

MIS 5121: Auditing Controls in ERP Systems

Business Processes, ERP Systems and Controls

Introduction: Course, Business Processes, ERP Systems, Controls and SAP

Introduction: Course

Course [Web Home](#)

See [Syllabus](#)

View [Schedule](#)

View Roster

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 <i>Submission Sunday</i>	2 <i>Write</i>	3 <i>Write</i>	4 <i>Write</i>	5 <i>Research Publishers</i>	6 <i>Edit/ Revise</i>	7 <i>Read</i>
8 <i>Submission Sunday</i>	9 <i>Write</i>	10 <i>Write</i>	11 <i>Write</i>	12 <i>Research Agents</i>	13 <i>Edit/ Revise</i>	14 <i>Read</i>

Typical Weekly Cycle

- You: Read, view, etc. content for week (see Schedule menu)
- Me: Post Questions (Thursday am)
- You: respond to questions and read & respond to others answers (thru Tuesday - Noon)
 - Four (4) substantive comments each week considered a B
- Us: Class – Discuss outstanding issues, questions you have (Wednesday)
- Me: Post summary note (if any) (Thursday)

Introduction: Me and You



- Name
- Why in this course
 - OK to say 'it's Just a Requirement*
- What Supply Chain most experience with?
Role?
- Unique experience, skills you bring to the class
- What is your Accounting experience level?
 - Blog: Schedule -> First Half of Semester -> Week 1
Introduction -> Survey link

Brief Introduction: Me and You



You

- Name
- What is your Home Town

Me

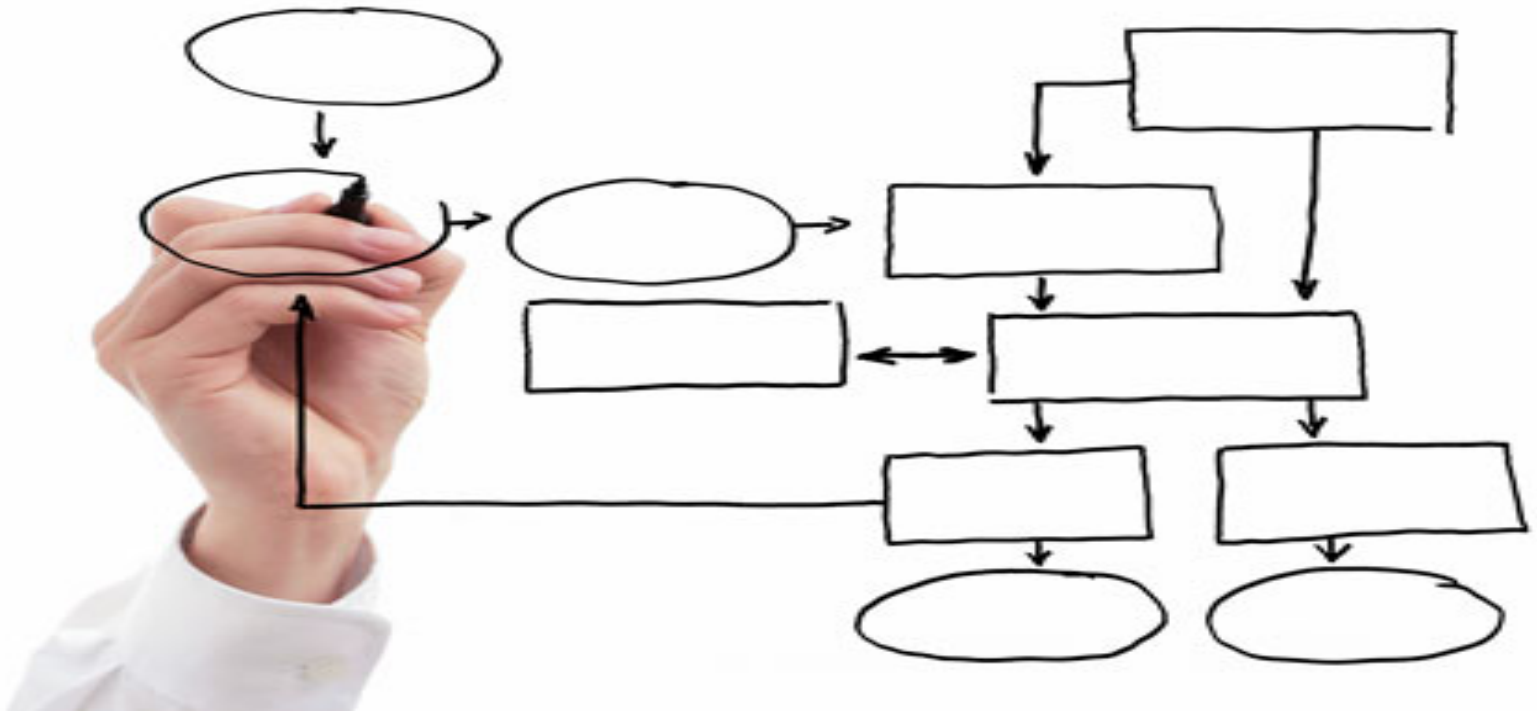
- What Supply Chain most experience with?
Role?
- Unique experience, skills you bring to the class

Why Intro eMail was Late



Columbo,
[Paraná](#) State,
Brazil





Business Processes, ERP Systems, & Controls

Case: Global Bike Inc. (GBI)

Company Background

Global Bike Inc., (GBI) is a world class bicycle company serving the professional and “prosumer” cyclists for touring and off-road racing. GBI’s riders demand the highest level of quality, toughness and performance from their bikes and accessories.

Product development is the most critical element of GBI’s past and future growth. GBI has invested heavily in this area, focusing on innovation, quality, safety and speed to market. GBI has an extensive innovation network to source ideas from riders, dealers and professionals to continuously improve the performance, reliability and quality of its bicycles.

In the touring bike category, GBI’s handcrafted bicycles have won numerous design awards and are sold in over 10 countries. GBI’s signature composite frames are world-renowned for their strength, light weight and easy maintenance. GBI bikes are consistently ridden in the Tour de France and other major international road races. GBI produces two models of their signature road bikes, a deluxe and professional model. The key difference between the two models is the type of wheels used, aluminum for the basic model and carbon composite for the professional model.

GBI’s off-road bikes are also recognized as incredibly tough and easy to maintain. GBI trail bikes are the preferred choice of world champion off-road racers and have become synonymous with performance and strength in one of the most grueling sports in the world. GBI produces two types of off-road bike, a men’s and women’s model. The basic difference between the two models is the smaller size and ergonomic shaping of the women’s frame.

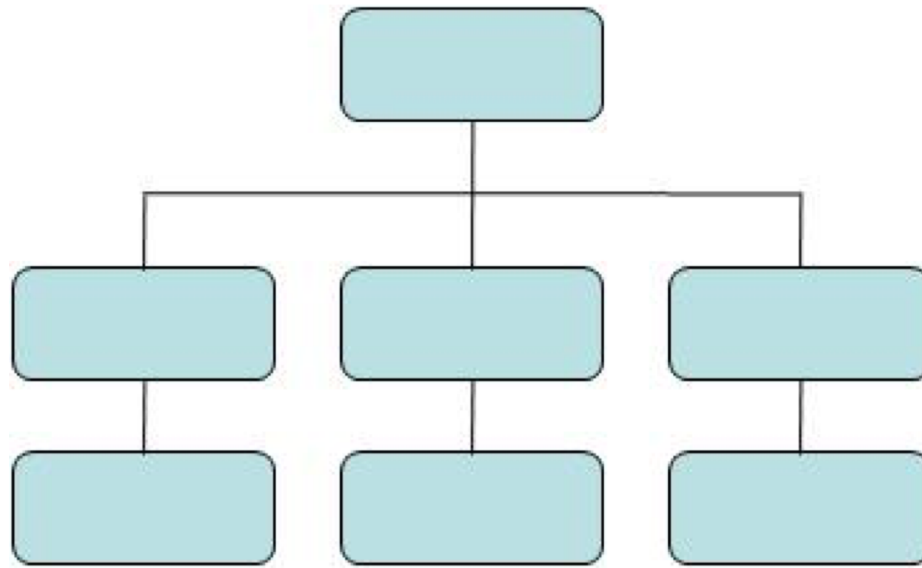
GBI also sells an accessories product line comprised of helmets, t-shirts and other riding accessories. GBI partners with only the highest quality suppliers of accessories which will help enhance riders’ performance and comfort while riding GBI bikes.

Business Function

Definition

‘An operation / group who perform related tasks routinely to achieve a part of an organization’s mission .’

Business Dictionary



What are GBI's Business Functions?

Function: 'An operation / group who perform related tasks routinely to achieve a part of an organization's mission ..'

Business Dictionary

- _____
- _____
- _____
- _____
- _____



What are GBI's Business Functions?

Function: 'An operation / group who perform related tasks routinely to achieve a part of an organization's mission ..'

Business Dictionary

- Research and Development
- Design
- Manufacturing
- Marketing – Sales
- Finance - \$\$ in, \$\$ Out, budgeting, ...
- Inventory - warehouse



Business Process

Definition

‘A series of logically related activities / tasks performed together to produce a defined set of results.’

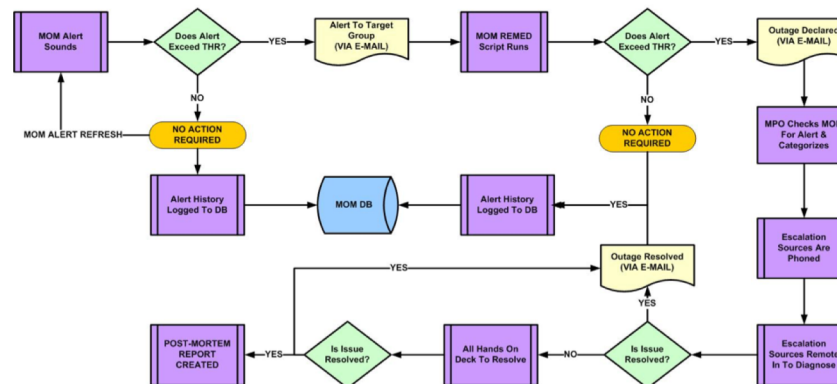
Business Dictionary

‘Actions an enterprise takes to achieve value creation’

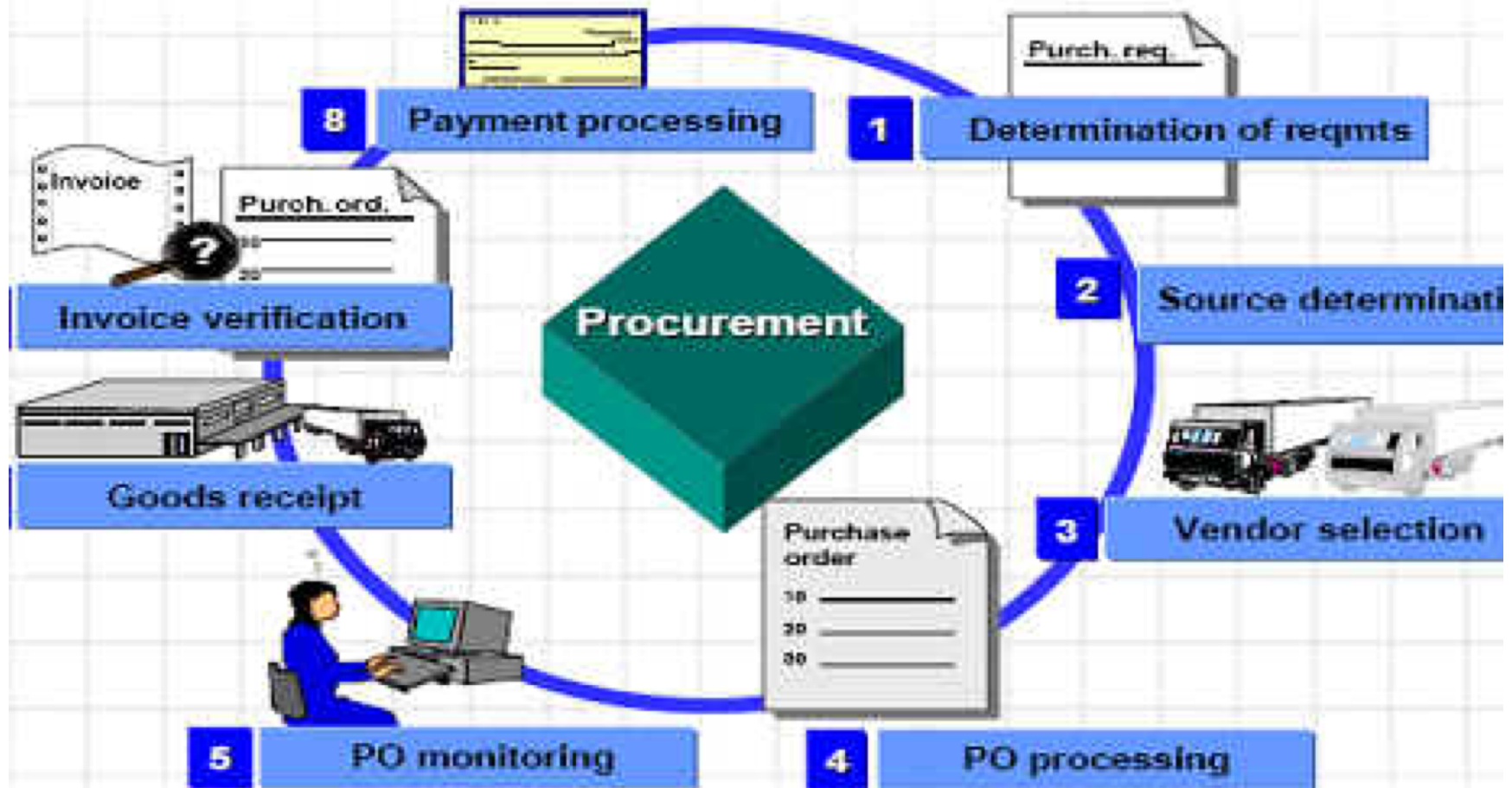
ISACA

‘A set of interactions leading toward a common business goal’

Gartner



Procurement Process



Business Process

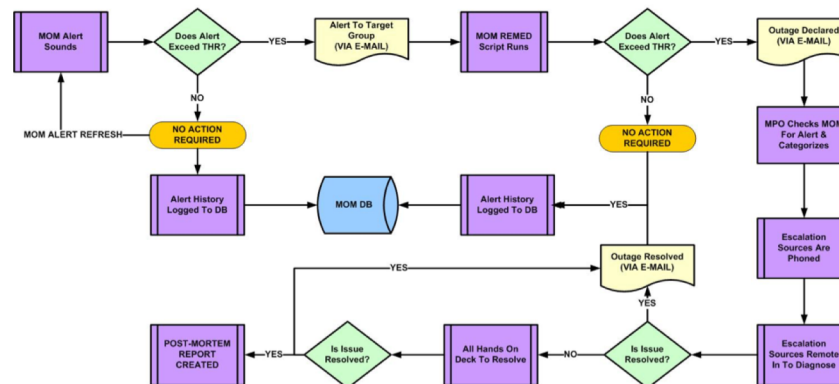
Definition

‘A set of interactions leading toward a common business goal’

Gartner

‘A set of activities, decisions, interactions and behaviors of people, systems, "things" (e.g. Internet of Things, robots, machines) and information that collectively impacts the attainment of desired business outcomes.’

Gartner



What are Business Processes of GBI?

- Procurement to Pay

- _____

- _____

- _____

- _____

- _____



What are Business Processes of GBI?

- Procurement to Pay
- Production
- Order to Cash
- Financial Accounting – Report and Report
- Compliance – laws / regulatory / etc.
- People – pay / hire / ...



Breakout Questions



GBI Business Functions

- _____
- _____
- _____

GBI Business Processes

- _____
- _____
- _____

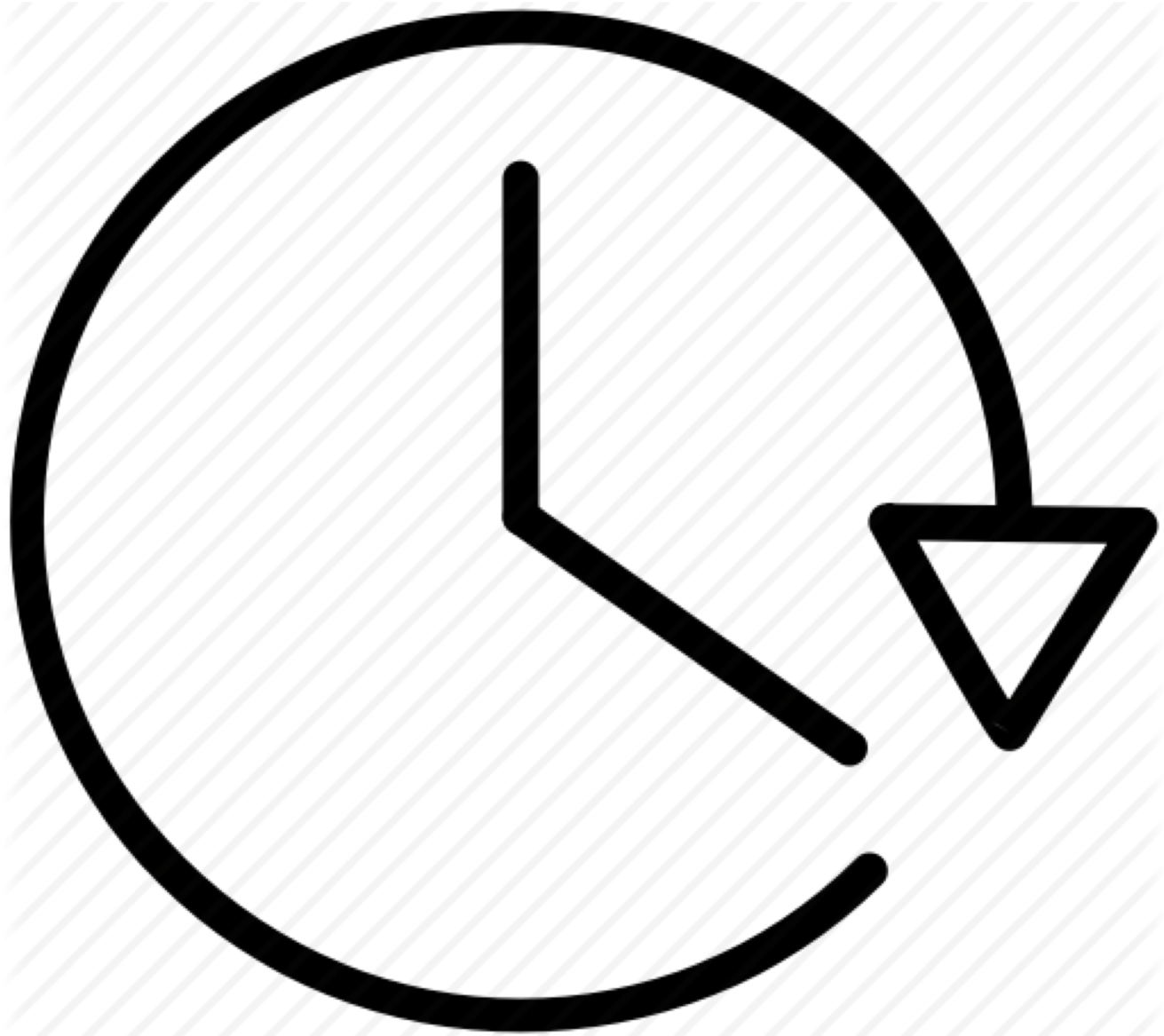
Does GBI Need Systems / Applications?

- _____
- _____
- _____

Breakout Activity – Rules



- Break into teams – max of 5 people / team
 - Diversity a must.
 - We'll do this each Learnathon – not same team
- Assignment – return via WebEx Notes or Word Document
- How: WebEx breakout?
- Time: assigned today 20 min (including break)
 - Start back **on-time**



Discussion

GBI Business Functions

- _____
- _____
- _____

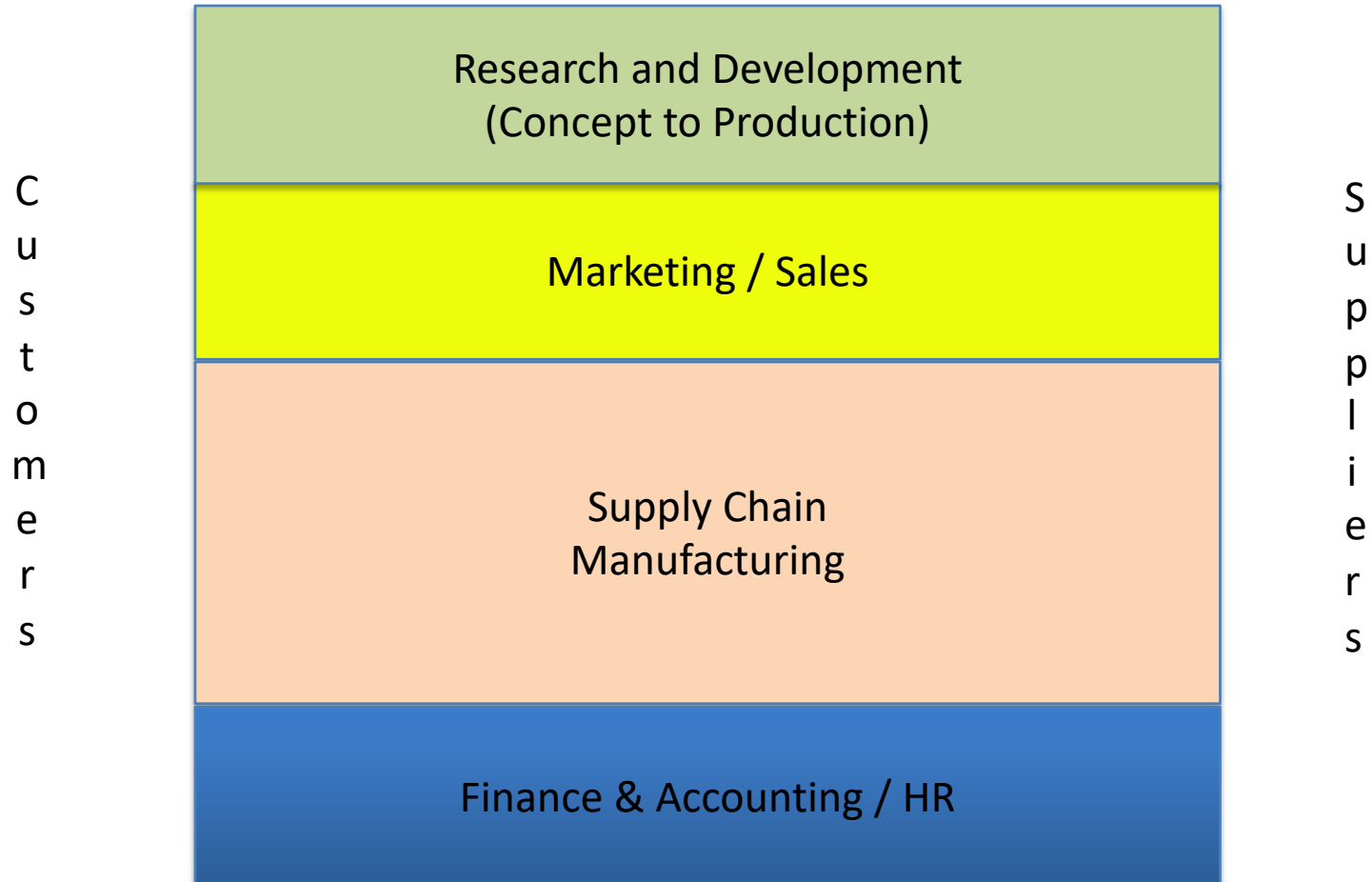
GBI Business Processes

- _____
- _____
- _____

Does GBI Need Systems / Applications?

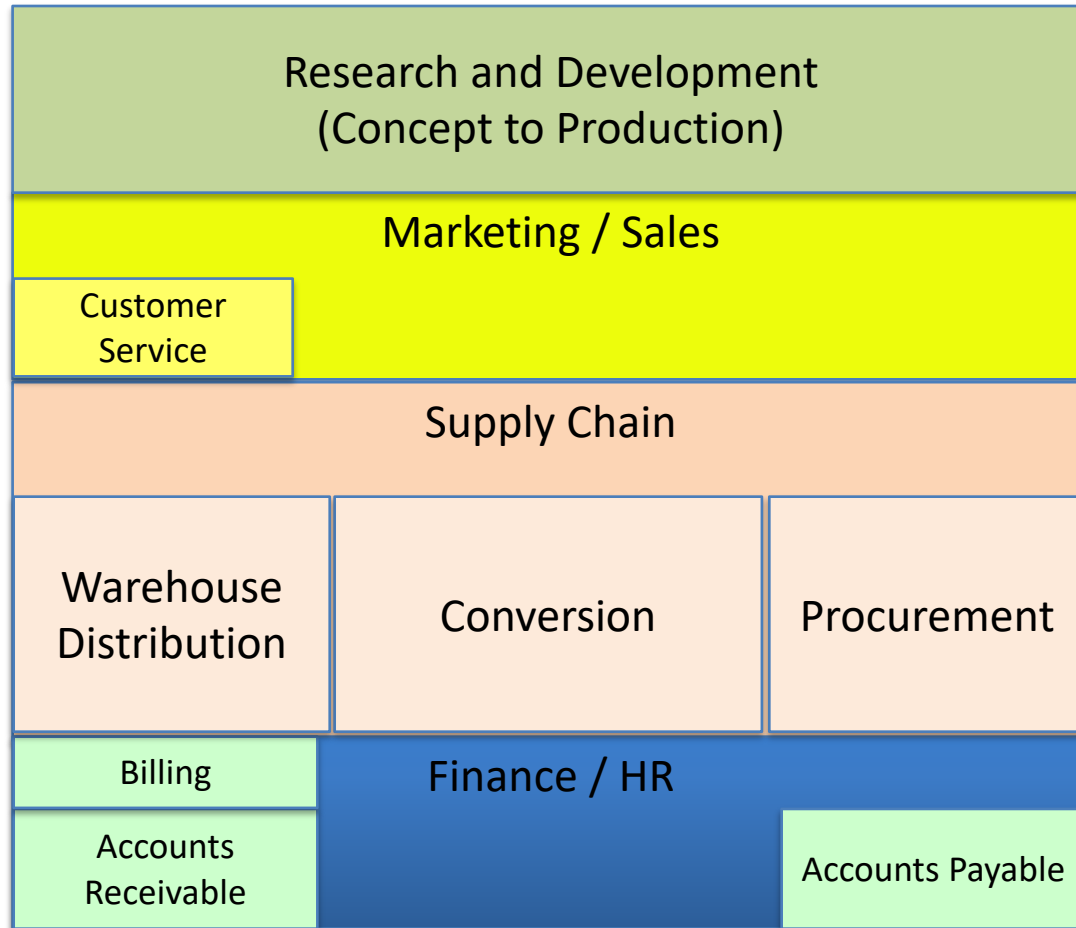
- _____
- _____
- _____

Business Functions / Organization



Global Bike Organization

C
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S
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Business Process

Definition

‘A series of logically related activities / tasks performed together to produce a defined set of results.’

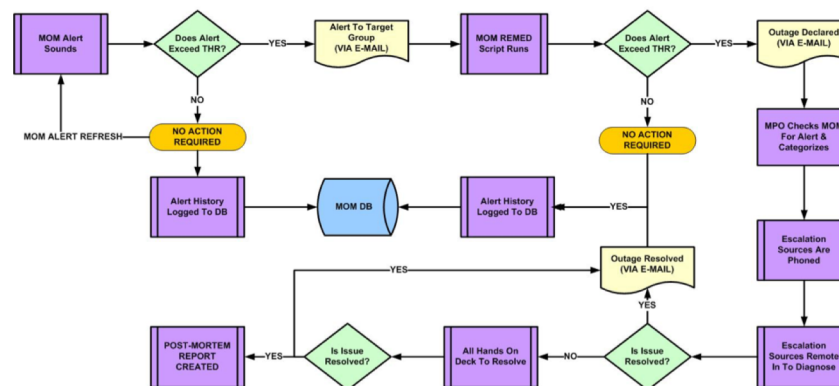
Business Dictionary

‘Actions an enterprise takes to achieve value creation’

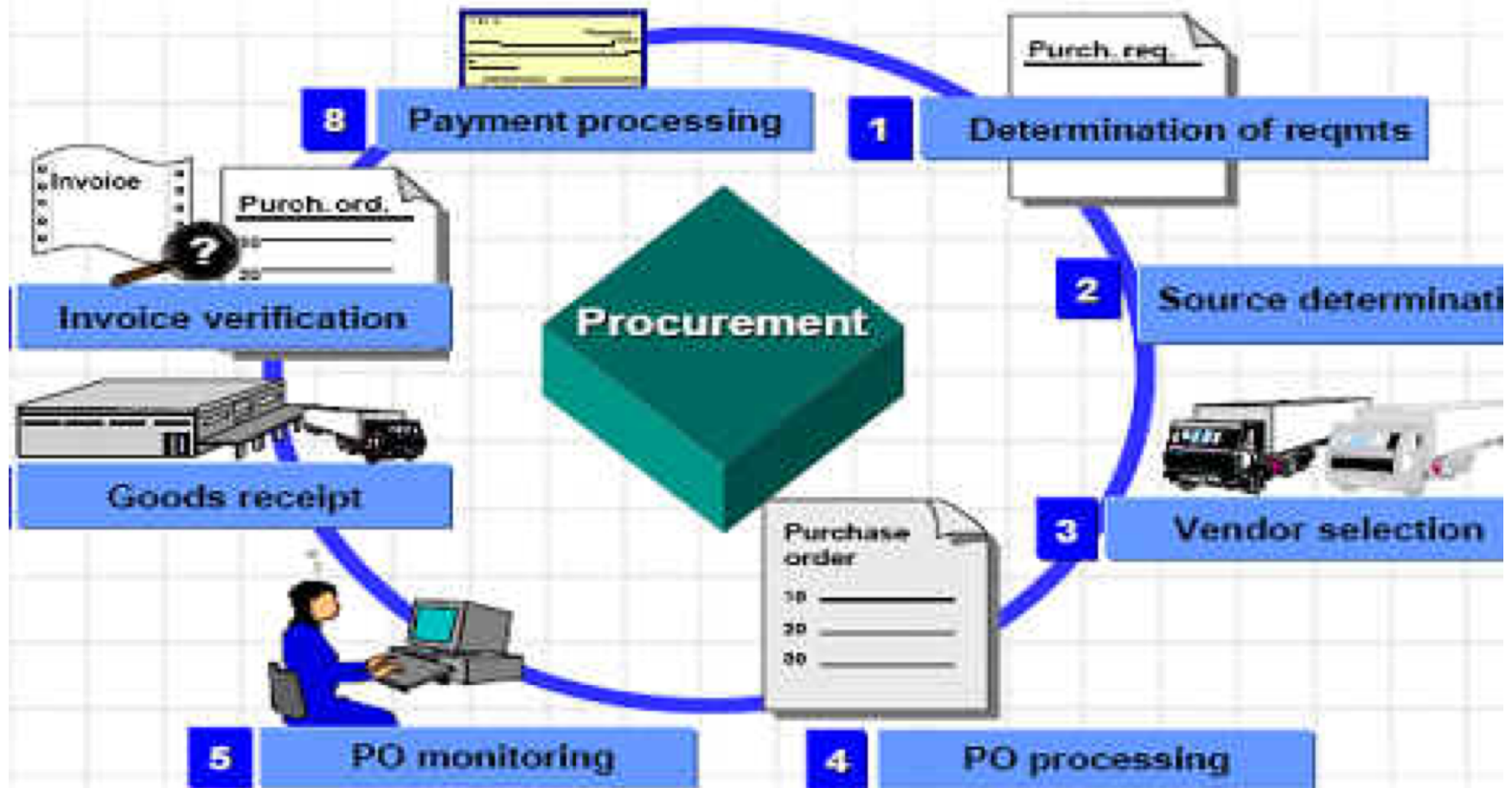
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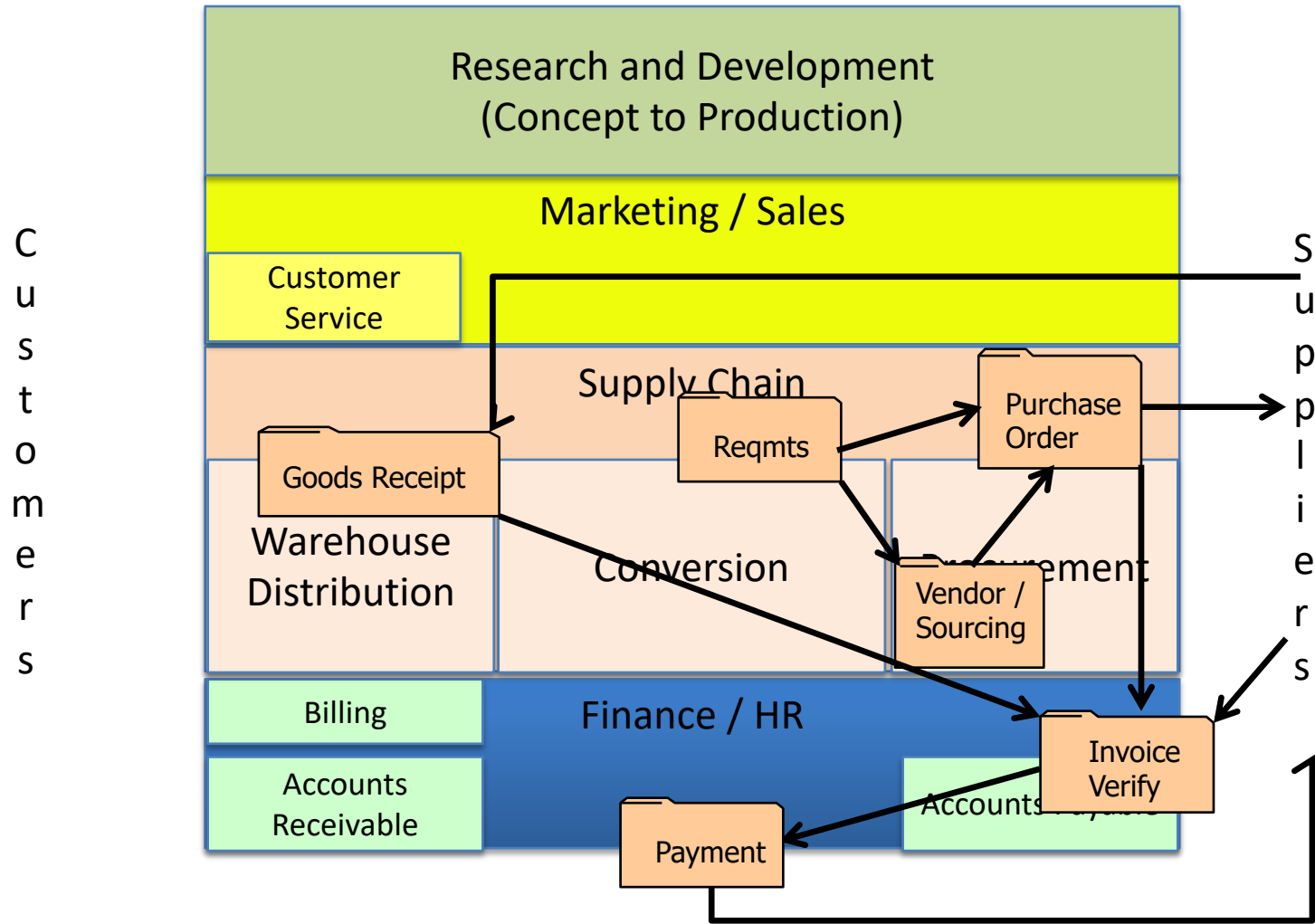
Gartner



Procurement Process

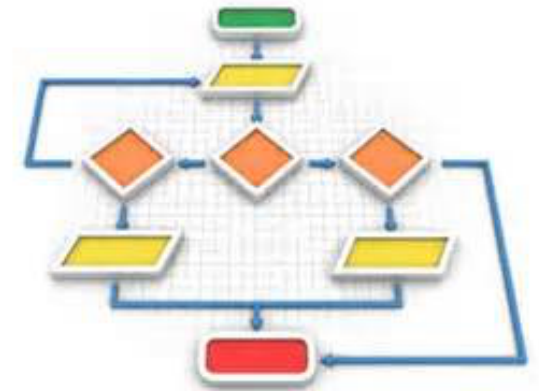


Procurement at GBI



Business Processes

- Sales
- Order to Cash
- Procurement to Pay
- Supply Chain Planning
- Manufacturing / Production
- Innovate / Commercialize
- People / Human Resources
- Finance / Record and Report



Business Process Vs. Function

Function

‘An operation / group who perform related tasks routinely to achieve a part of an organization’s mission ..’

Business Dictionary

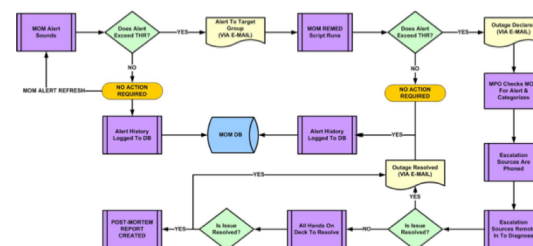
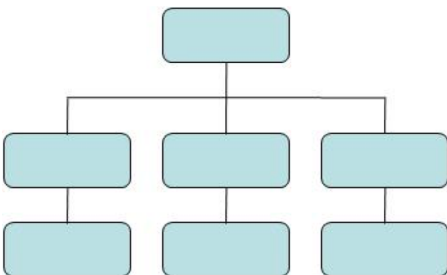
Process

‘A series of logically related activities / tasks performed together to produce a defined set of results.’

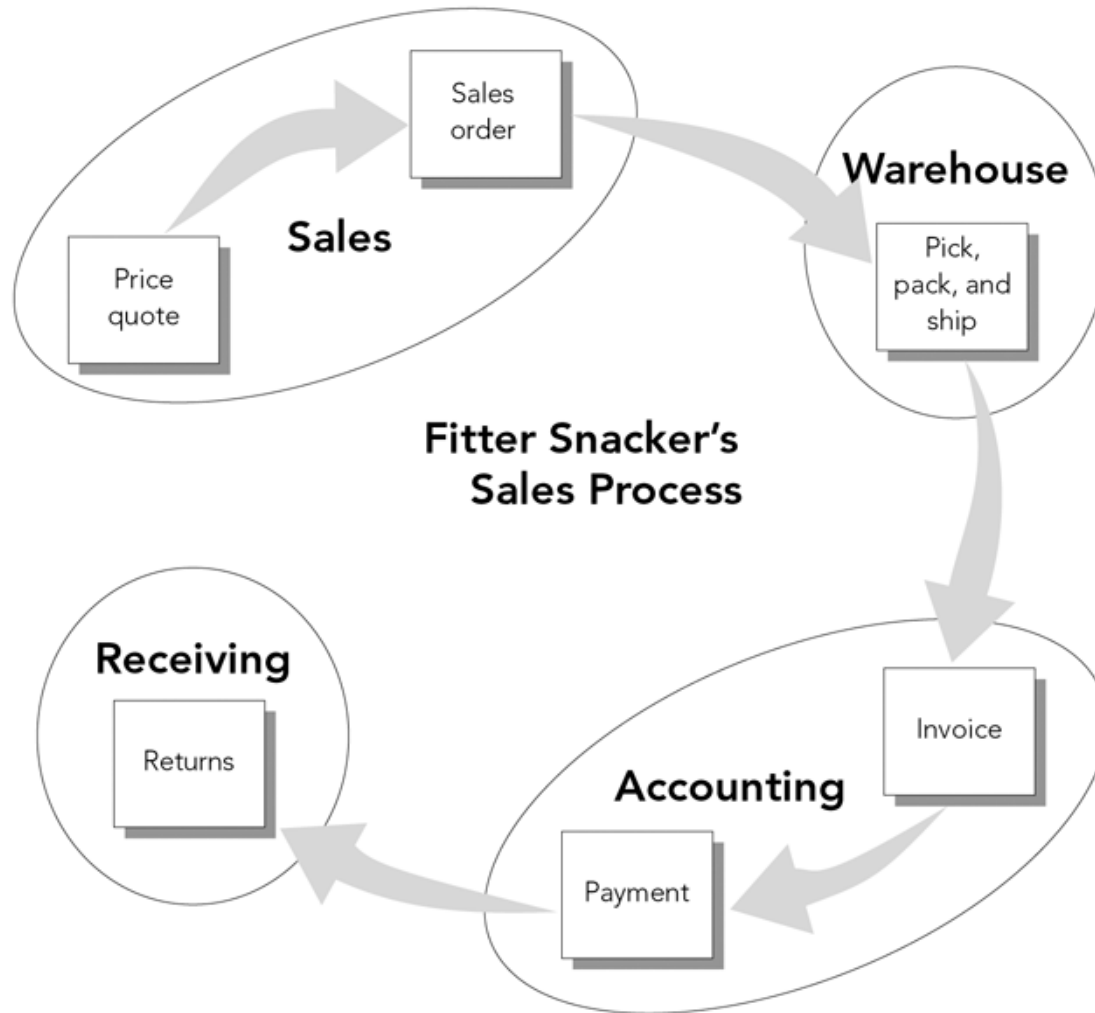
Business Dictionary

‘Actions an enterprise takes to achieve value creation ’

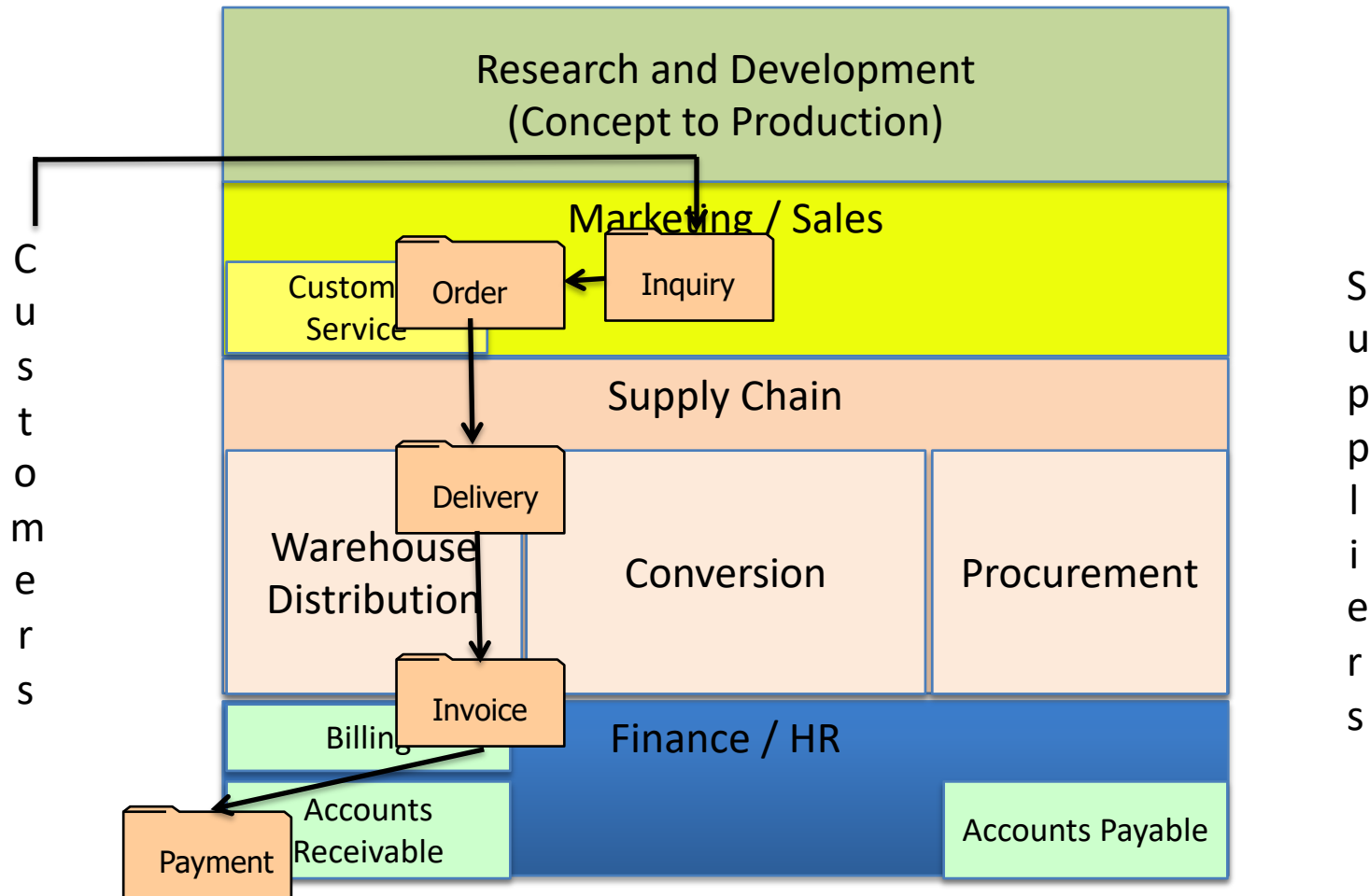
ISACA

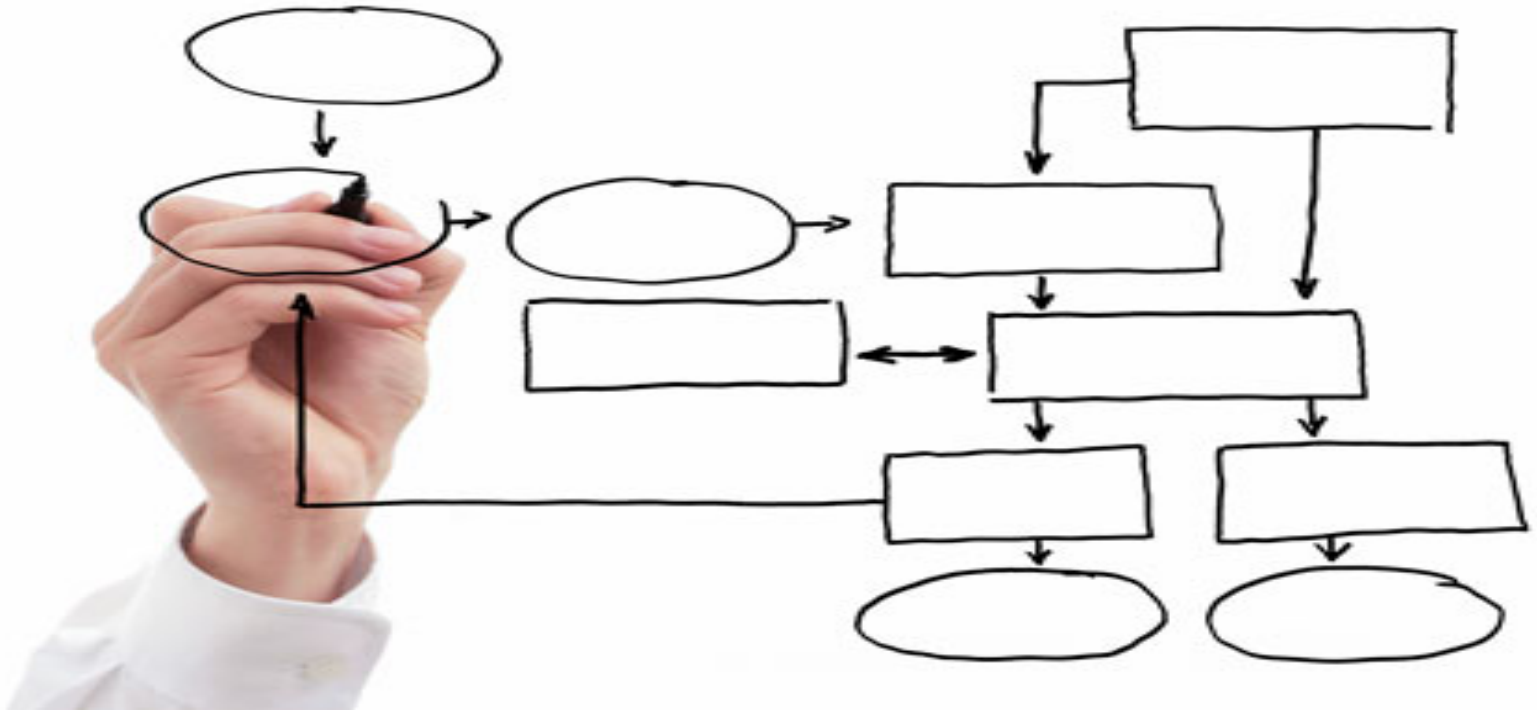


Order to Cash Process



Order to Cash at GBI





Business Processes,
ERP Systems,
& Controls

Does GBI Need Systems / Applications?

- _____
- _____
- _____
- _____
- _____
- _____

What are ERP Systems?

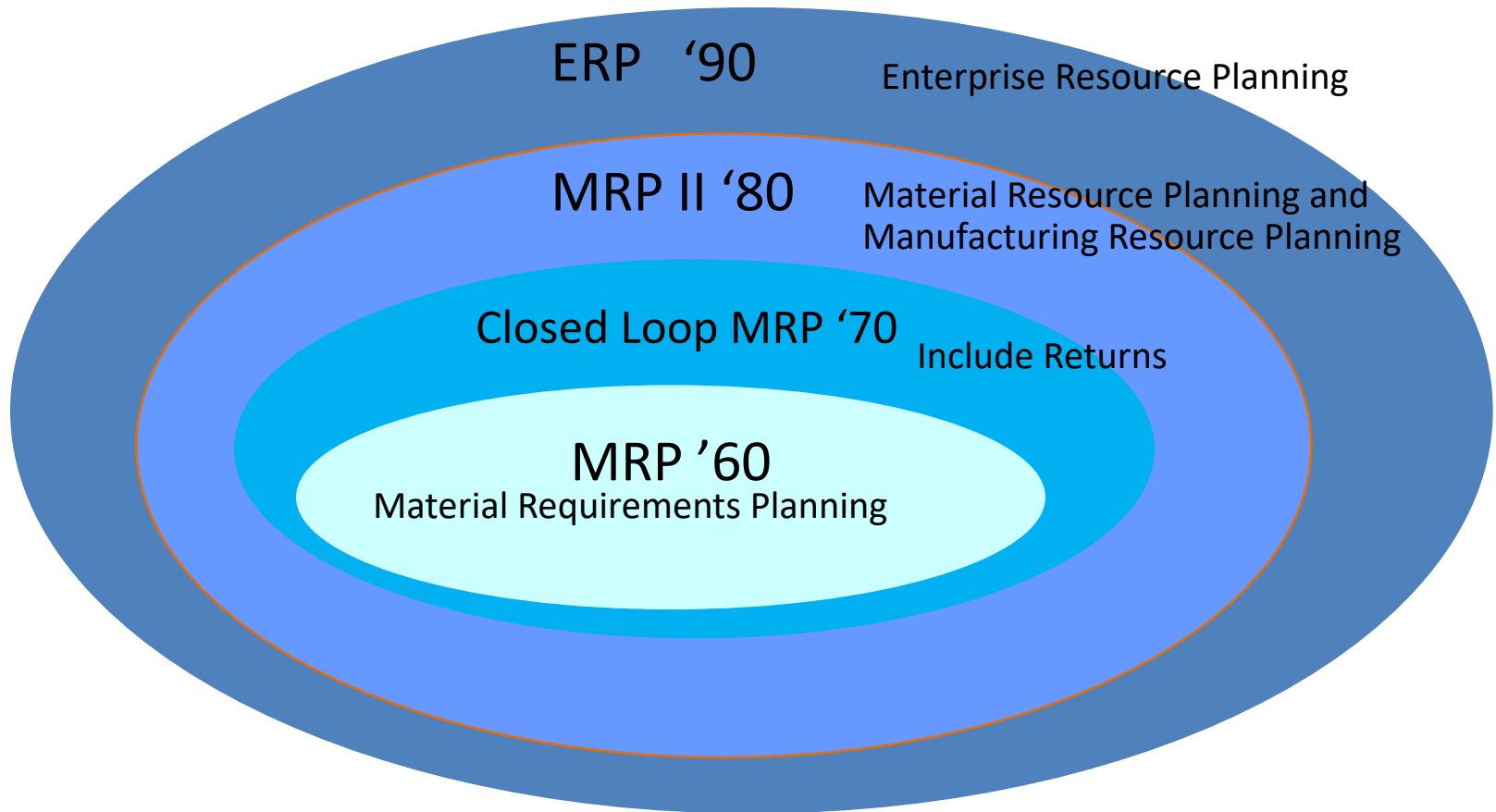
- E _____
- R _____
- P _____
- Systems

MRP -> MRP II -> ERP

- **MRP** – Material (or Manufacturing – mfg) Requirements Planning (70's)
 - Scope: typically mfg companies
 - Calculate material requirements (quantity, where, when, etc.) by translating Master Production Schedule (MPS) into component and Raw Material (RM) demands
 - 'Little MRP'
- **MRP II**
 - MRP extended to resources beyond materials (capacity, detailed schedule, labor, etc.)
 - Includes demand from customer orders and/or forecasts
 - 'Big MRP'
- **Enterprise Resource Planning (90's)**
 - Scope: Full enterprise (all companies, sites, processes, ...)



Evolution of ERP



MRP and MRP II only focus on manufacturing

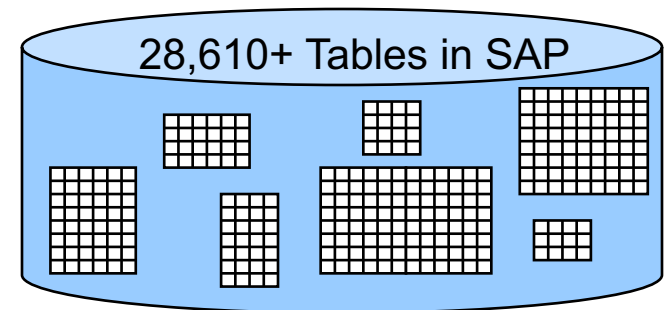
ERP Systems

- Software technology (system)
- Enables performing business processes
- Typically suite of integrated solutions (single vendor, common database, consistent look and feel ...)
- Scope beyond mfg, distribution, order - invoice to include:
 - Customer relationship mgmt (CRM)
 - Human Resources (HR)
 - Project Management (PCM)



ERP Systems

- Incredibly large, extensive software packages used to manage a firm's business processes.
- Standard software packages that must be configured to meet the needs of a company
- Database programs with the following functions:
 - Input
 - Storage/Retrieval
 - Manipulation
 - Output

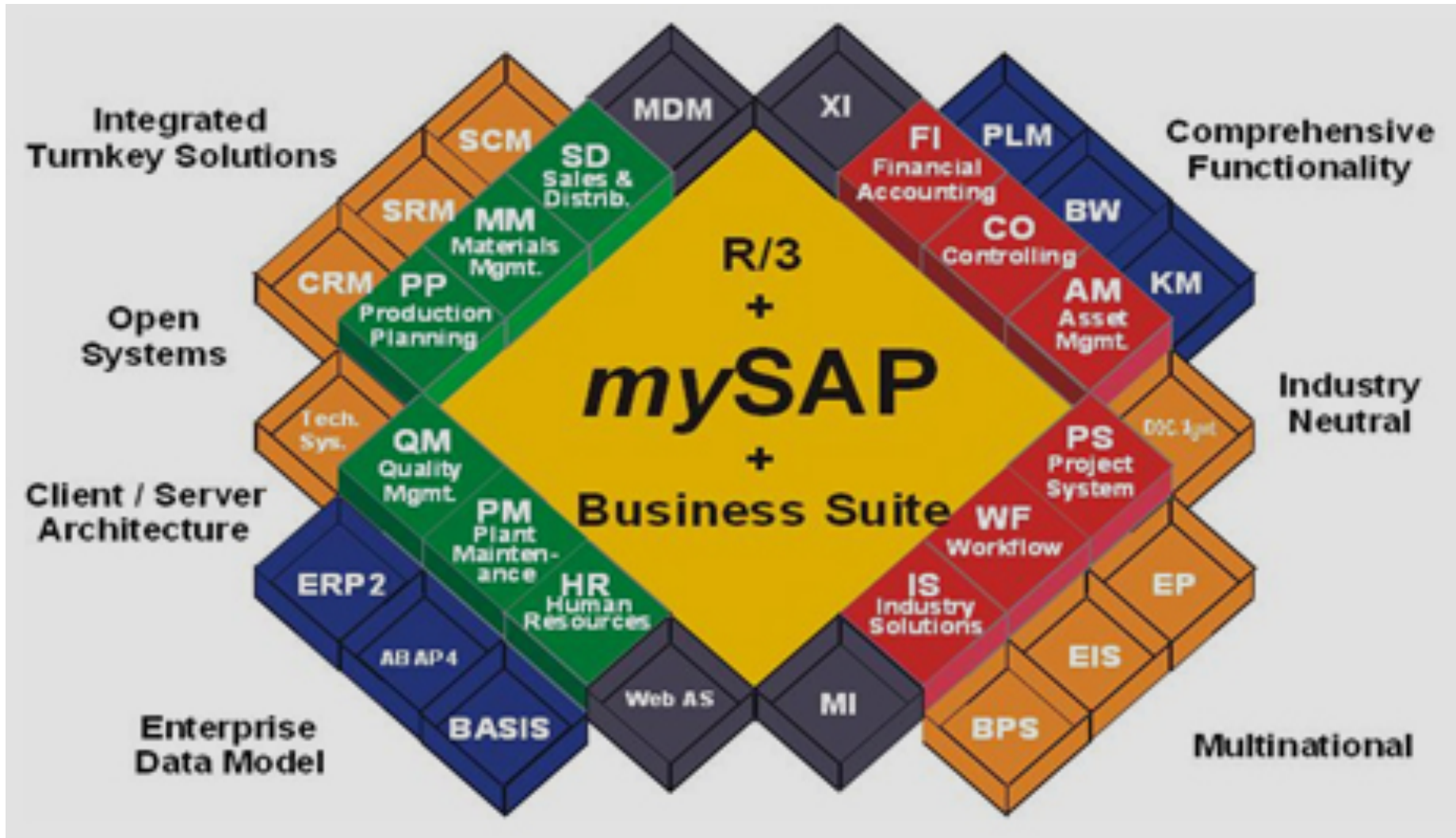


ERP System Suppliers

- SAP, the German juggernaut
 - Systeme, Anwendungen, Produkte in der Datenverarbeitung, or
 - Systems, Analysis and Products in Data Processing
- Oracle/PeopleSoft/J. D. Edwards (J.D. Orisoft)
- Microsoft Great Plains, aimed at smaller companies
 - SAP Business One is competing product
- Local Country Solutions (limited scope)
 - e.g. China

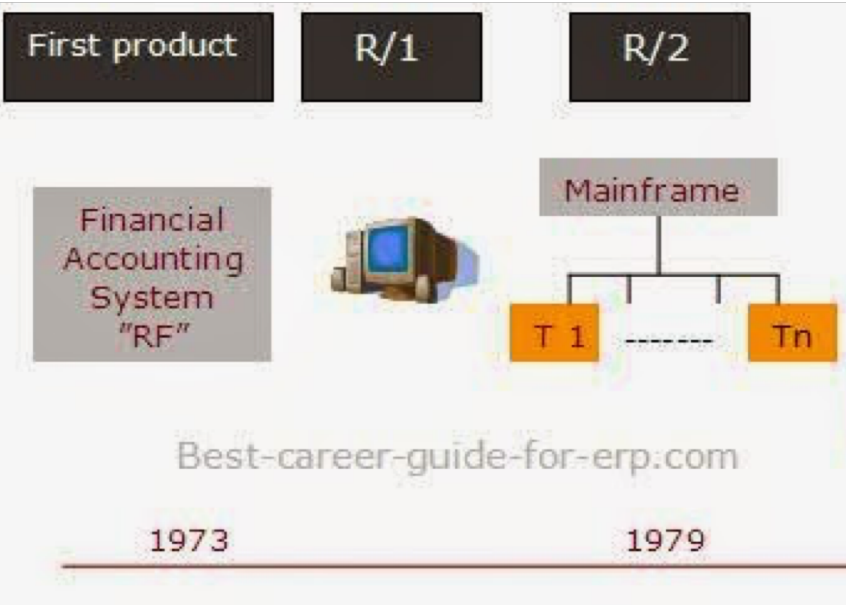


SAP ERP 6.0



SAP Technology Evolution (70's)

Mainframe Days



```
Menu RefList RefMode Utilities Help
Data Set List Utility
Option ==>
blank Display data set list
Y Display VTDC information
P Print data set list
PV Print VTDC information
More: *
Enter one or both of the parameters below:
Dataset Level . . . 02A031.rajesh34
Volume serial . . .
Data set list options
Initial View . . . 1 1. Volume
2. Space
3. Attrib
4. Total
Enter "/" to select option
/ Confirm Data Set Delete
/ Confirm Member Delete
/ Include Additional Qualifiers
/ Display Catalog Name
When the data set list is displayed, enter either:
"/" on the data set list command field for the command prompt pop-up,
an ISPF line command, the name of a TSO command, CLIST, or REXX exec, or
```

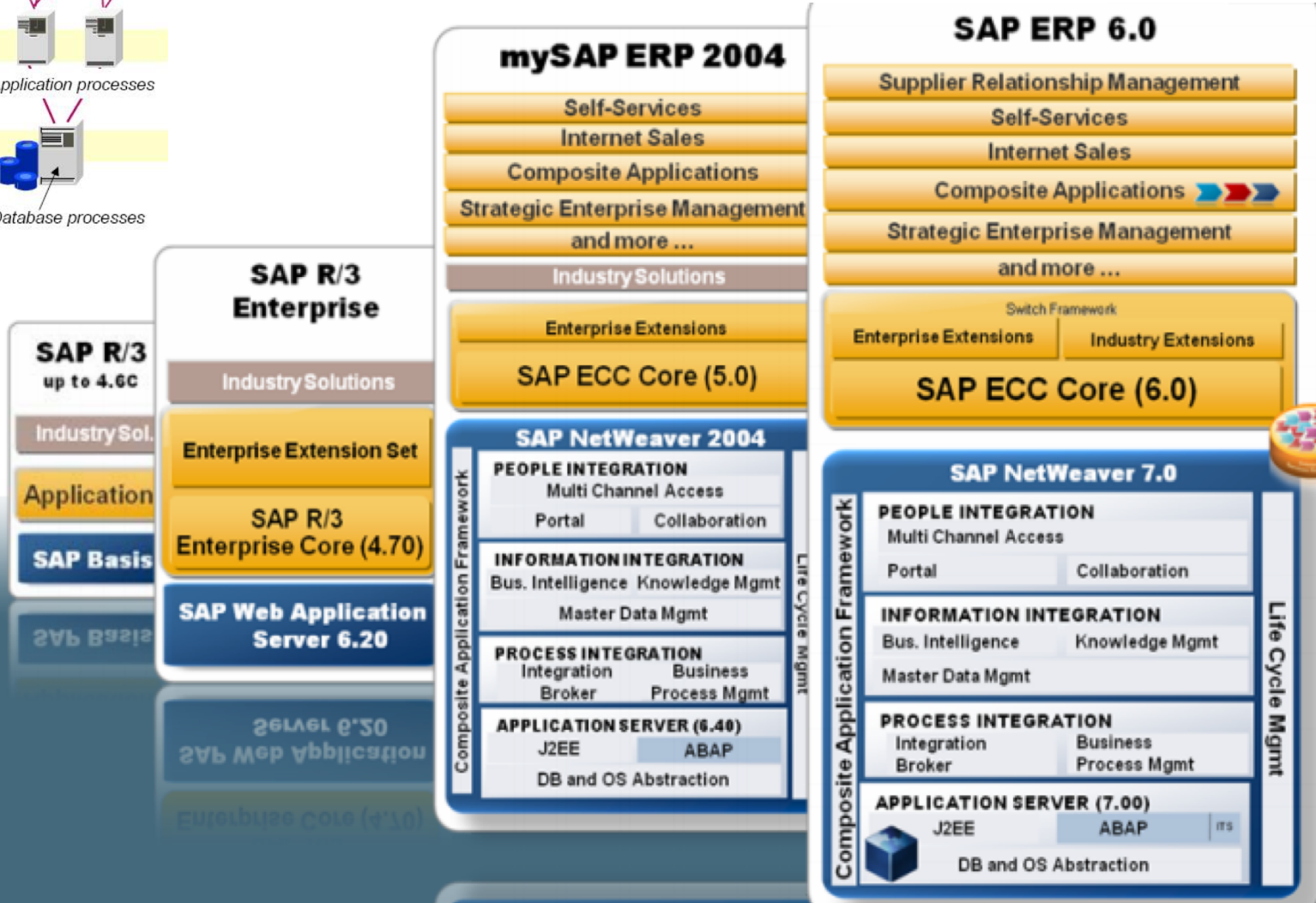
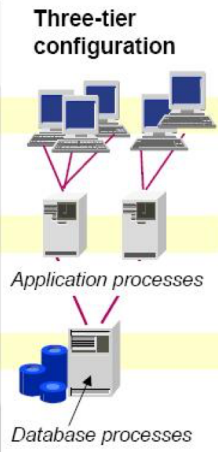


SAP Technology Evolution

90's -> Now

Application

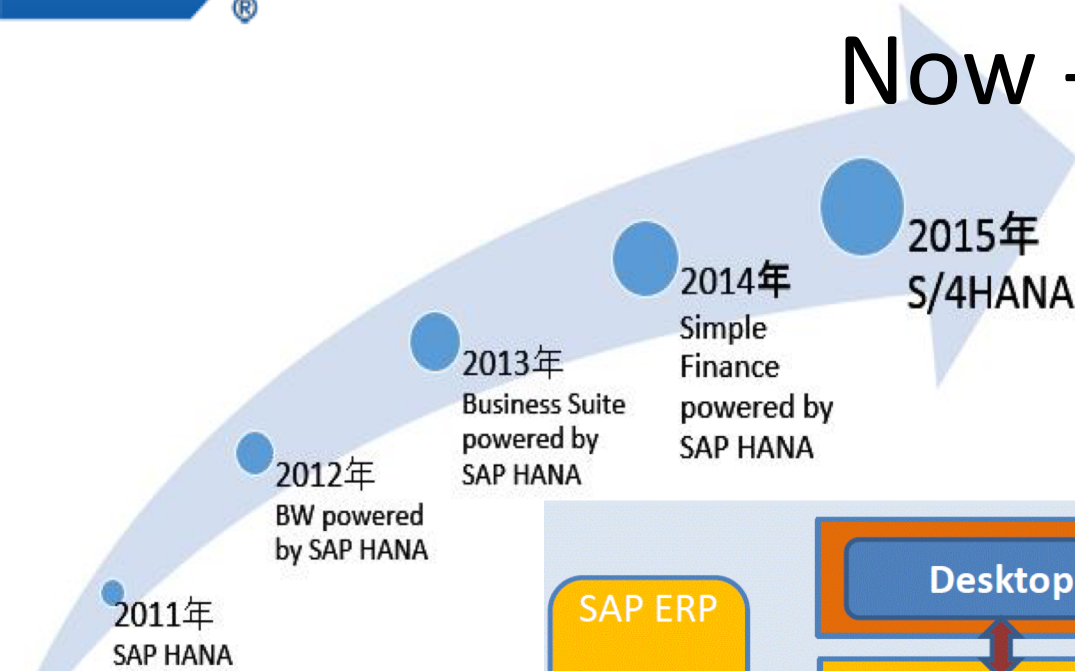
Technology



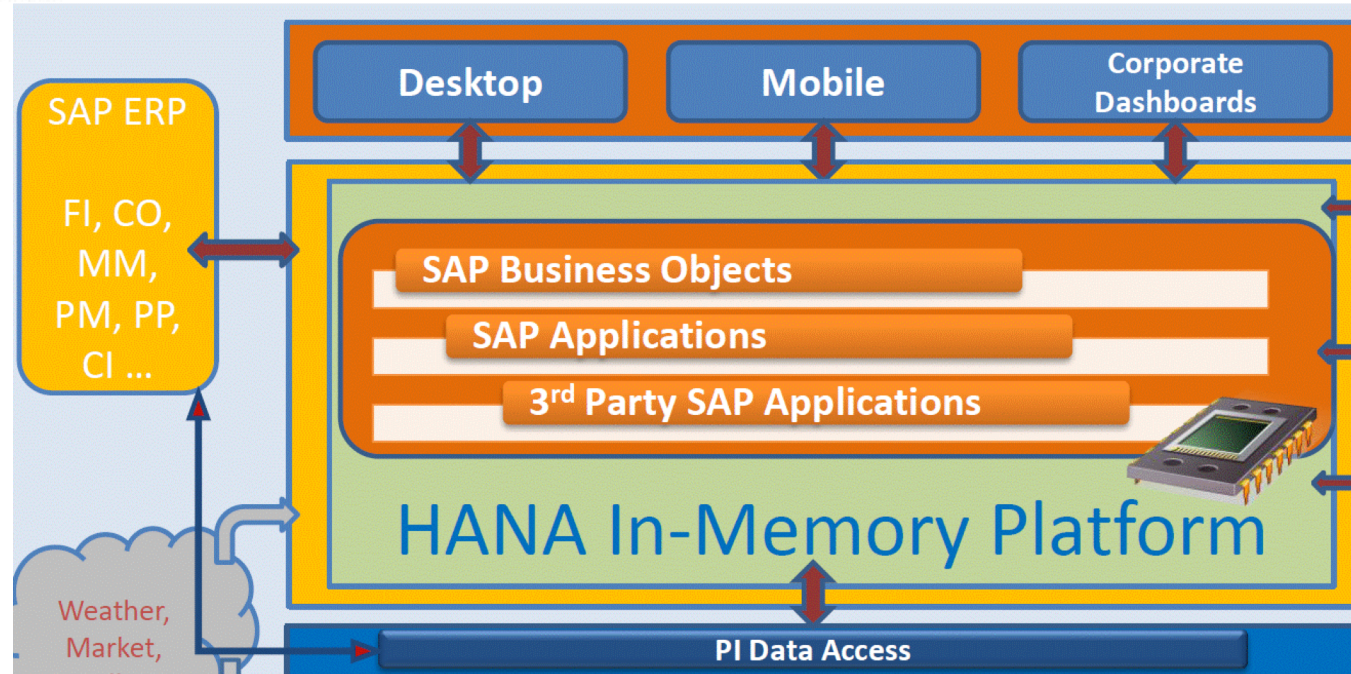


SAP Technology Evolution

Now ->



SAP HANA: in-memory, column-oriented, relational DB & related apps



SAP High-Performance **Analytic Appliance**

ERP System Implementation

- Configuration: process of making standard software fit your business
 - Achieved via setting defined parameters, config table entries
 - SAP: Over 8000 configuration decisions
 - Data structuring
 - Sales divisions, distribution channels
- Modifications: Rewriting standard system code
 - Not recommended because of compatibility problems when updated versions of the software are installed.

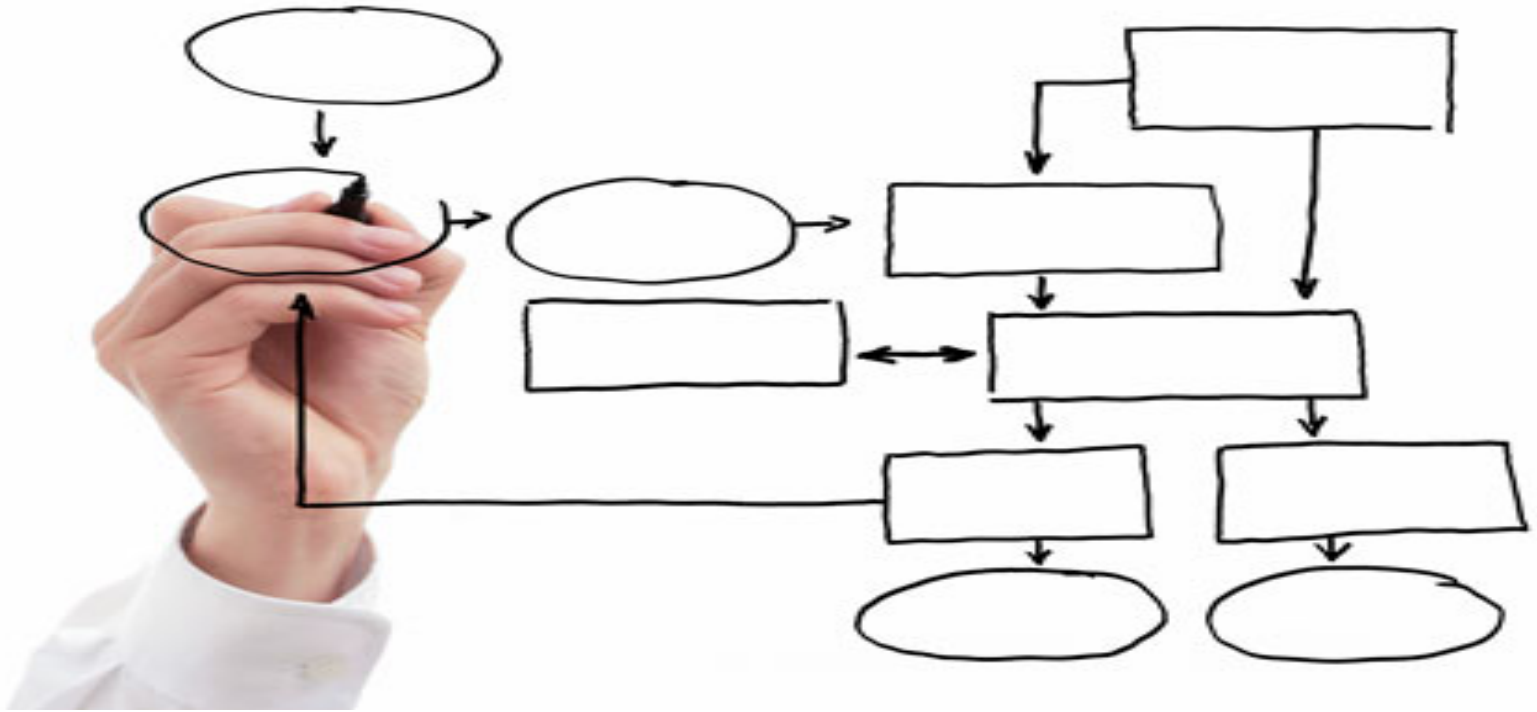


ERP System Implementation

- Customization: Writing code
 - Forms
 - Reports
 - Interfaces
 - Third-party software solutions
 - External Partners
 - Legacy Systems
 - Conversion of data
 - Enhancements to system logic - at SAP-specified user exits

ERP System Implementation

- Change Management: People side of
 - Design consistent with system / process ‘best practices’
 - Documentation
 - Training
 - Manage the organization / politics
- Huge / Risky Projects:
 - Affects the basics of how an organization operates
 - \$\$\$\$
 - Need help of experts



Business Processes, ERP Systems, & Controls

Discuss (5 minutes)

What do you know of the following ...

- Enron
- WorldCom
- Arthur Anderson

Control Failure: Enron



- Background:

- ❖ Natural Gas Trading company that grew significantly as that market was deregulated
- ❖ To further growth it diversified into other industries (electricity plants, pulp and paper, water plants)
- ❖ Gained revenue by trading contracts for these products and services (1996 – 2000)
- ❖ Fueled stock price increases and rated as an innovative large company

- Control Failures:

- ❖ Pushed envelope in using alternate (aggressive) revenue valuation techniques for contracts (Mark-to-market accounting)
- ❖ Hid capital costs and risks in off balance sheet, special purpose entities.
- ❖ Booked costs of cancelled projects as assets due to 'technicalities' (no official letter)
- ❖ External Auditors (Arthur Anderson) had conflicted incentives for local partners (were able to overrule critical reviews of decisions by AA partners)
- ❖ Audit committee didn't have technical knowledge to question accounting practices, conflicts of interest, pressure not to raise questions

Control Failure: Enron



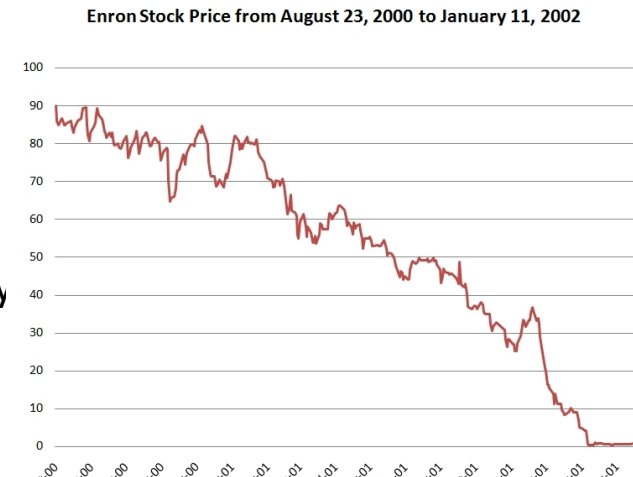
- Results / Outcomes:

- ❖ Company went bankrupt in 2001 (largest at time – eclipsed by WorldCom)
 - ❖ Estimated loss of \$62B shareholder value
 - ❖ Layoff of ~22,000 employees
 - ❖ Many folks lost \$\$B (including Enron Employees with stock in 401-K, pensions (e.g. Florida State Pension fund), etc.)
- ❖ Many executives indicted – some sentenced to prison
- ❖ Arthur Anderson was external auditor for Enron
 - ❖ Convicted of destroying documents (30,000) relevant to SEC investigation (later overturned)
 - ❖ Company lost customers, ceased operating (25,000 people lost a job)
- ❖ One Driver for regulations / legislation like Sabanes-Oxley Act (more about 'SOX' later)



- References / Links:

- ❖ http://en.wikipedia.org/wiki/Enron_scandal
- ❖ **SAP GRC for Dummies** by Vu Broady, Denice & Roland, Holly
Published by Wiley Publishing, Inc., 2008



Results of Massive Failures



FRAUD



Sarbanes – Oxley Act (US)

SEC Regulations (US)

SOX (Canada)

Combined Code on Corp Governance (UK)

Eighth EU Directive (Audit Directive)

SOX (Japan)

Stock Corporation Act (Germany & Austria)

SOX (China)

Basil II and III (EU Banking)

Various others

Business Objectives and Risk Drivers

External Financial Reporting regulations

Sarbanes – Oxley Acts

GAAP

Various Others

Other Reg's

FDA

Chemical
Control Laws

GMP

Import
Export

HIPPA

Organization's Objectives & Policies

Balanced
Scorecard

KPI's

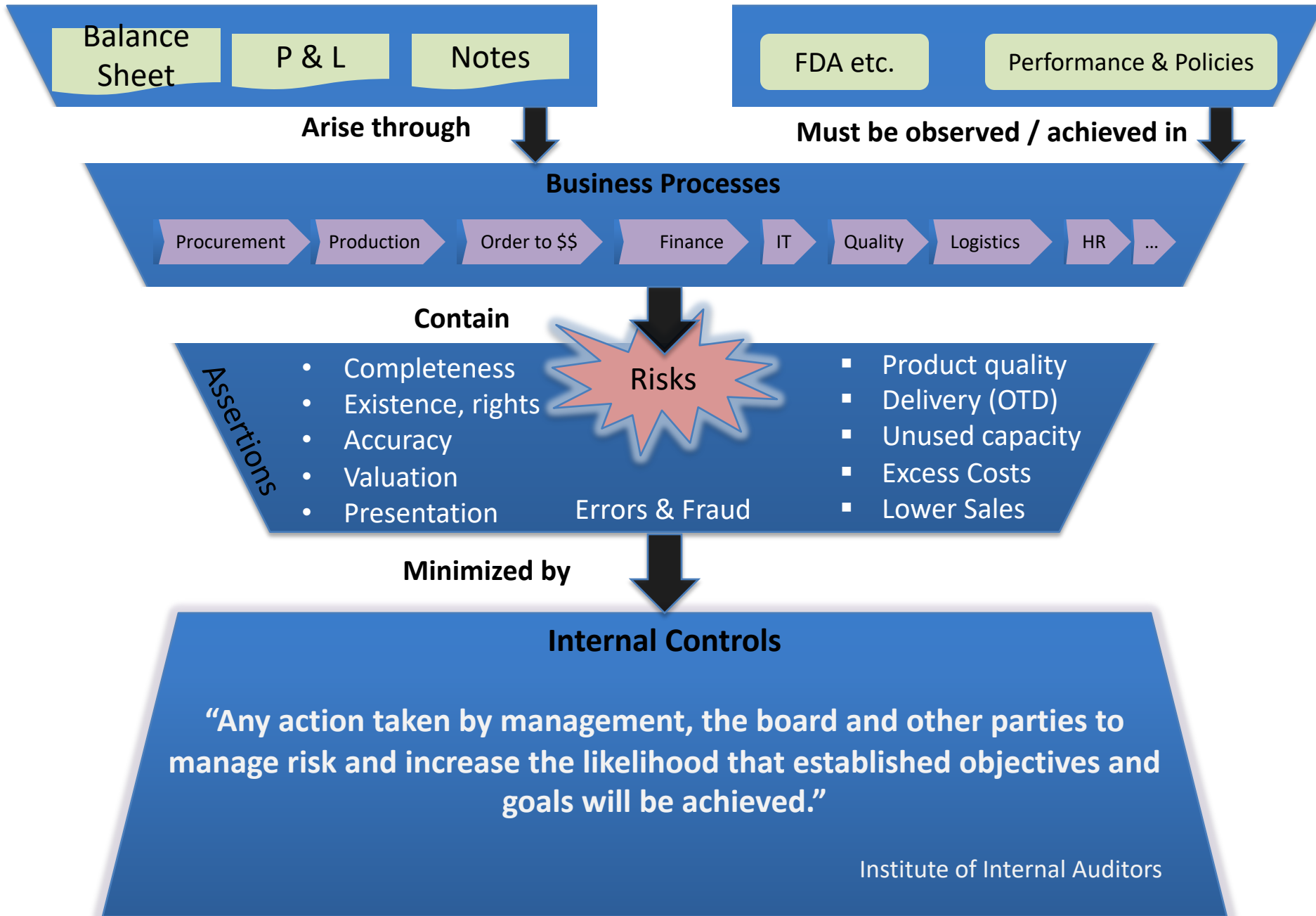
Process
Improvement

Profitability

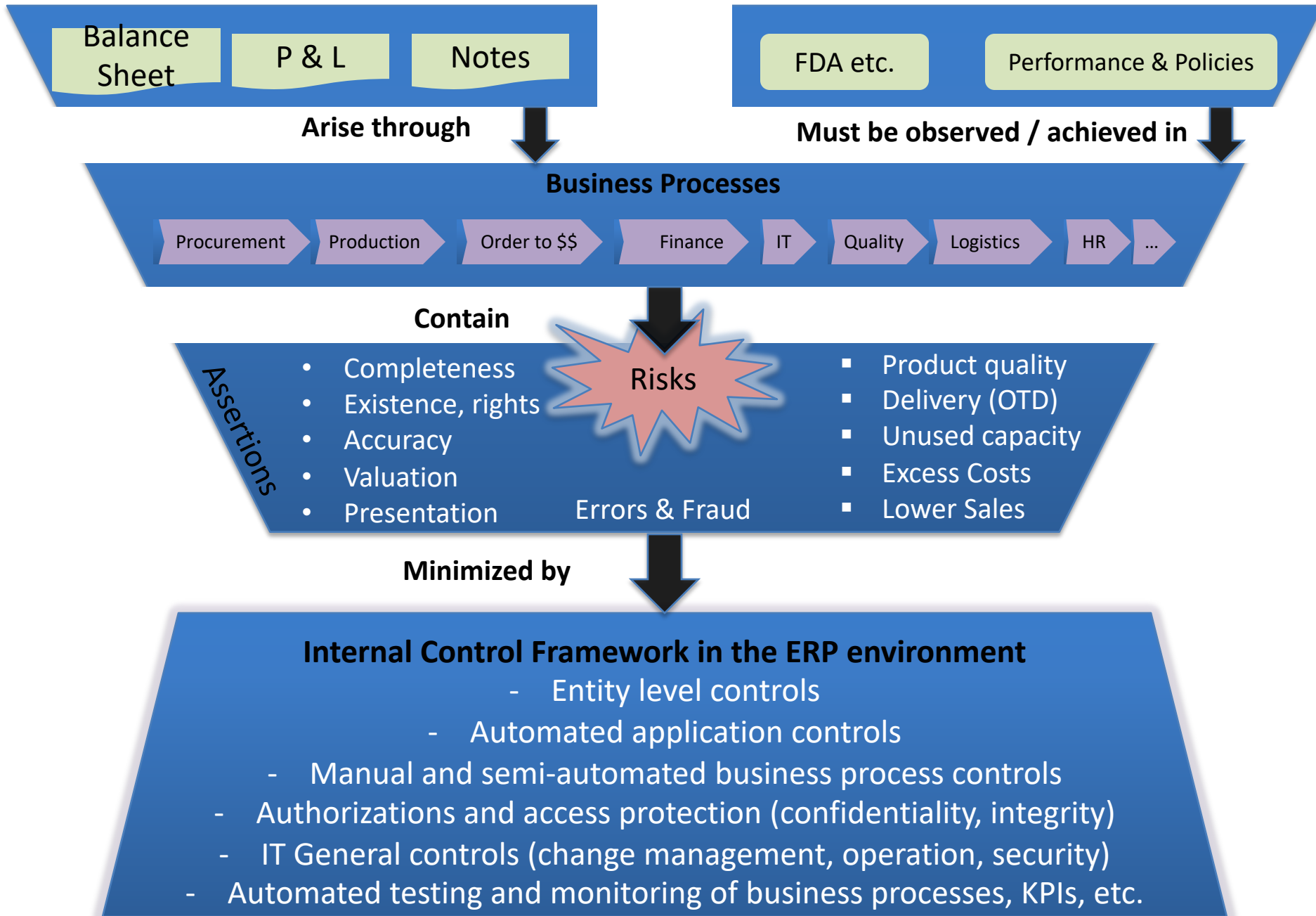


Risks

Risk Control Framework



Risk Control Framework



External Financial Reporting regulations

Other
Reg's

Organization's
Objectives & Policies

Balance
Sheet

P & L

Notes

FDA etc.

Performance & Policies

Arise through

Must be observed / achieved in

Business Processes

Procurement

Production

Order to \$\$

Finance

IT

Quality

Logistics

HR

...

Contain

Assertions

- Completeness
- Existence, rights
- Accuracy
- Valuation
- Presentation

Risks

- Product quality
- Delivery (OTD)
- Unused capacity
- Excess Costs
- Lower Sales

Errors & Fraud

Minimized by

Internal Control Framework in the ERP environment

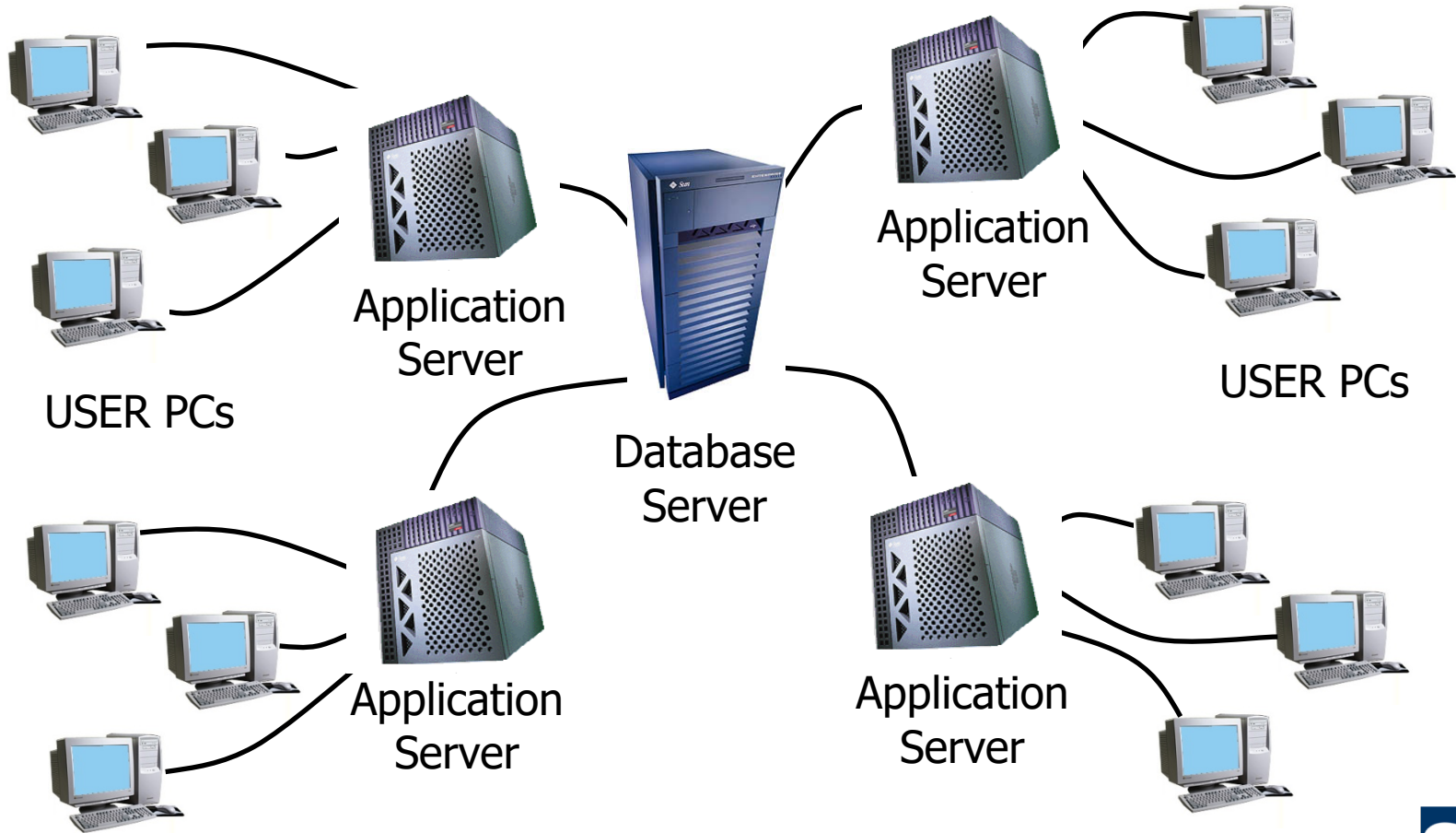
- Entity level controls
 - Automated application controls
 - Manual and semi-automated business process controls
- Authorizations and access protection (confidentiality, integrity)
- IT General controls (change management, operation, security)
- Automated testing and monitoring of business processes, KPIs, etc.

Exercise Objectives



- Understand how Connection is made to operational SAP system
- Each person logon to GBI system
 - Password reset
- Review SAP User Interface navigation and common components
- Add 'favorite' transactions and use each:
 - SE16N – Table display
 - SU01D – Display user
 - SPRO – Configuration access
- Logoff

Three-tier Client/Server Architecture

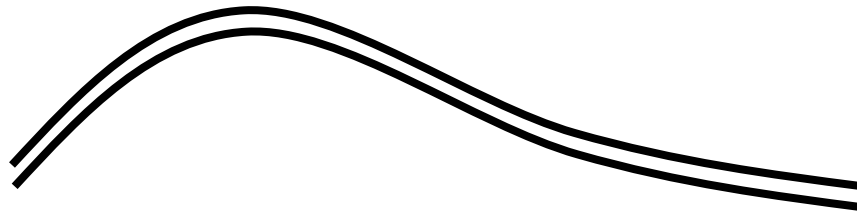


Logging On – SAP GUI

- ◆ To log on to an R/3 system with the SAP Gui, you need the proprietary SAP Gui (Graphical User Interface) software loaded on your system and an internet connection



Account on
SAP R/3 System
at hosting site

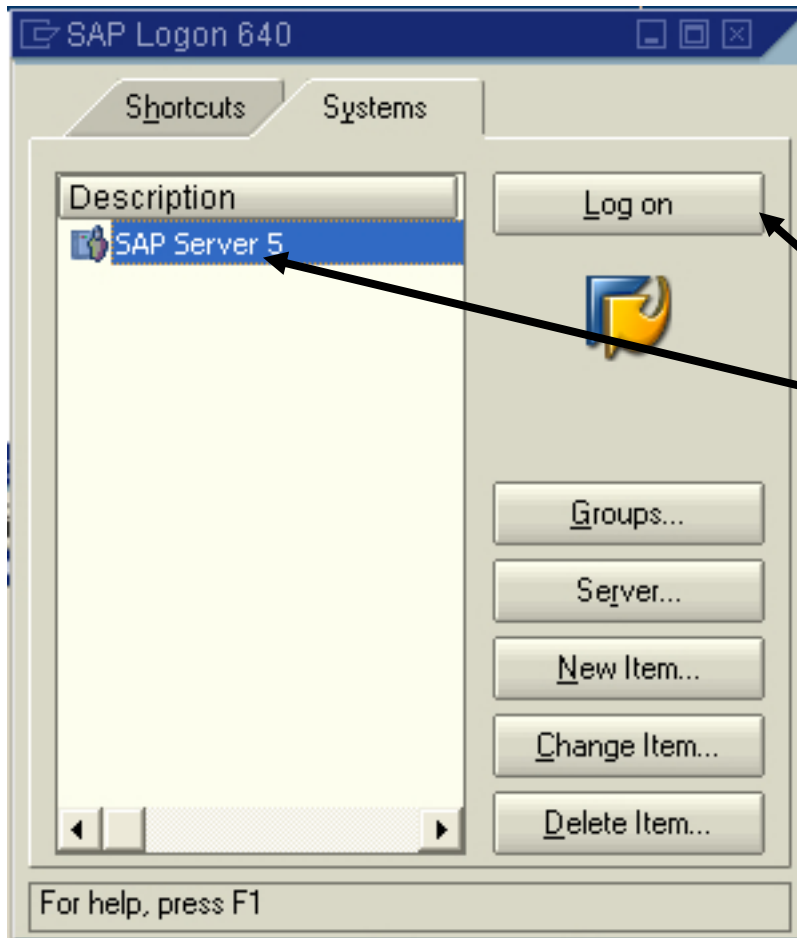


Internet Connection



PC with SAP Gui

Configured SAP Gui



Select System:
double-click or
Logon button

Logging On

The screenshot shows the SAP R/3 login interface. At the top, there is a menu bar with 'User', 'System', and 'Help'. Below the menu bar is a toolbar with various icons. The main area is titled 'SAP R/3' and contains a 'New password' button. The login fields are: 'Client' with the value '000', 'User' with a yellow highlight, 'Password' with asterisks, and 'Language' with a yellow highlight. Three black arrows point from text labels on the right to the Client, User, and Password fields.

Enter Client

Enter User (R/3 Account)

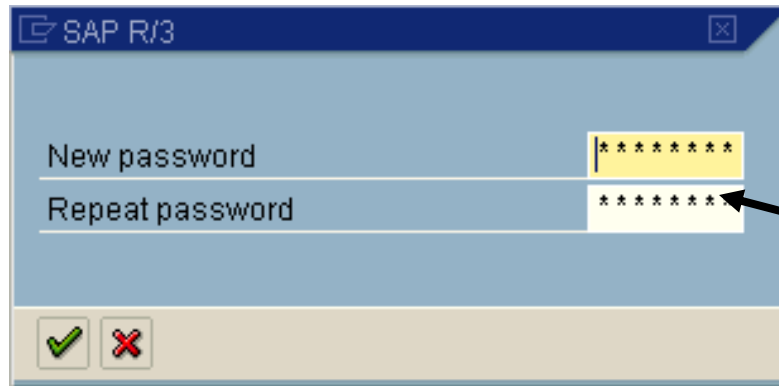
Enter Password (R/3 Account)

Don't worry about language—
English will default in

SAP Access Details

SAPGUI - System ID	GB5
Host Name	GB5.UCC.UWM.EDU
Client Name	SAP ERP GBI AIS 2.21 (MCC)
Client Number	639
SAPGUI - System #	00
Student Userids	AIS-002 to AIS-040 (See assignments in Roster)
Student Passwords	TOwlsPAS (Note: case sensitive)
WebGUI (not Safari)	http://gb5.ucc.uwm.edu:8000/sap/bc/gui/sap/its/webgui/!

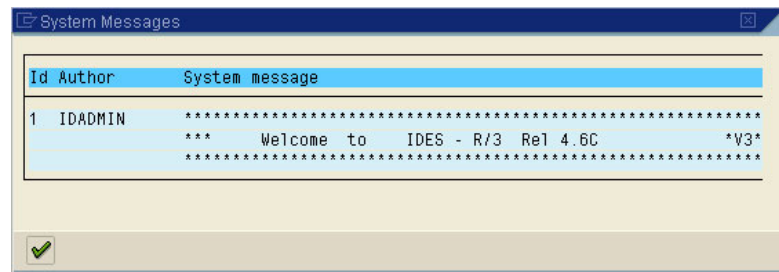
Logging On ...2



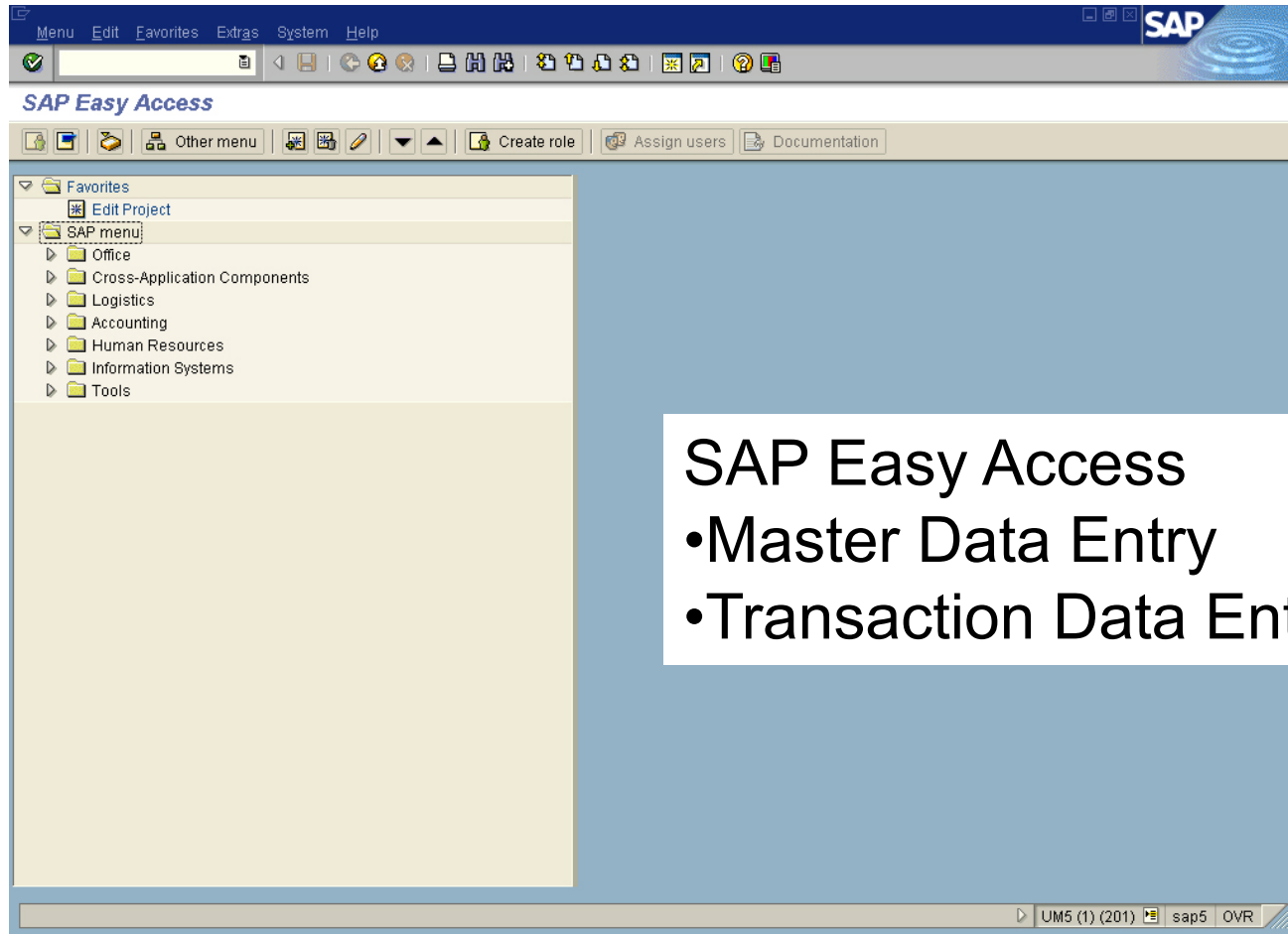
On the first time logging in to a new account, you will have to change the password—try To remember your new Password WITHOUT WRITING IT DOWN!

Then a message or two

Then



Success !!



SAP Easy Access

- Master Data Entry
- Transaction Data Entry

Exercise Objectives



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SPRO: Implementation Guide (IMG)

