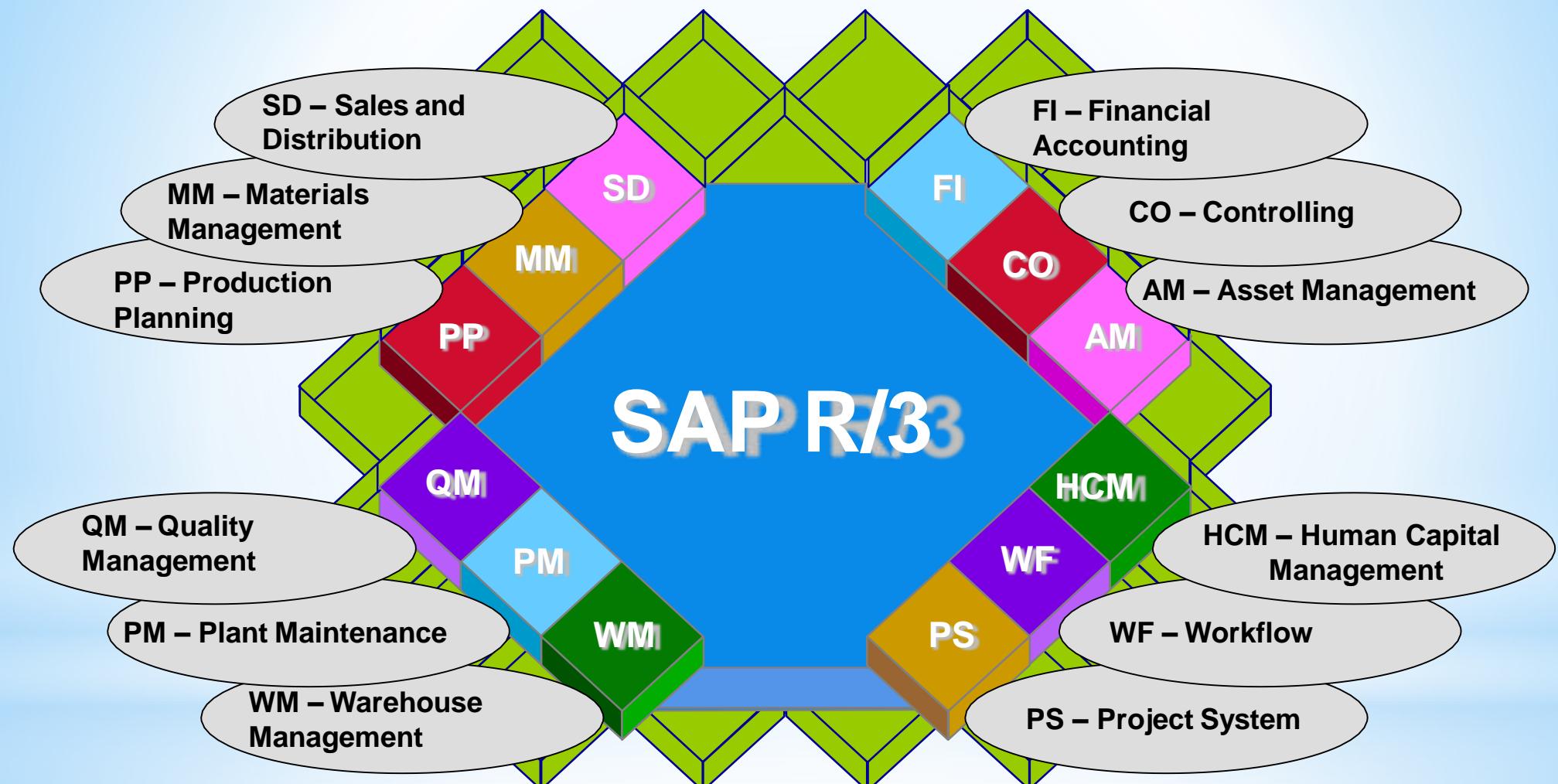


Enterprise-Wide

# mySAP Industry Solutions (Some Examples)

- ❖ SAP for Aerospace & Defense
- ❖ SAP for Media
- ❖ SAP for Automotive
- ❖ SAP for Mill Products
- ❖ SAP for Banking
- ❖ SAP for Mining
- ❖ SAP for Chemicals
- ❖ SAP for Oil & Gas
- ❖ SAP for Consumer Products
- ❖ SAP for Pharmaceuticals
- ❖ SAP for Engineering, Construction & Operations
- ❖ SAP for Professional Services
- ❖ SAP for Healthcare
- ❖ SAP for Public Sector
- ❖ SAP for High Tech
- ❖ SAP for Retail
- ❖ SAP for Higher Education & Research
- ❖ SAP for Service Providers
- ❖ SAP for Industrial Machinery & Components
- ❖ SAP for Telecommunications
- ❖ SAP for Insurance
- ❖ SAP for Utilities

# SAP Modules



## SAP Organization

SAP



- **Global Research Network**
- **SAP Labs centers** ●
- **Service & Support centers** □

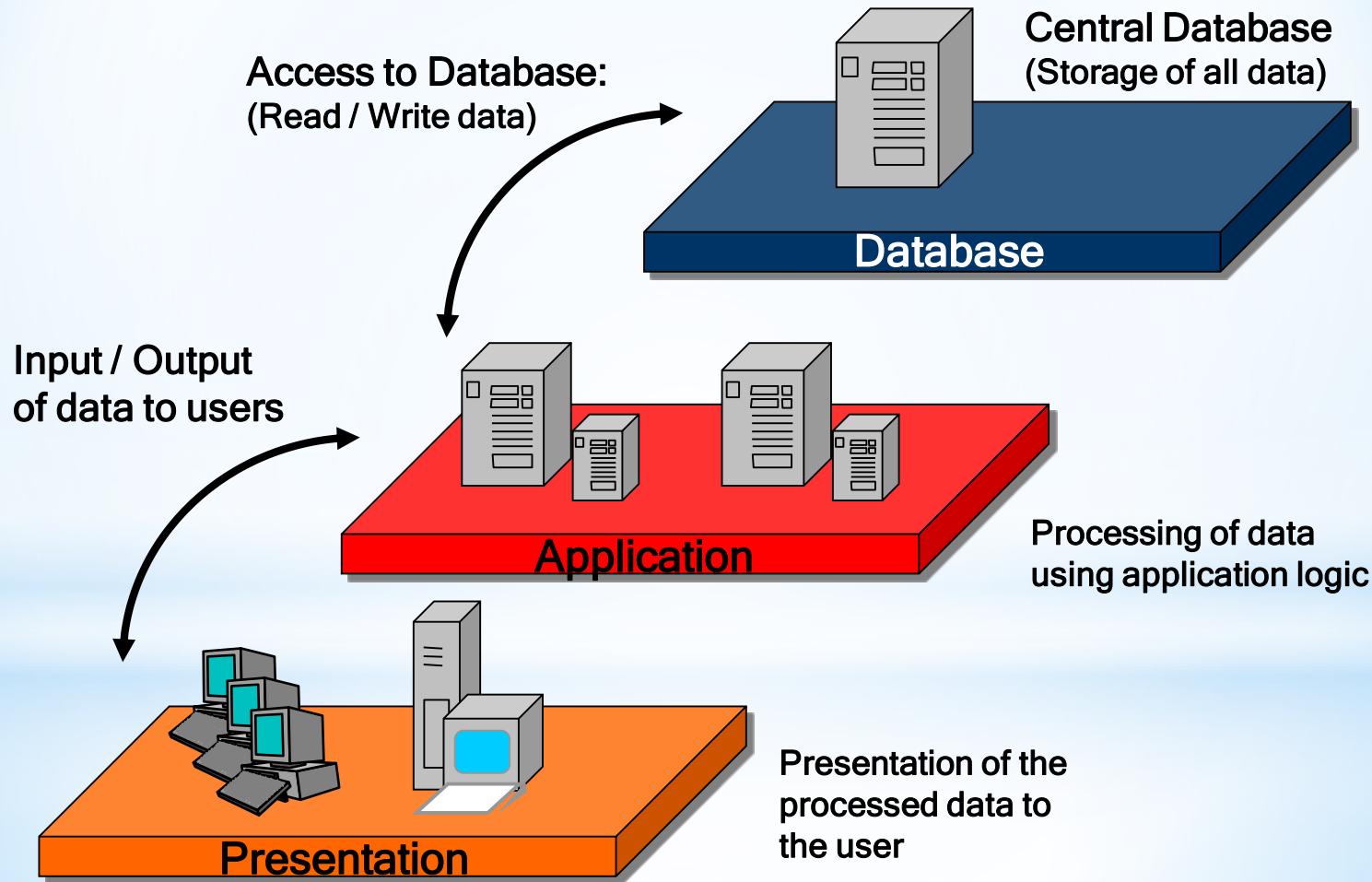


*sap.com*

<http://www.sap.com>

# SAP SYSTEM ARCHITECTURE

# Basic System: Three-Tier Computer Hierarchy



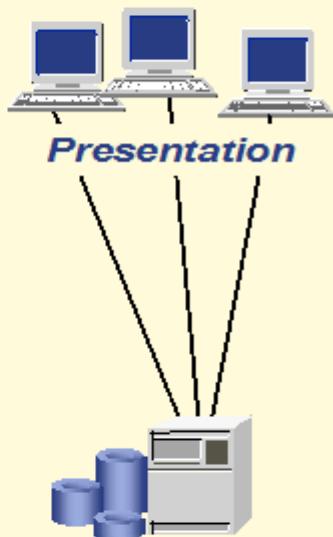
## Hardware-Oriented View

### Central System

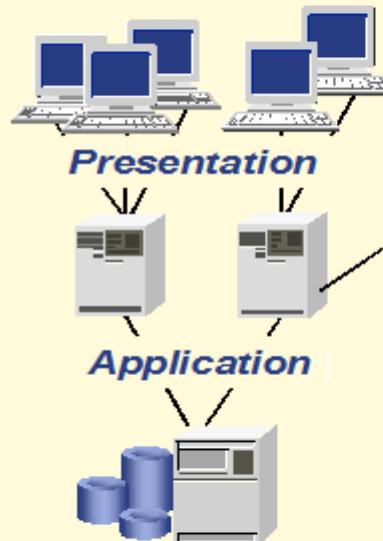


*Database,  
Application,  
Presentation*

### 2-Tier Configuration



### 3-Tier Configuration

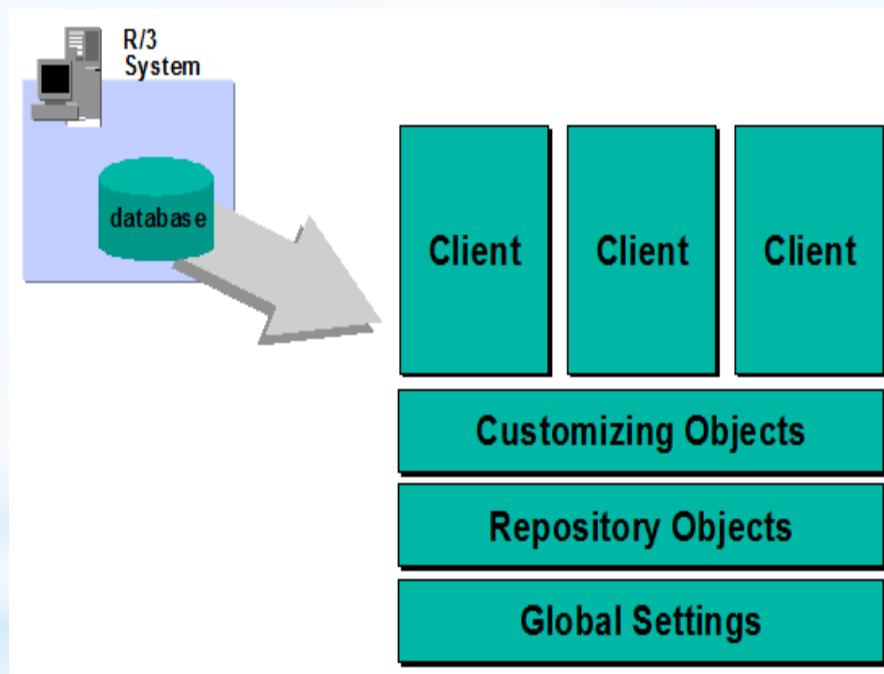


### Web-enabled



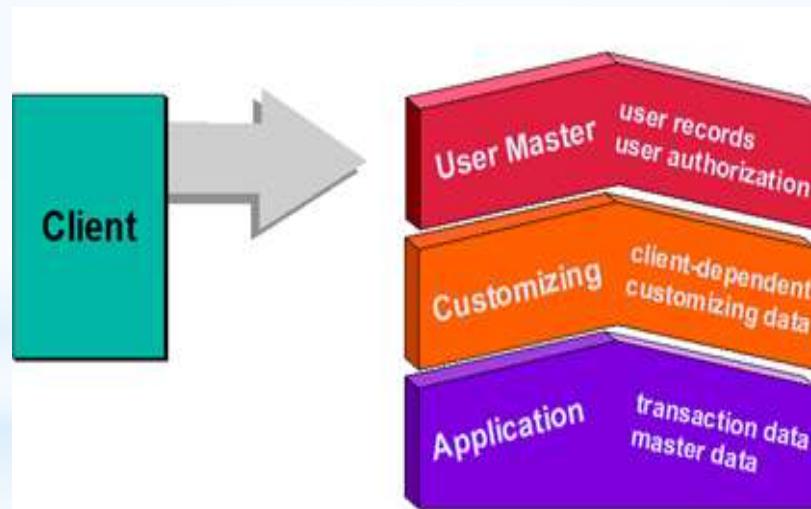
# SAP SYSTEM LANDSCAPE

# What does SAP Database contain?



# Client

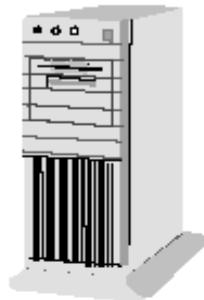
- An autonomous unit in SAP system with regard to commercial law, organization and data
- Used in Sap system for multiple login with single instance . It also provides data security i.e one user with one client can not see data of other user in other client .



# Clients in R/3

## Clients in R/3

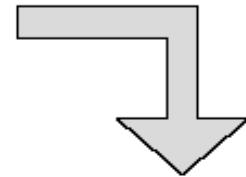
SAP



Hardware



SAP  
System



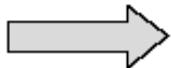
Clients

Delivery client  
(for example, 001)

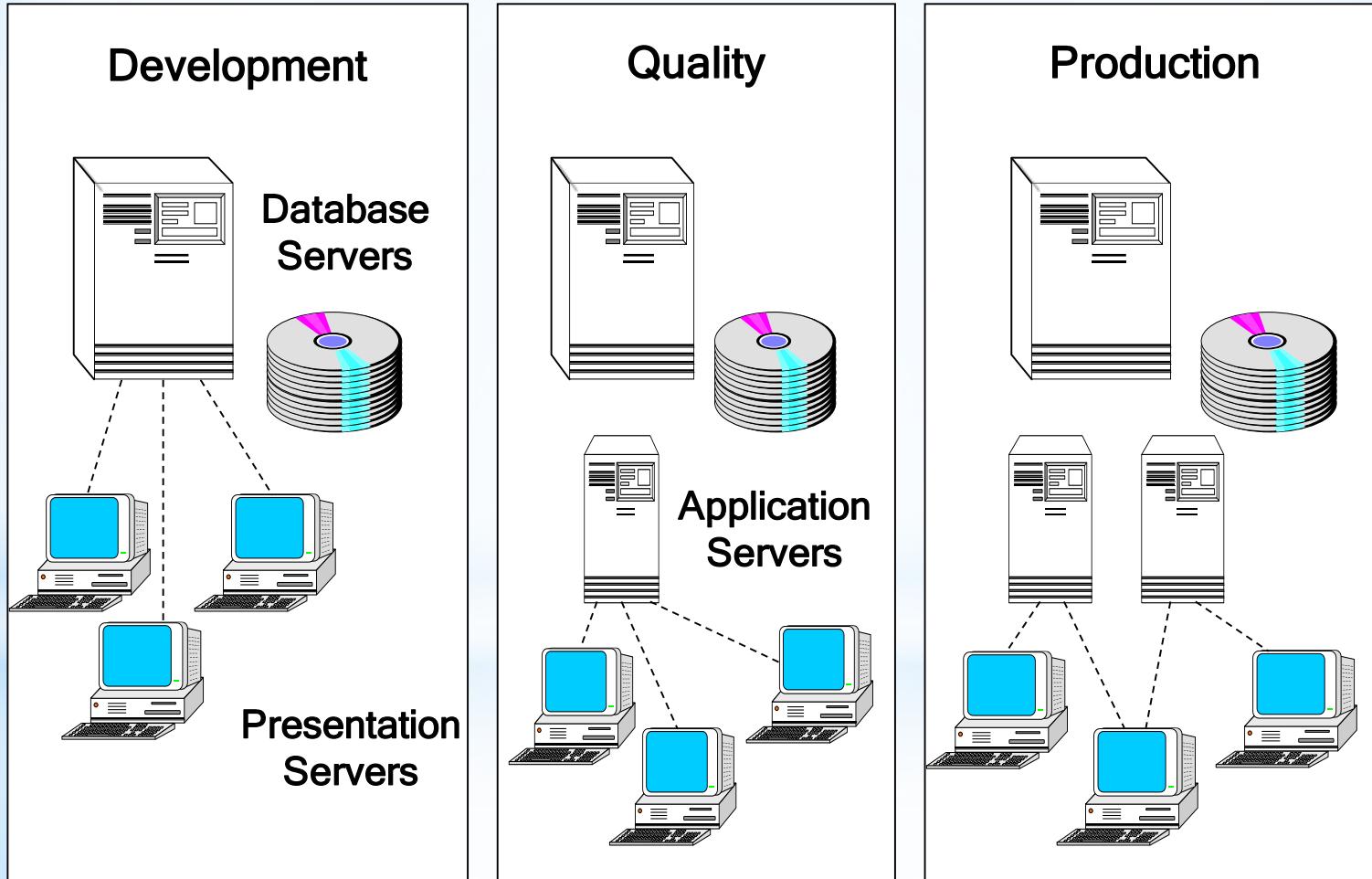
Production client  
(for example, 100)

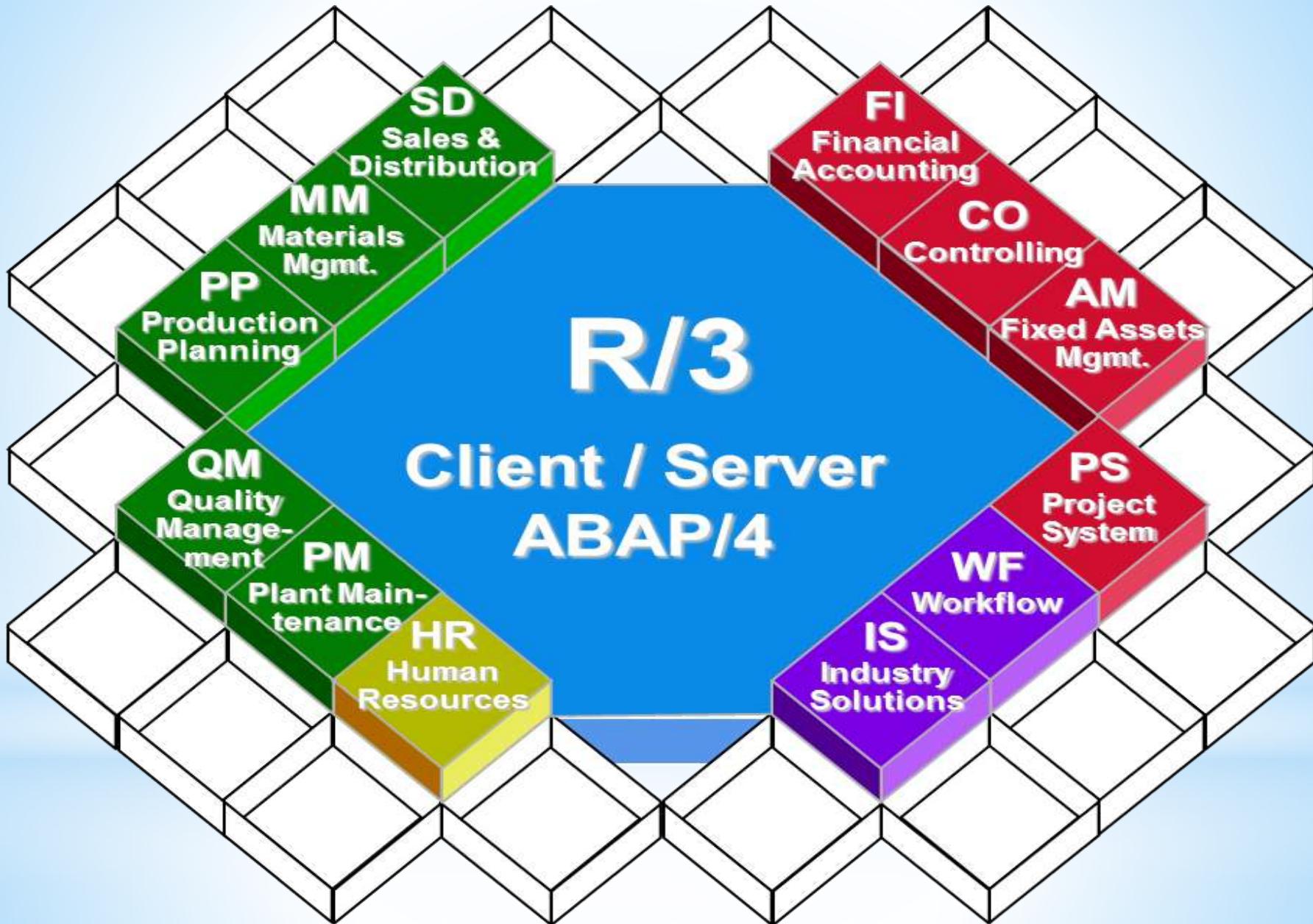
Test client  
(for example, 999)

Training client  
(for example, 400)

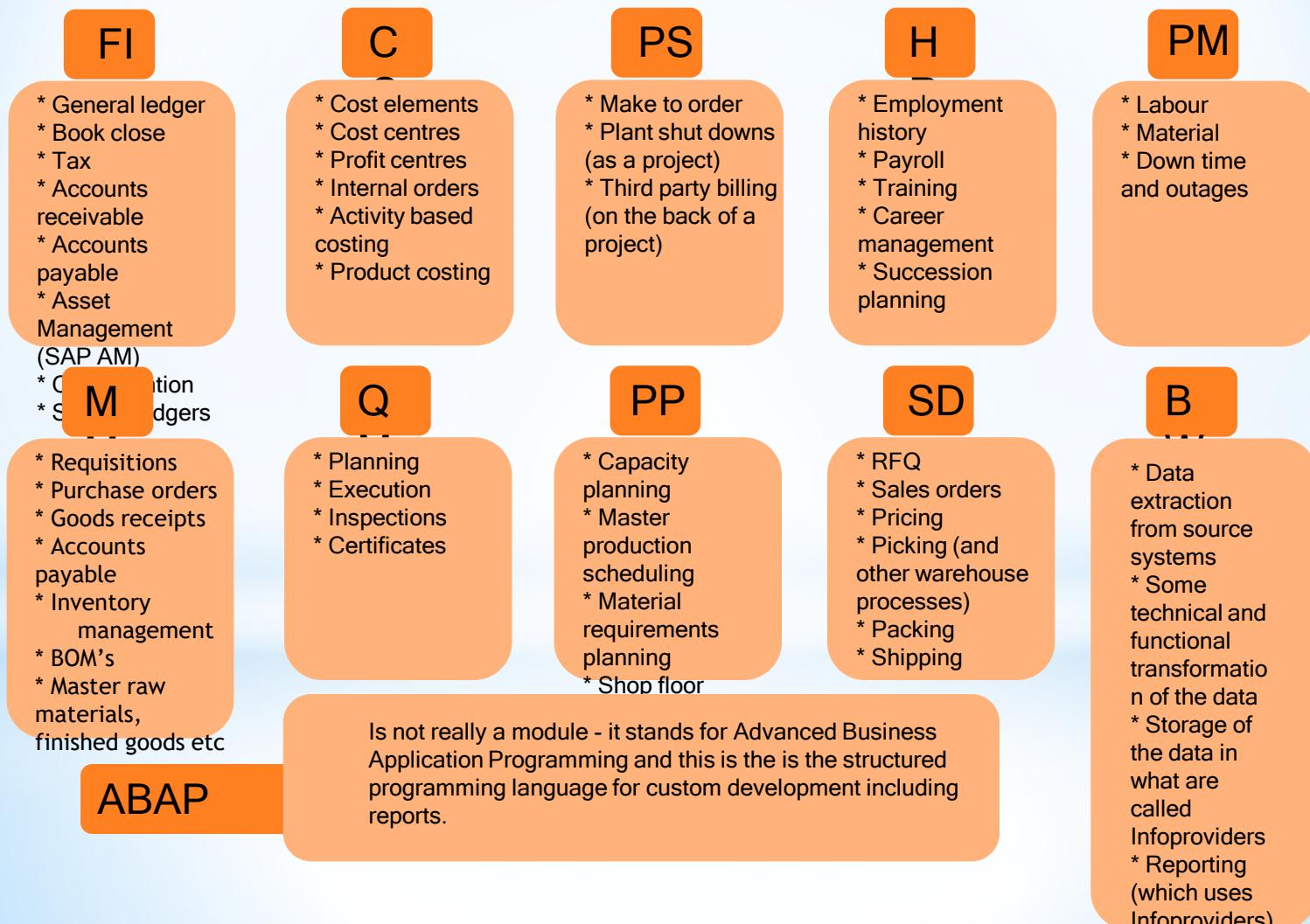


# Sample SAP System Landscape

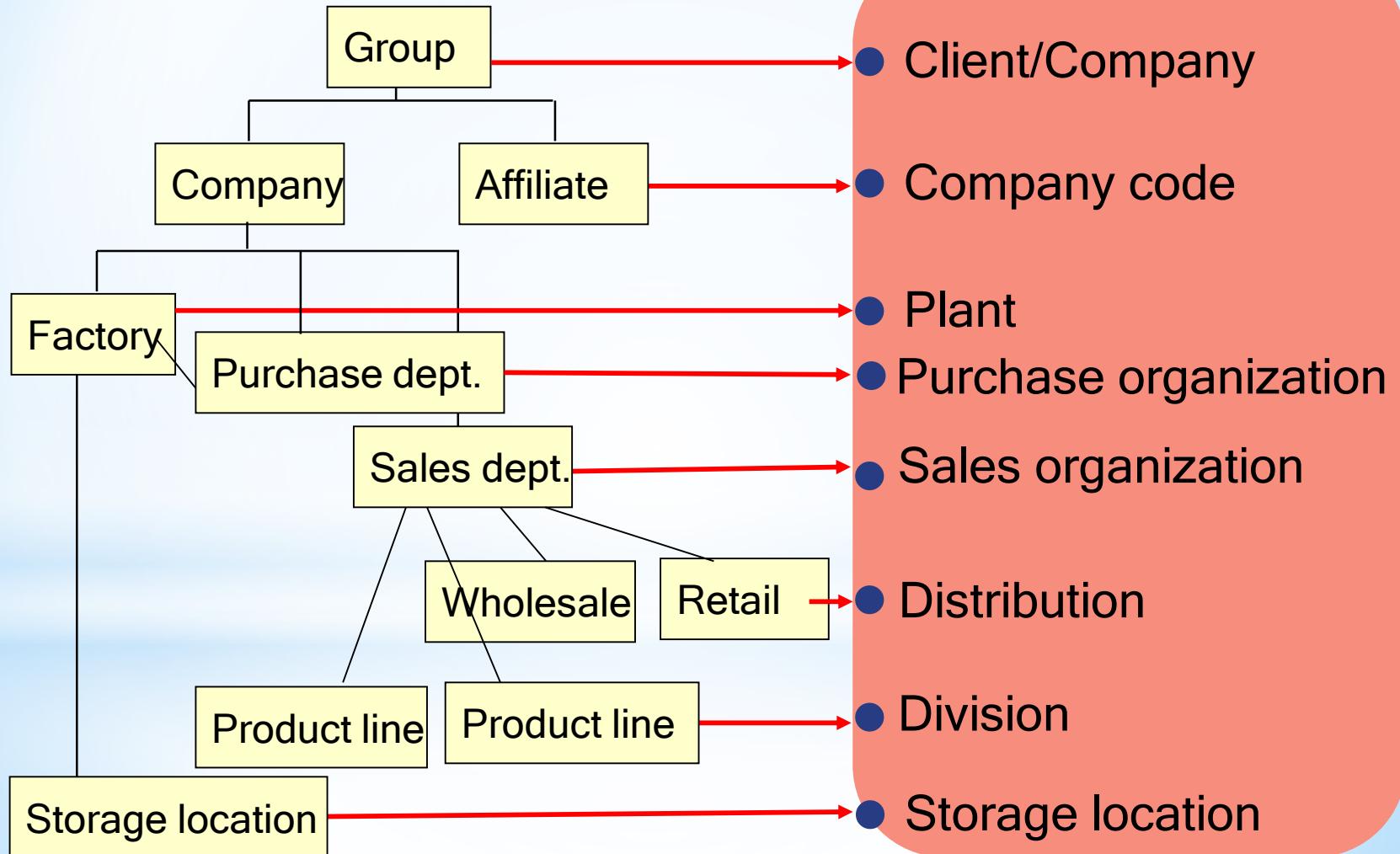




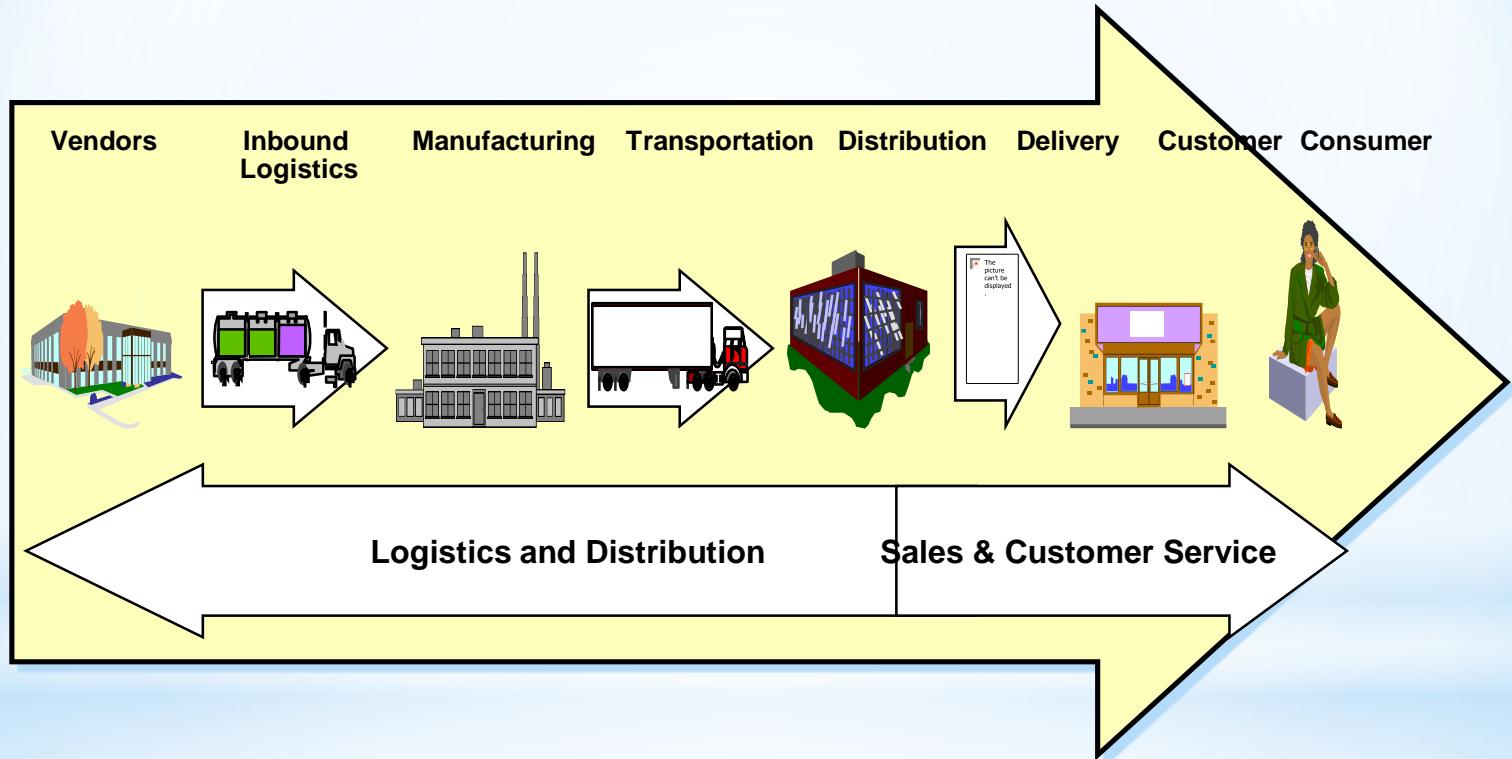
# SAP Modules



# Enterprise Structure

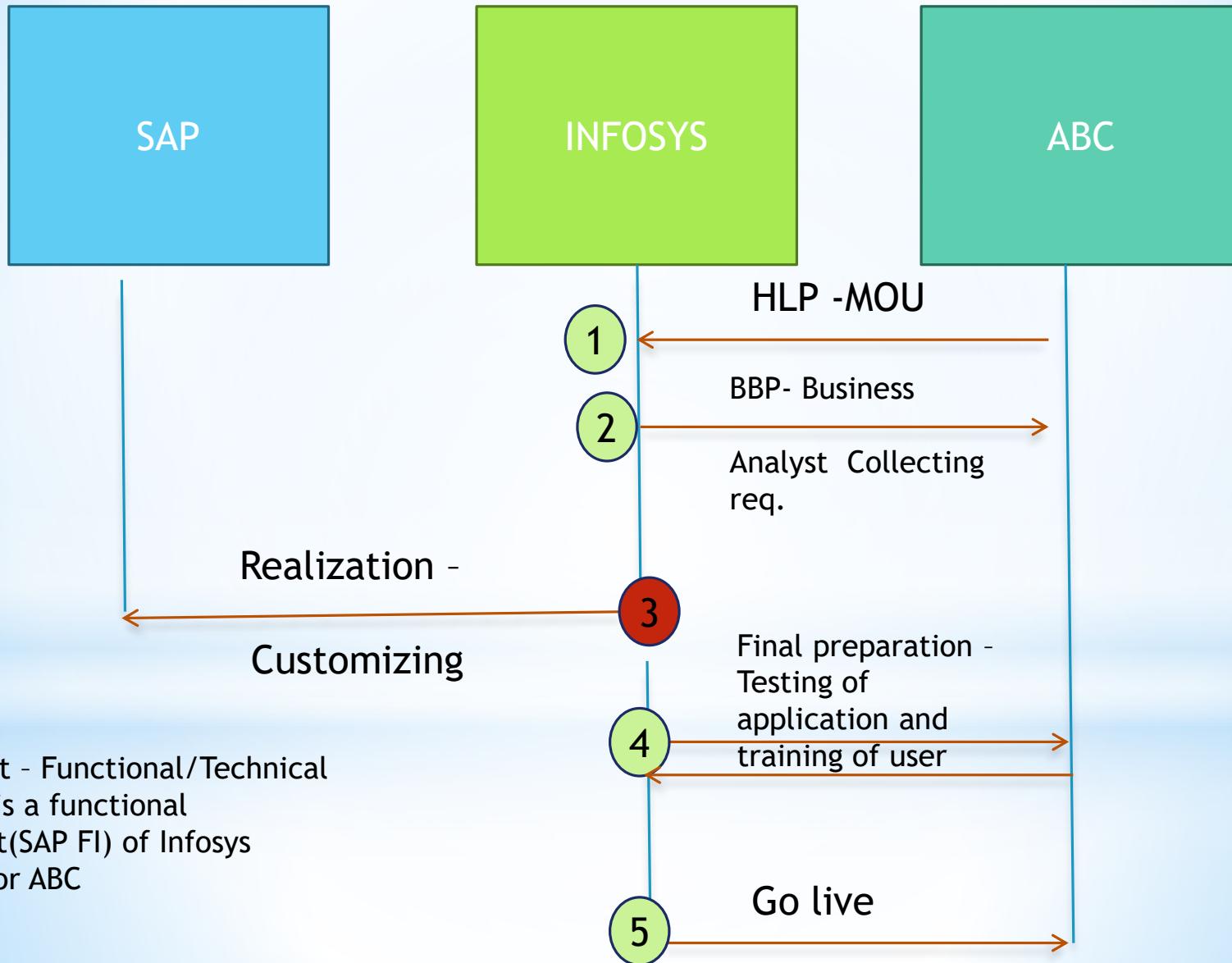


# SAP and Supply Chain Management



Supply Chain connects Vendor's Vendor to Customer's Customer

## ASAP- Accelerated SAP

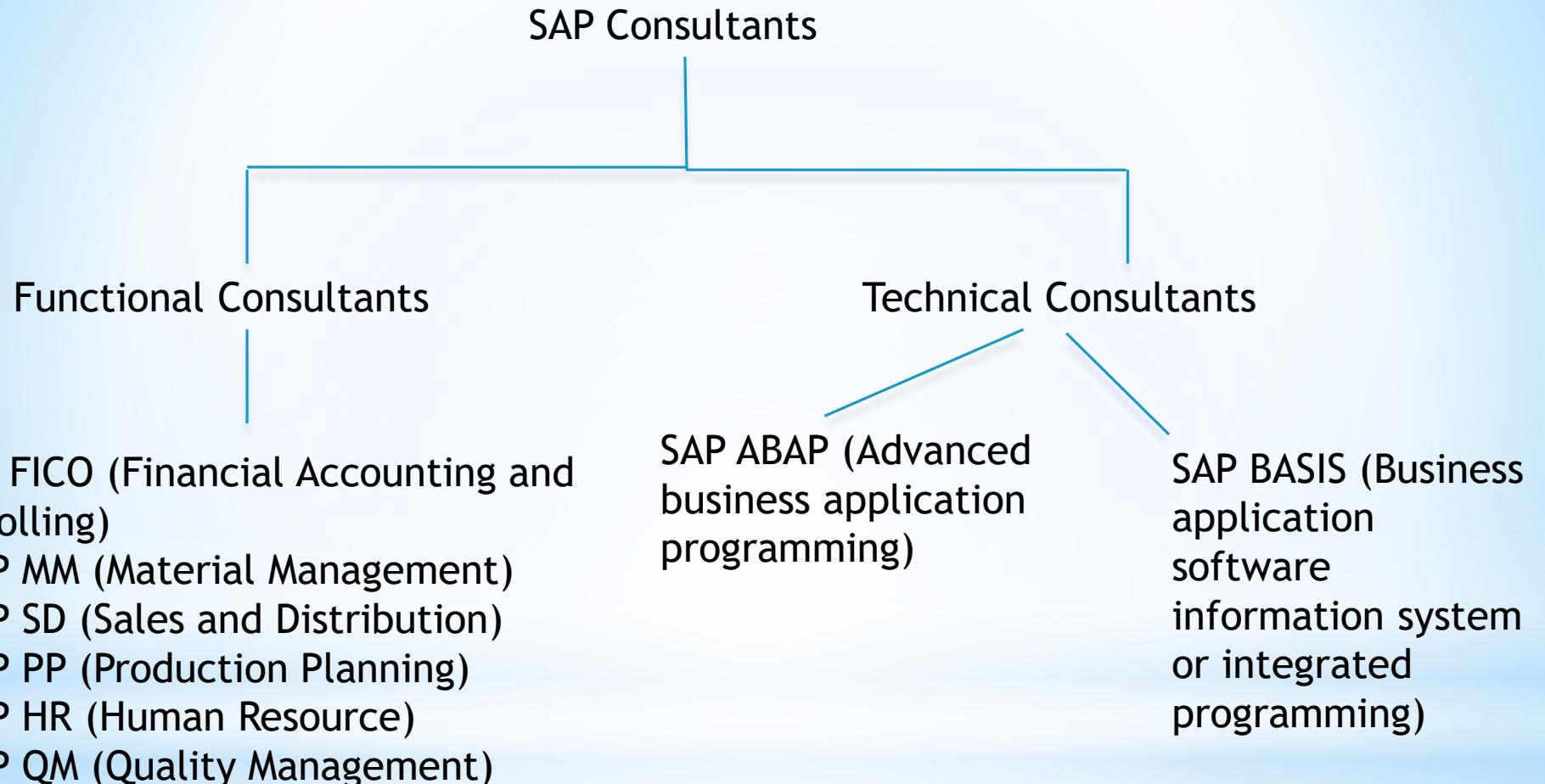


# ASAP - methodology



ASAP tools are tailor-made for an effective, fast, and well-organized SAP R/3 implementation.





## **ABAP and role of ABAP developer**

- ABAP stands for Advanced business application programming .
- It is 4<sup>th</sup> generation language . Hence known as ABAP/4 .
- Created by SAP initially for report creation , Later evolved into full language .
- Entire SAP ERP software is developed using single language i.e. ABAP
- The language is not case sensitive and each statement terminates with period .

## **Role of ABAP developer**

- Receiving a bug in form of functional specification document .
- Analyse business requirement as per given functional specification .
- Estimate no. of hours for business requirement .
- Develop the object .
- Perform unit testing .
- Release the developed object to testing server .
- Prepare technical specification document .



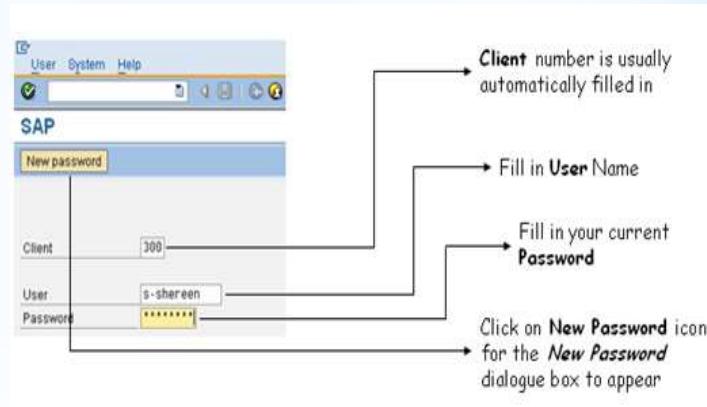
# Navigation

# Logging into SAP

Double click on the SAP Logon icon to display the following box:



SAPlogon



Click on the Logon button (click Continue through any system messages) to display the initial SAP Easy Access screen:

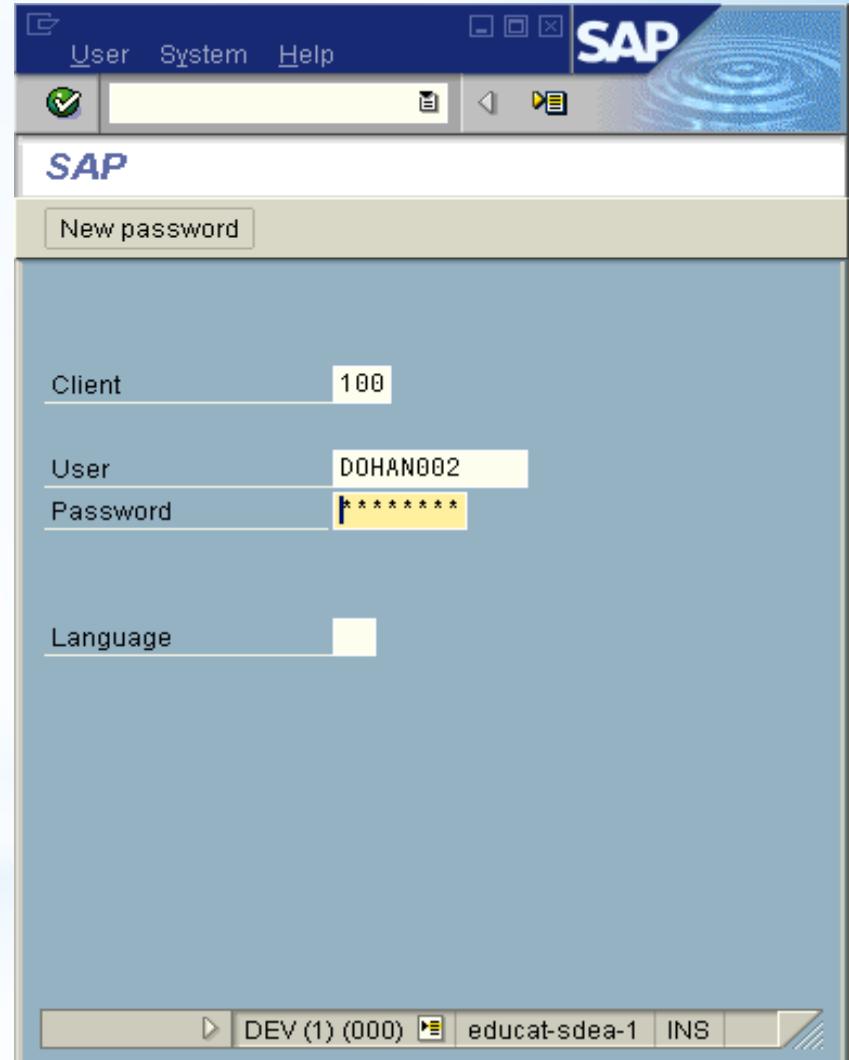


## Logging On

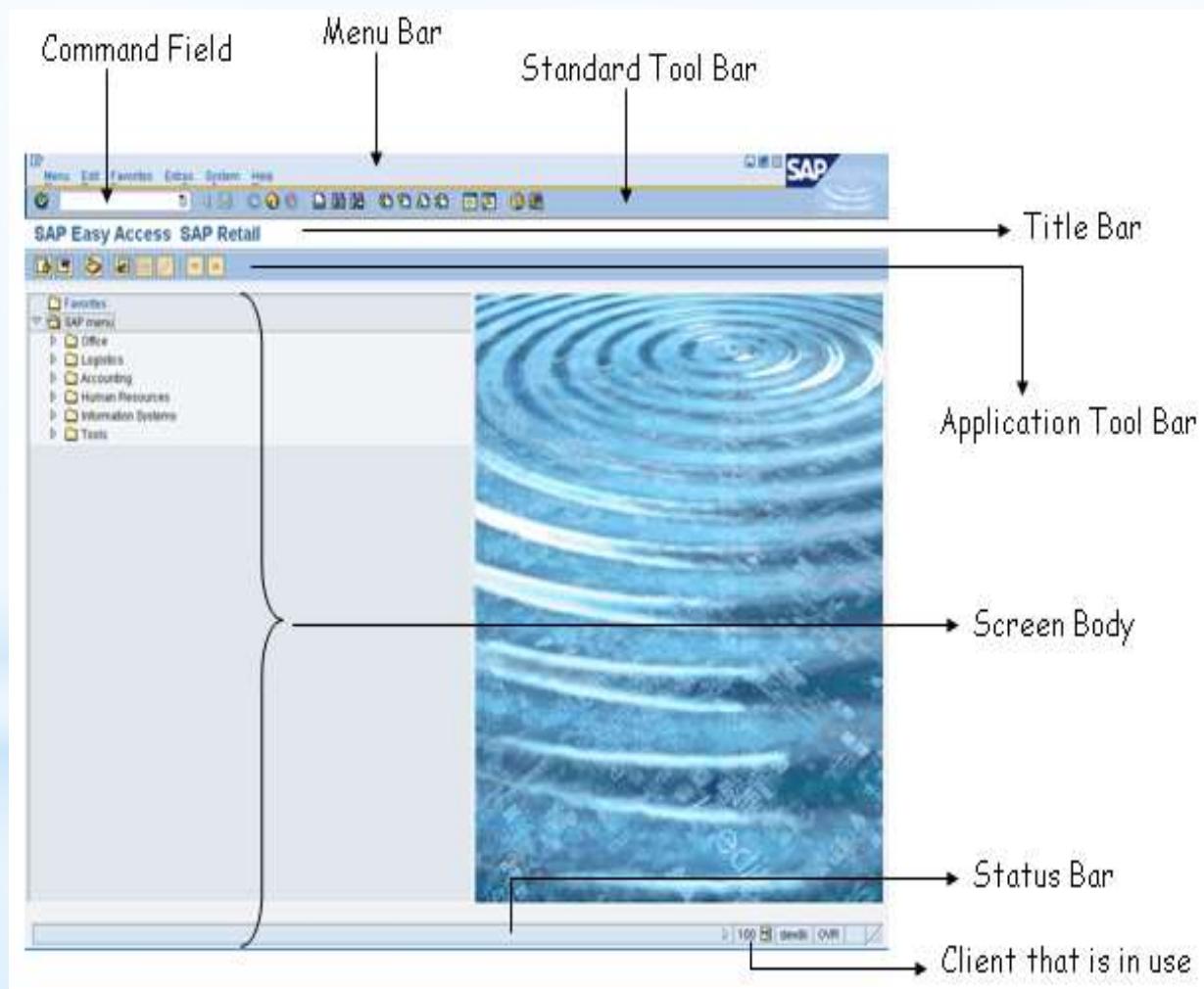
- A new window appears
- Enter your user-ID
- Enter your Password

**The first time you use SAP you need to reset your password.**

- The client number as well as language are entered by your administrator and defaulted
- Press Enter on your keyboard



# SAP Easy Access



## Passwords

### Password Basic

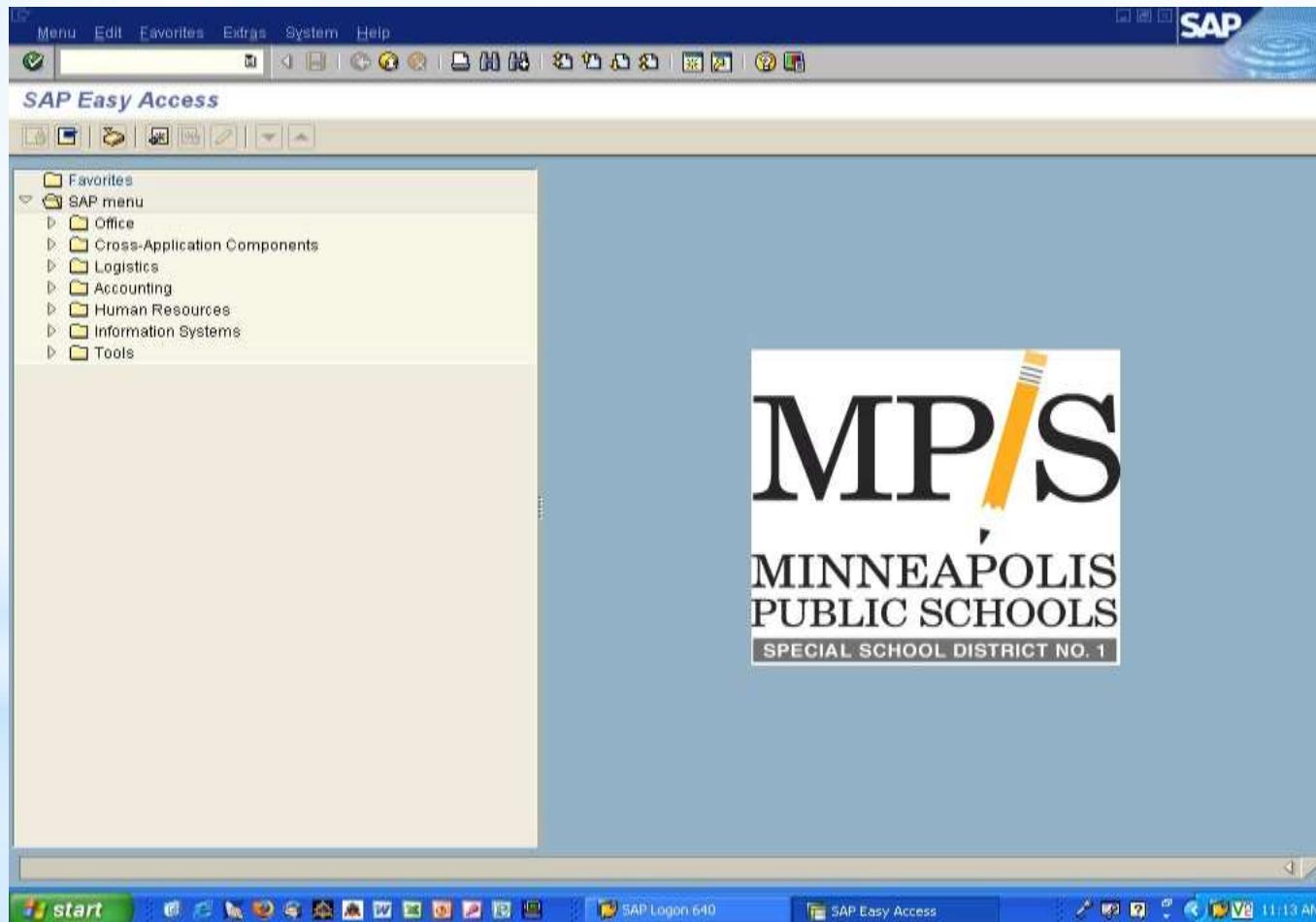
- You can use upper case letters or lower case letters in your password (SAP)
- \* R/3 does not distinguish between upper and lower case letters).
- You can use any combination of characters (a ..... z, 0.....9, or punctuation marks)

### Password restrictions

- \* You **cannot** begin a password with:
  - ?, !, or a blank space
  - three identical characters (fffce).
  - any sequence of three characters that are contained in your user name (for
    - \* example, using “bill,” if your user name is 99biller)
- \* **Other bad ideas:**
  - Do not use pass as your password
  - Do not use any of your last five passwords

## Main Menu Screen

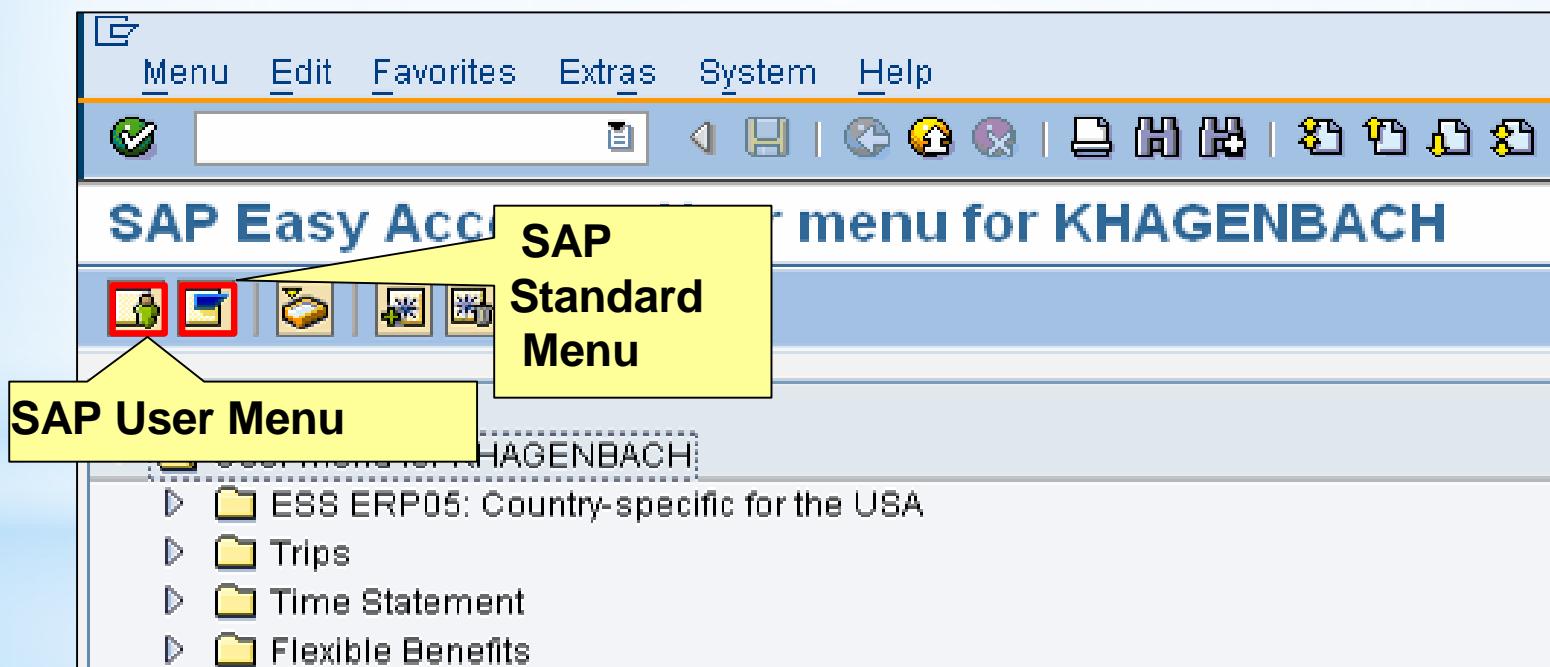
The main menu screen is displayed (standard SAP)



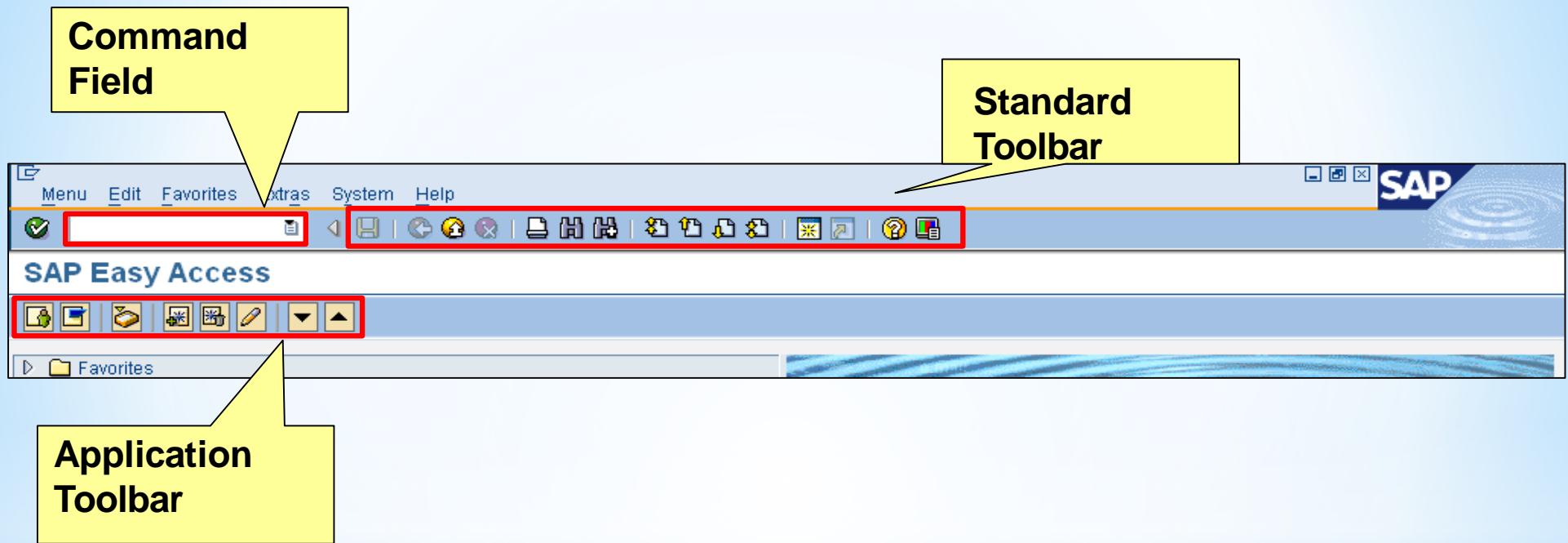
# SAP Menus

The default screen is called the *SAP Easy Access Screen*.

- You can switch from one menu to the other by selecting the appropriate icon
- When you log on, you will see either your user menu (specific to your role), or the SAP standard menu (lists all transactions)

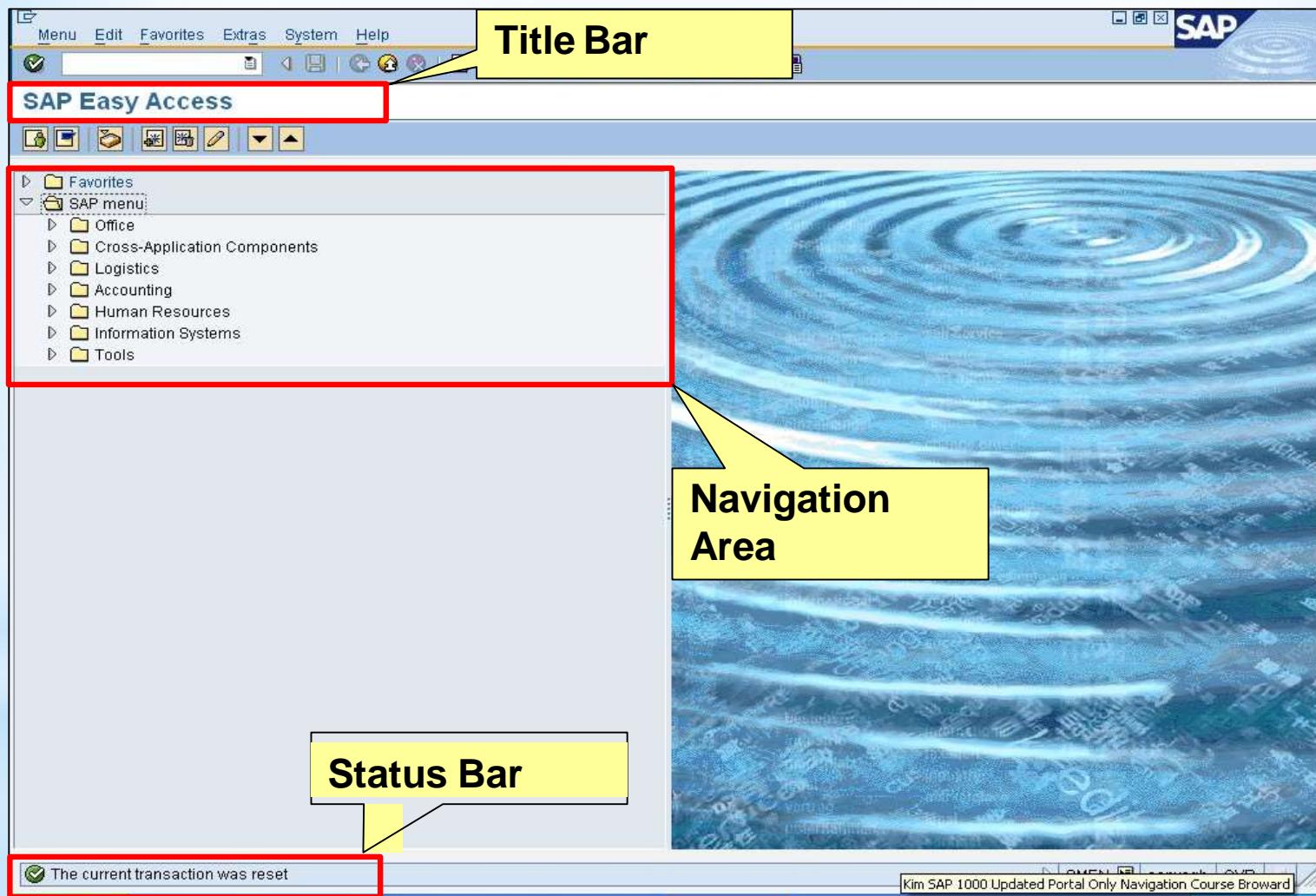


# SAP Easy Access Screen and Toolbars



**SAP is a Windows-based system. You can navigate in SAP using buttons, toolbars and windows the same way you would in other Windows applications like Word or Excel.**

# SAP Easy Access Screen



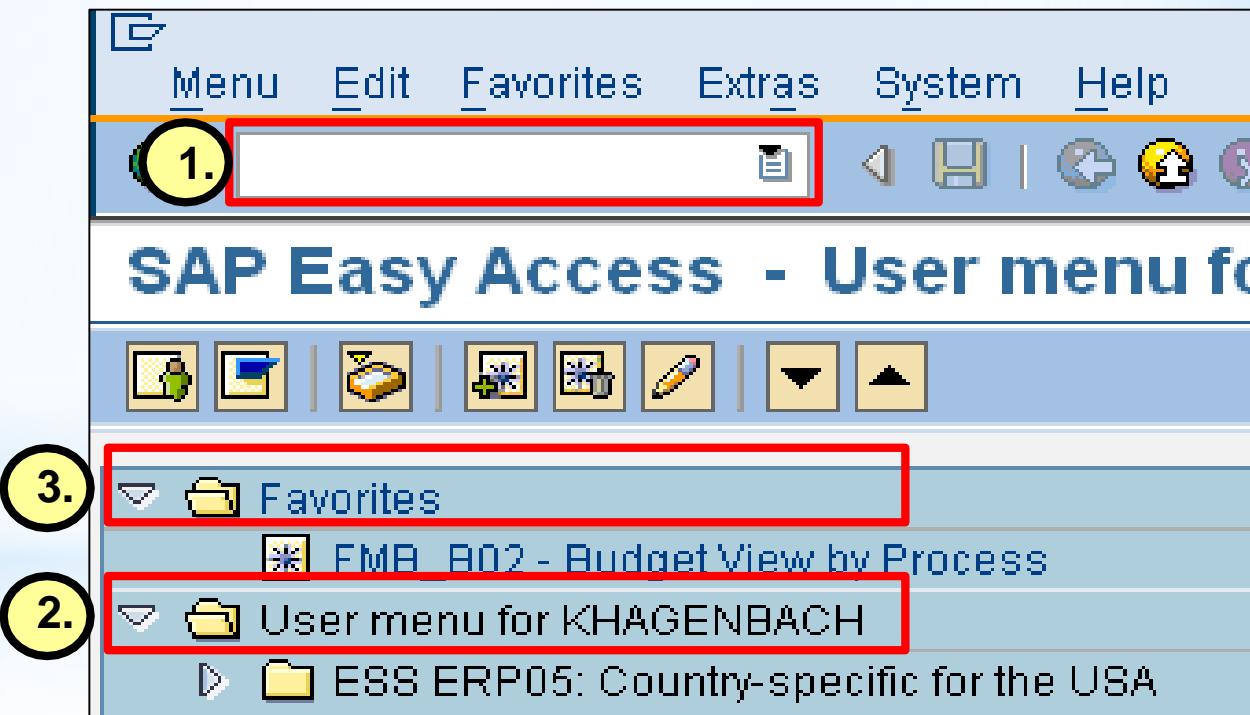
- What is a transaction?

**Transactions let users to create, change, or display data or run a report in SAP.**

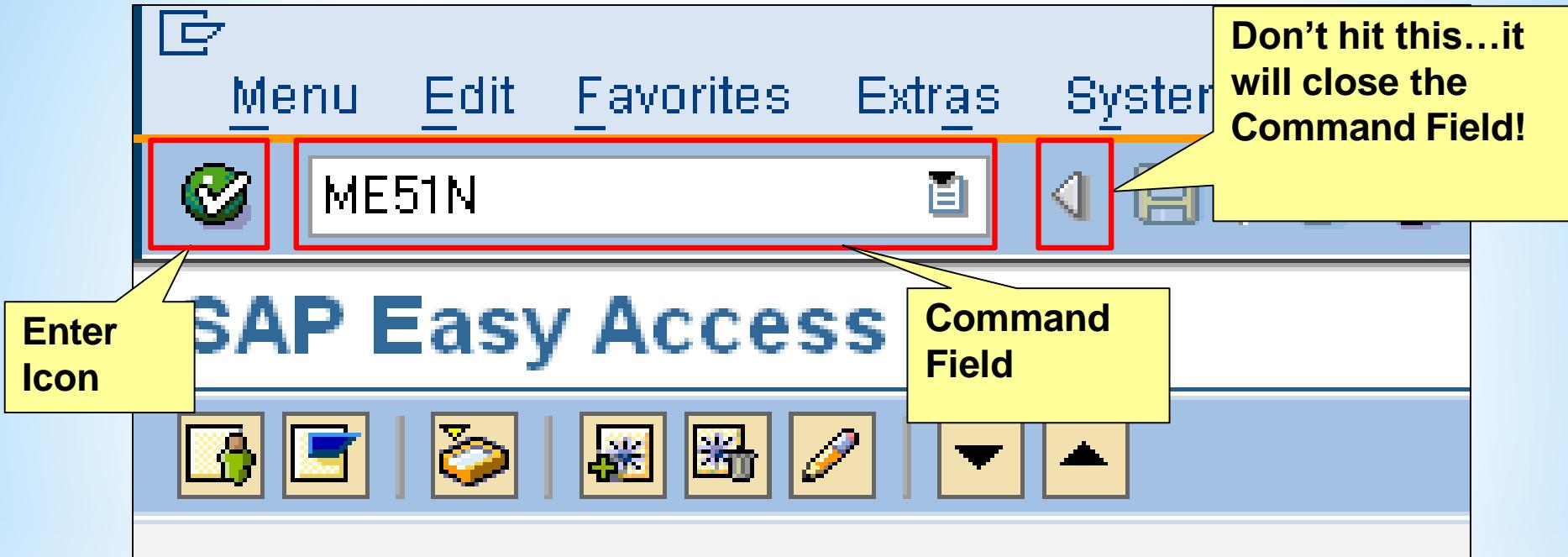


There are three ways to access transactions in SAP:

1. Command Field
2. User or SAP menus
3. Favorites

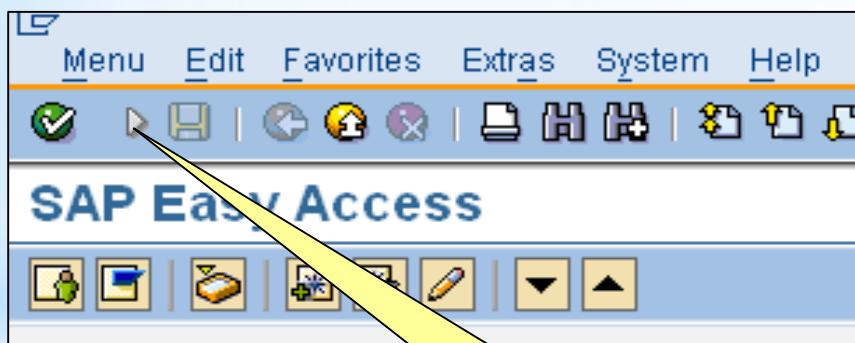


# Using the Command Field

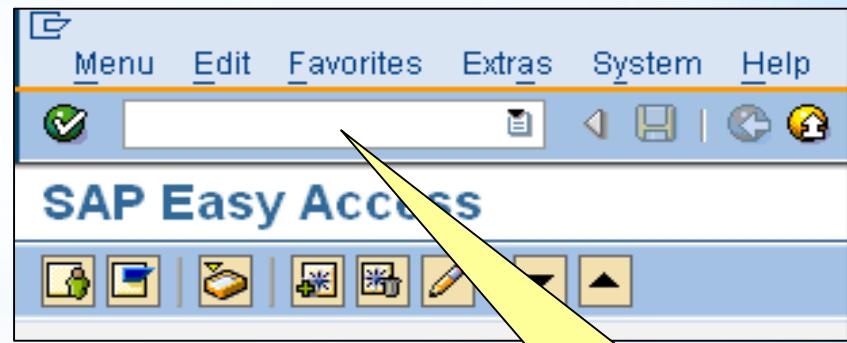


- Each transaction in SAP has a code. You can use the Transaction Code instead of the menu path to navigate to the transaction (it can consist of letters, numbers, or a combination)
- Type the Transaction Code in the Command Field (ME51N was selected above) and press Enter on the keyboard or click the Enter icon to navigate to that transaction

# Closed Command Field



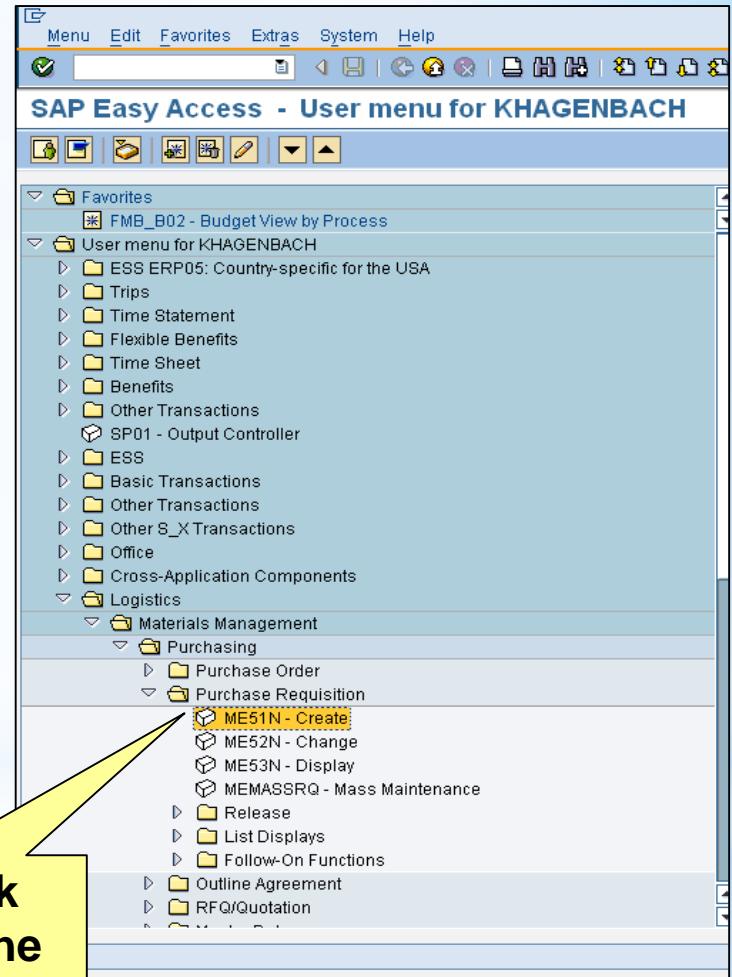
Select to Re-  
Open the Fast  
Path Field



Now you can  
enter your  
transaction  
code

# Navigating Using the User Menu

- The user menu contains a list of transactions based on your role (menu path)
- Some of these transactions are within folders
- You can navigate to these transactions by double clicking on the name of the transaction



## Is there an Easier Way to Navigate?

- How can I easily get to where I need to be?

**Set up Favorites!**



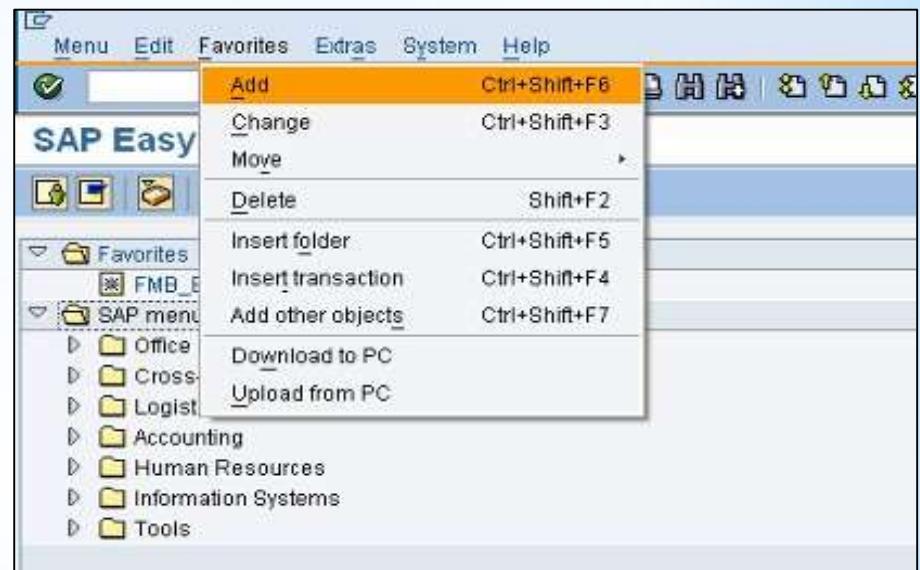
## Favorites

You can set up links to commonly used transactions in the Favorites folder.



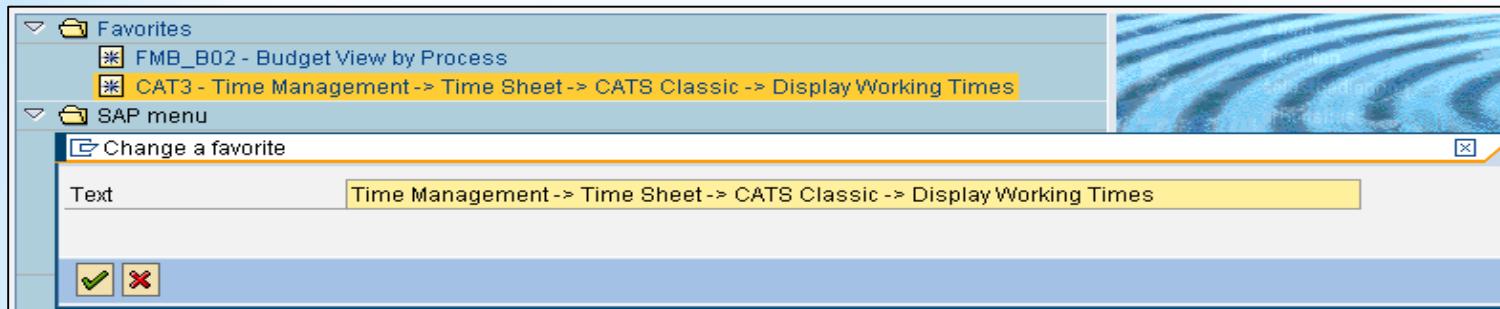
## Creating a Favorite

- Select the transaction from menu path
- From the menu bar in the Easy Access Screen, select Favorites>Add to create a shortcut to the transaction

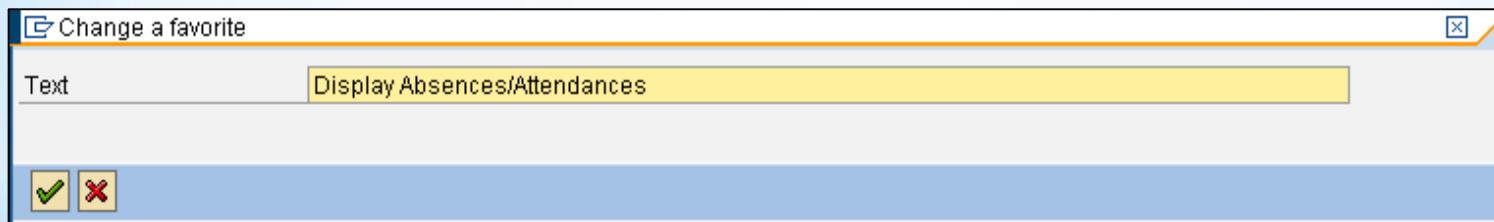


# Changing the name of a favorite

Select the favorite you want to change From Menu Bar select Favorites>Change



Enter the name change then green  
check



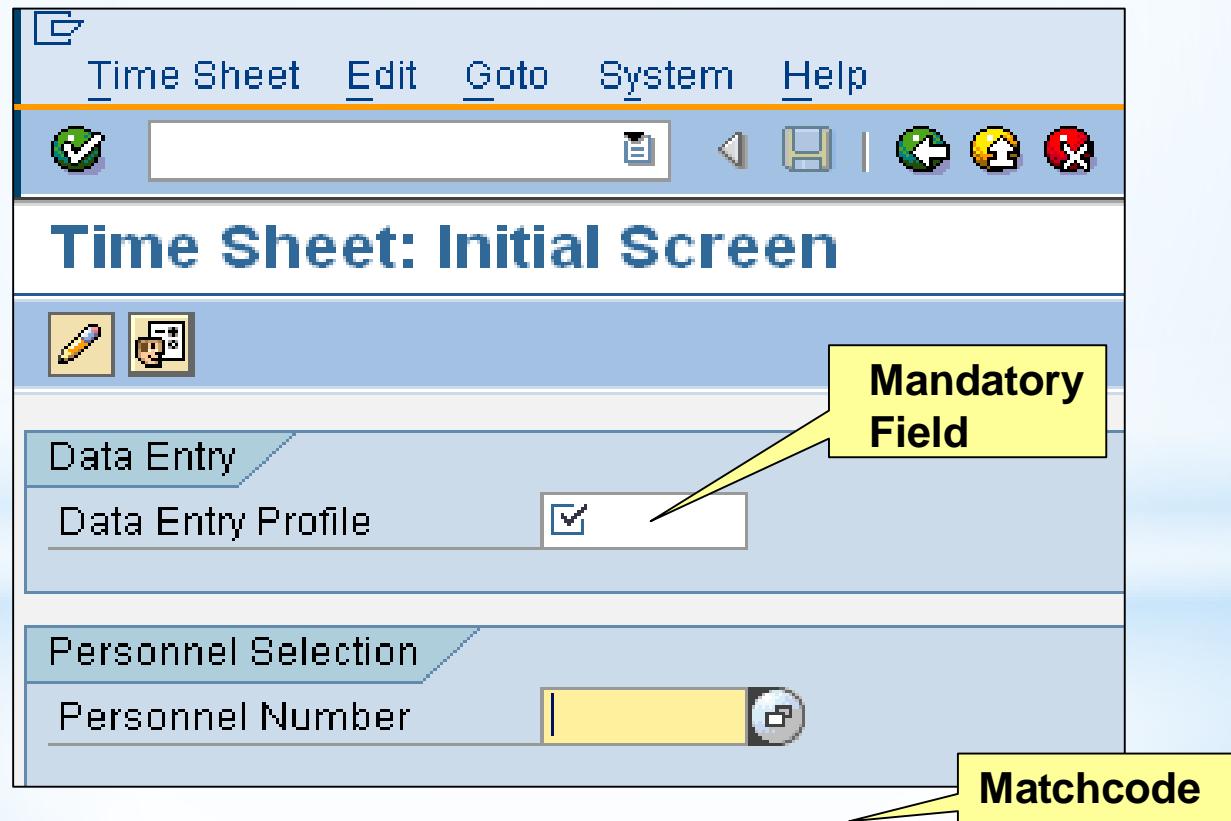
Name has been changed in  
Favorites



# Other SAP Basics

# Types of Fields

- Mandatory fields have a check mark
- Optional fields are blank
- Fields with match codes (drop down icon) allow searching on the field for allowed entries



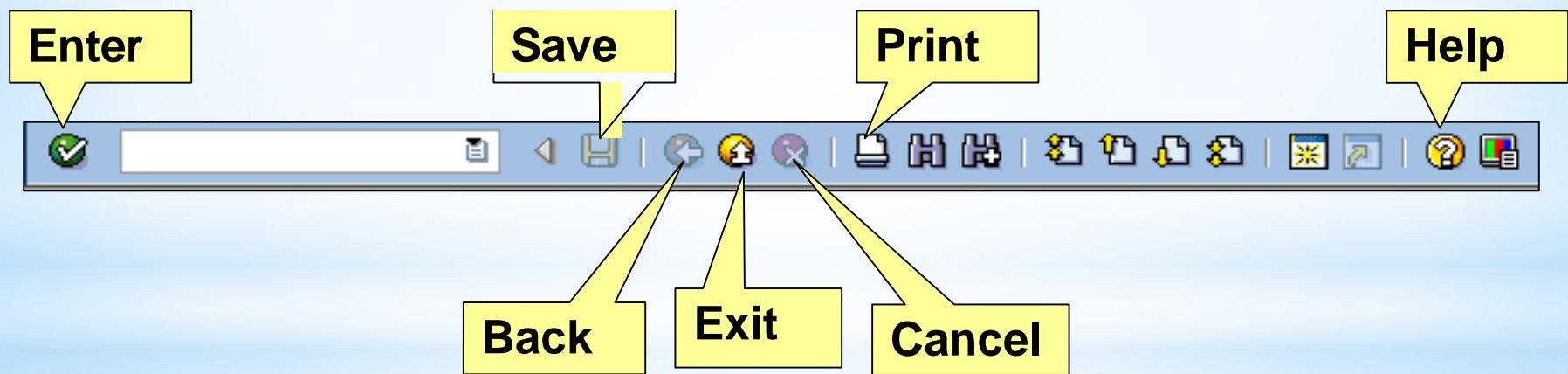
# Standard Toolbar Icons

- The Standard Toolbar appears on all screens, not just the Easy Access Screen
- However, if an icon is gray on a screen, it is not active and cannot be used
- The meaning of an icon can change, depending on which screen it is located

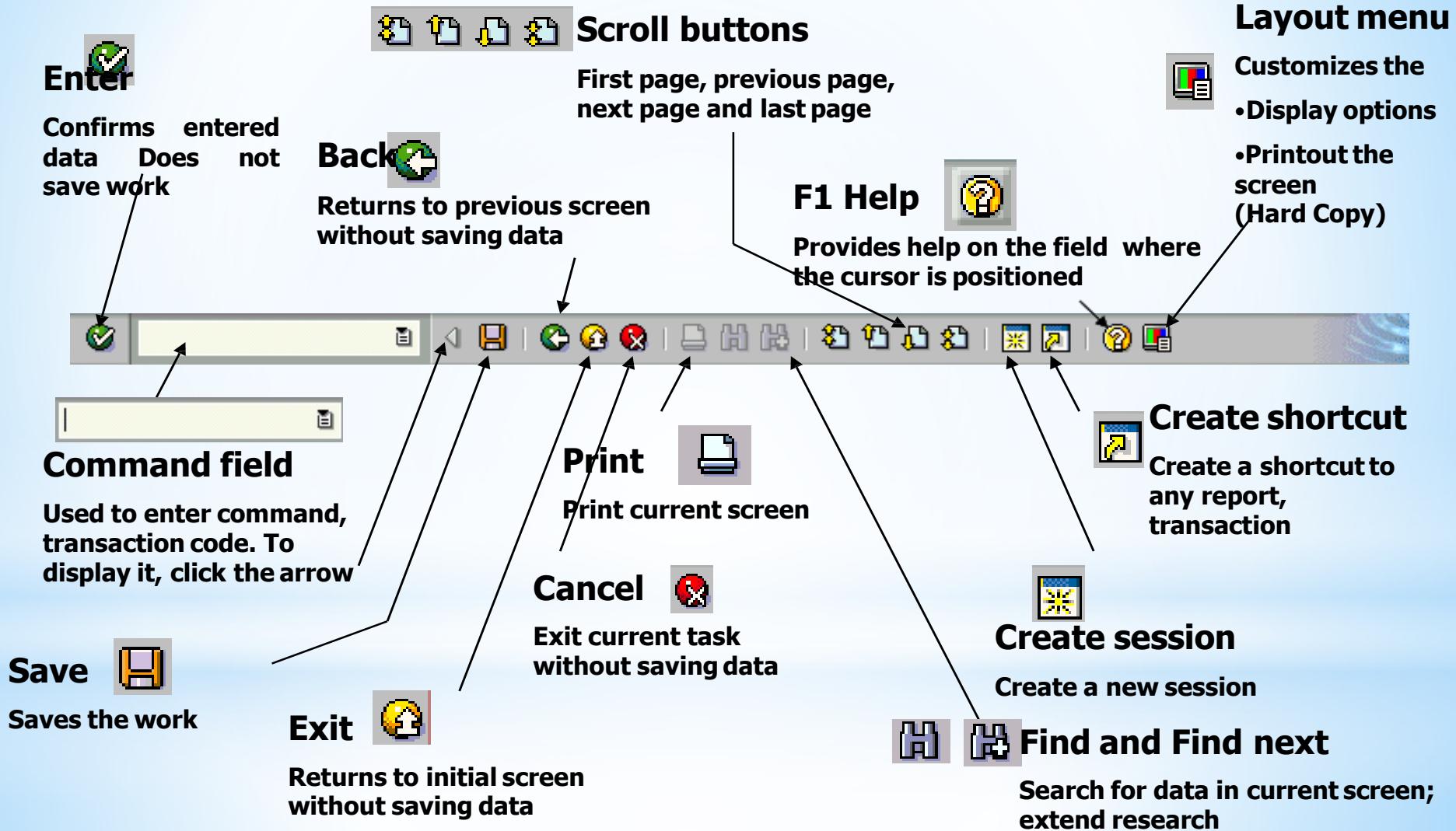


## Other Key Icons

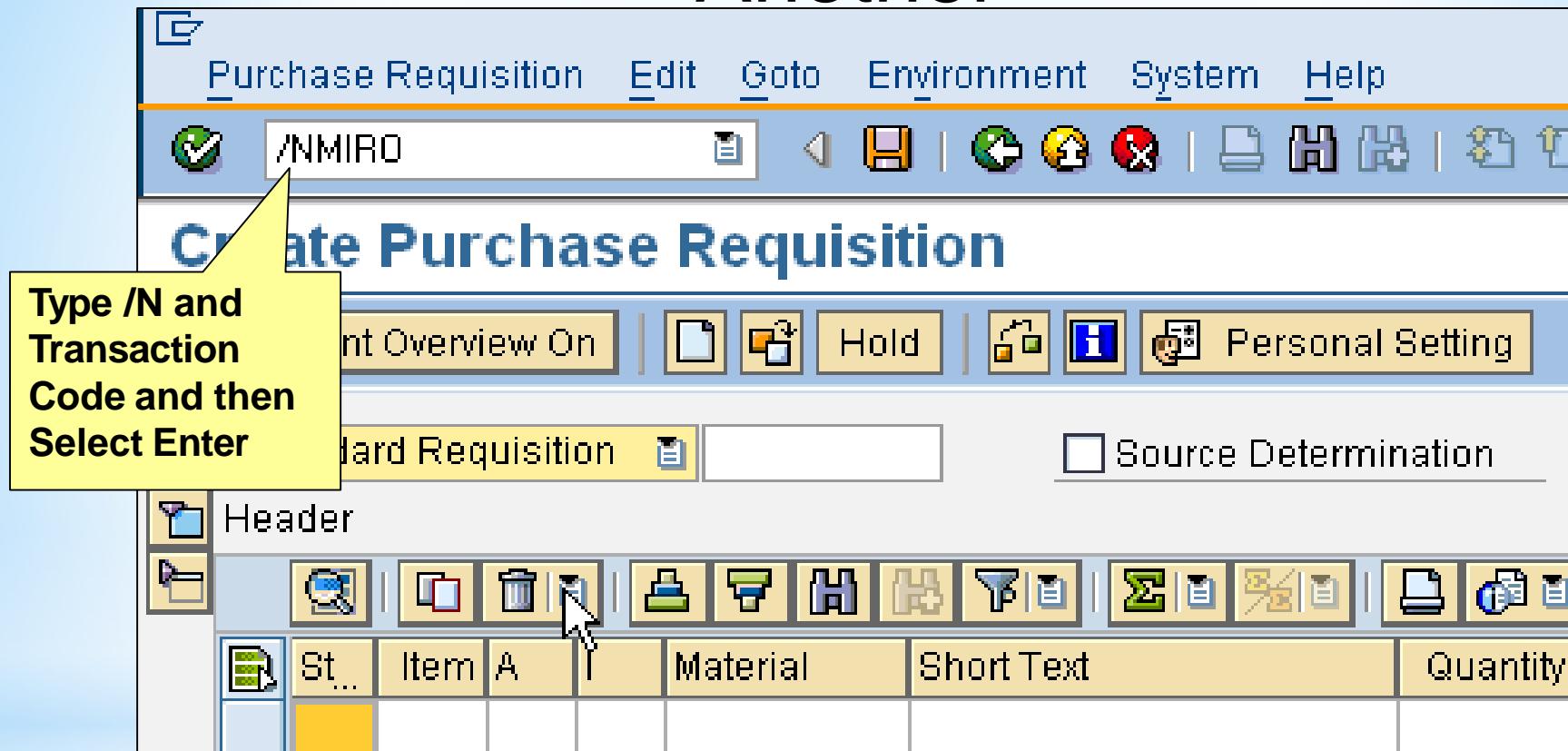
- To determine what each icon represents on the menu bar, place the cursor on the icon. Balloon help provides the icon name and the associated function key.



# Typical Icons



# Moving from One Transaction to Another



You must type **/N** before the transaction code to move from one transaction to another

# System Messages

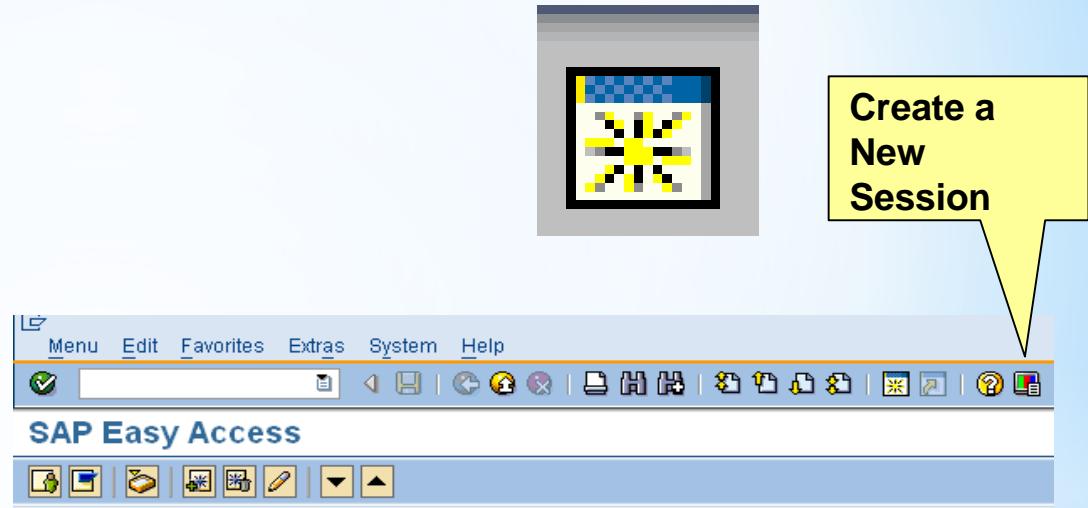
Message Type	Code	Message Description
Error Messages		Indicates a problem that must be corrected before continuing.
Information Messages		No action is required. SAP is informing you of a particular fact or condition. However, you must hit Enter to proceed past the message.
Warning Messages		Indicates there may be a problem with the data you have entered. You may have to correct the problem before continuing.

Notification 1000000206 saved

- Train your eye to look at the bottom of the screen for system messages.
- You must correct an error message to proceed.
- You must hit Enter to proceed past a warning message.
- An information message usually appears when you complete a transaction, such as giving you the number of a purchase requisition you just created.

# Creating a New Session

- A session is like a window within SAP
- Opening up a new session allows you to work on more than one thing at the same time
- Follow: System> Create Session or Select the Create Session button from the standard toolbar
- You must have chosen the Windows GUI, not the Web GUI for this to work
- You can have up to six sessions running simultaneously
- The Create a New Session Button (for PCs only)



## Starting a New Session using the Command Field

- Type **/O** before the transaction code and hit Enter
- You will be taken directly to the new transaction in a new session without closing what you were working on
- You can do this from any screen



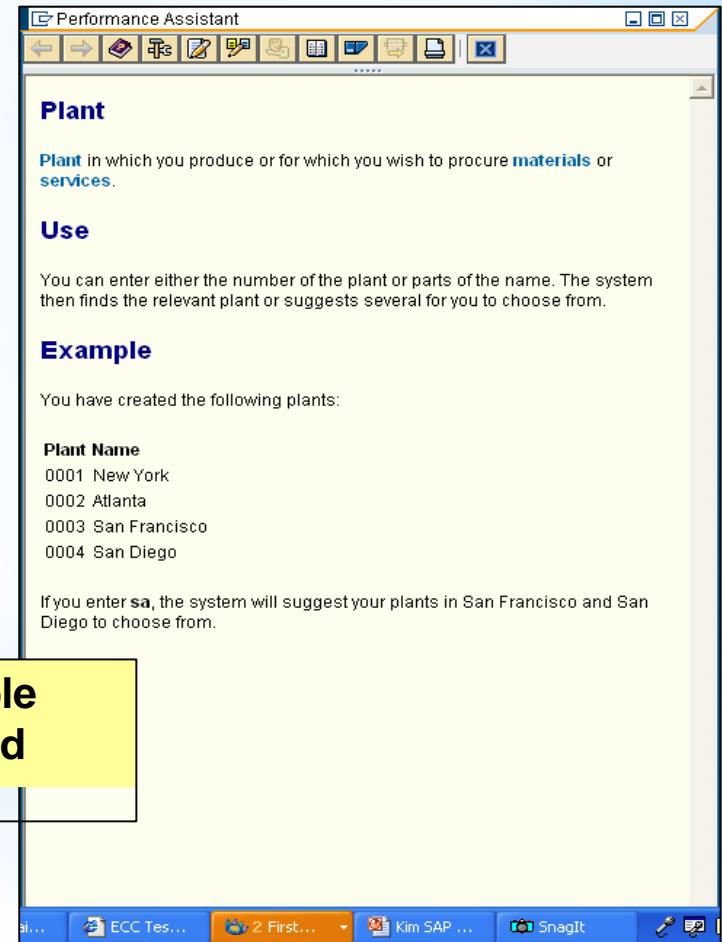
## Switching between Sessions

- Click the session represented by a button at the bottom of your screen, just like you do for any windows program



# Field Help (F1)

- Put your cursor in a field and select F1 or the field help icon (the yellow question mark on the standard toolbar)
- A pop up box will appear that tells you what the field means



# Ending a Session

- Save your work before you close the session.
- From the menu bar choose System> End Session



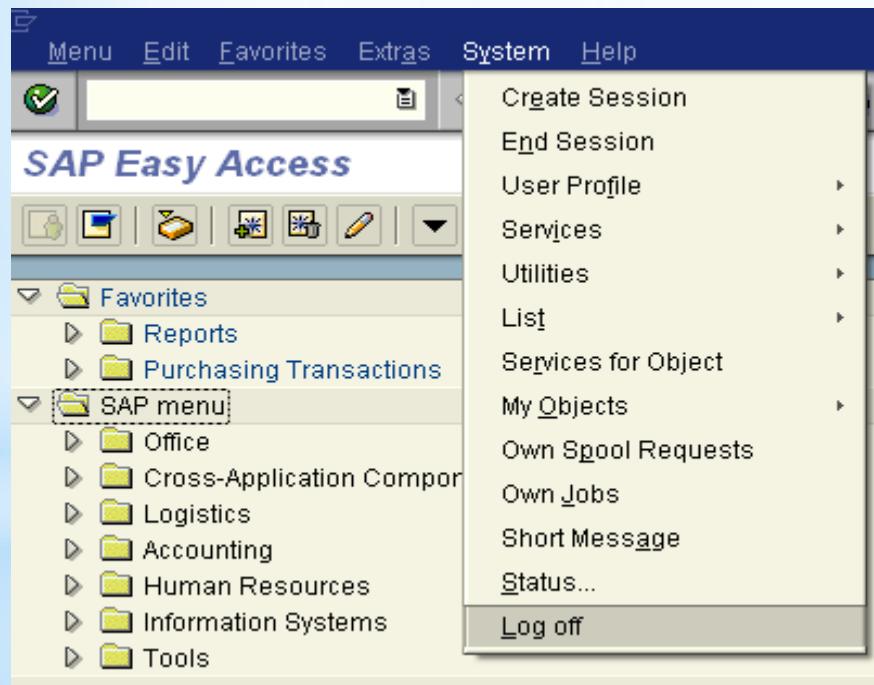
- Or Click  in the upper right hand corner of the screen

# Logging Off of SAP

- Select the yellow arrow at the top of any screen
- Or select System: Log off



> You will be warned about saving your data even if you have saved it!



> Select “Yes” to log off

