RATIONALE, HISTORY, AND NECESSITY OF ENTERPRISE SYSTEM INTEGRATION

In the beginning...

Technology came to business tied to functional areas. splitting business activities into groups of related tasks, allowing workers to focus on limited set of tasks and develop expertise.

traditional groupings of personnel and resources based on business activities.

Accounting, Human Resources, Finance, Production, Information Technology, Payroll, Sales, Marketing, etc.
...there were silos and isolation

Applications focused on data processing within a functional area. Applications were independent and tightly coupled to a given functional area.

![Diagram of silos]

Structure not reflective of business needs

activities by an organization to achieve corporate goals that cut across functional areas.

- Information passing between functional areas
- Functional or temporal dependencies
- Need for coordination
- Need for unified data and understanding

Enterprise Information Systems needed to support this environment of collaboration.
Supporting Business Processes

**Enterprise Resource Planning (ERP)** programs: Core software used by companies to coordinate information throughout business processes.

To (successfully) employ ERP, businesses processes must be **defined** and **standardized**.

ERP is as much a "way of doing business" as it is a technology. ERP systems support a company's application of an ERP strategy.

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What is Enterprise Resource Planning (ERP)?

**Enterprise-wide set** of management **tools** providing ability to link **suppliers** and **customers** into a complete **chain**, employing **proven business processes**, **supporting effective decision making**, and providing **high cross-functional integration** among sales, marketing, manufacturing, operations, logistics, purchasing, finance, and human resources, enabling **people** to run their businesses with high levels of **customer service** and **productivity**, while simultaneously lowering **costs** and inventories.

Based on ERP: Making It Happen by Wallace and Kremzar
Potential Value of ERP

Promotes organizational discipline—defined methods of workflow, establishment of business rules.  
Better coordination of activities—explicit roles and responsibilities. 
Unified information handling—effective master data sharing, data integrity throughout processes.  
Faster transaction processing.  
Improved operational efficiency. (Eliminating redundant effort and duplicated data.)  
Improved financial management and customer service.  
Improved information flow with suppliers and customers.  
Improved decision making due to information availability and accuracy. 
Better support for global operations.

Challenges of Implementing ERP
### Other types of Enterprise Applications

**BI**---
Business data and analysis software to improve decision making.

**CRM**---
Facilitates customer interaction (customer sales and service)

**SCA**---
BI applied to resource acquisition and distribution.

**SCE**---
Automating execution of manufacturing process.

**SCM**---
Integration of entire manufacturing process from resource acquisition to final distribution.

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### Other types of Enterprise Applications

**SCP**---

**APS**---
BI focused on strategic forecasting of demand for goods and effective inventory management.

**SEM**---
BI focused on strategic execution, i.e. translating company goals into operational decisions.

**TMS**---
Shipping and routing of outbound goods.

**WMS**---
Raw and finished goods storage management.
ERP History and Development

SAP pioneered the ERP software market.
Five former IBM employees in Manhheim, Germany founded SAP in 1972.

- Systemanalyse und Programmentwicklung
- Systems Applications and Products (now), System Analysis Program Development (then)

Goals:

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SAP Software Timeline

1973 "System R" (real-time data processing) released to market. (Later came to be called "R/1")
1978 "R/2"

http://www.sapdesignguild.org/resources/r3_history.asp
SAP Software Timeline

1992/93 SAP R/3--3 tiered architecture
- Database, application, user interface (client)
- Open architecture
- Improved user interface

Client-server system

Within SAP GUI nothing important is saved on your PC. Only things saved on the server are saved, and they are saved for good.
SAP Software Timeline

1998 SAP R/3 4.0 (minor increments in number for next 5 years)
2003 SAP R/3 Enterprise 4.7
   In early 2000s mySAP, mySAP ERP, and mySAP.com names begin to appear as marketing names.
2004 SAP ERP ECC 5.0 (Enterprise Core/Central Component)
2005 SAP ERP ECC 6.0
2009 SAP Business Suite 7

SAP ERP Modules

[Diagram of SAP ERP modules with various components like FI, CO, AM, PS, WF, IS, HR, PM, QM, MM, PP, SD]
SAP NetWeaver

SAP NetWeaver 7.0 / SAP NetWeaver 2004s (2005)
SAP NetWeaver 7.2 (due by EOY 2009)

Set of cooperative technologies that underpin SAP ERP and related technology, and provide internal connectivity between SAP modules and external connectivity with other systems.

- NetWeaver Web Application Server
- NetWeaver Exchange Infrastructure (NetWeaver XI) (in 7.2 release renamed PI—Process Integration)
- NetWeaver Enterprise Portal
- NetWeaver Business Intelligence (NetWeaver BI)

*Composite Application Framework (CAF)* allows services to be abstracted and joined together into a customized process.
Other SAP ERP Applications

Small & Medium Size Solutions:

**Business One**
- 1-50 employees. SE (Small Enterprise) focus.
- Bought (not made) by SAP. Not sold by SAP directly.

**Business by Design**
- 50-100/500 employees. SME (Small, Medium Enterprise) focus.
- Based on Service Oriented Architecture (SOA).

**SAP All-in-One**
- 100/500-1000 employees. ME (Medium Enterprise) focus.

Who is SAP today?

**SAP AG**
- World’s Largest Business Software Company
- World’s Third-largest Independent Software Provider
- Annual revenues exceeding $10 billion.

**Company Statistics**
- 51,400 employees in more than 50 countries
- 1,500 Business Partners
- 75,000 customers in more than 120 countries
- 12 million users
- 100,600 installations

Source: SAP AG website
### SAP Industry Solutions—Best Practices

- Aerospace & Defense
- Automotive
- Banking
- Chemicals
- Consumer Products
- Defense & Security
- Engineering, Construction
- Healthcare
- High Tech
- Higher Education
- Industrial Machinery
- Insurance
- Life Sciences
- Logistics Service
- Media
- Mill Products
- Mining
- Oil & Gas
- Pharmaceuticals
- Postal Services
- Professional Services
- Public Sector
- Railways
- Retail
- Telecommunications
- Utilities
- Wholesale Distribution

### Other ERP software vendors

**Oracle Applications**
- Oracle, JD Edwards, PeopleSoft, Siebel, Retek

**Microsoft Business Solutions**
- Dynamics (Great Plains), Navision, Axapta, Solomon

**The Sage Group**
- Sage Software – Accpac ERP, PeachTree

**SSA Global Technologies**
- BAAN
Return to Premise

Rationale
History
Necessity

References and Links

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