

# ERP Course: Planning, Design, and Implementation of ERP Readings: Chapter 3 Mary Sumner

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## **ERP Implementation**

Phases stay:

- Planning
- Requirements analysis
- Design
- Detailed design
- Implementation
- Maintanance

Focus changes

• To fit the existing software (ERP) package to an organization



## **Planning (Business justification)**

Inventory cost reductions

• Ability to use timely operational data

IT cost reductions

• Ability to integrate systems instead of maintaining many separate Personnel cost reductions

• Ability to enhance systems without incurring the time and cost of custom development and modifications

Increased profitability

• Ability to introduce new features

Productivity improvement

• Access online to real time data

Better cash management

Reduction in cost and time of systems development and maintanace



## **Requirements Analysis**

Analyzing business process (how company works)
Analyzing how those process are already supported
Specifying the processes to be supported in addition or change of the current support
Should fit with organization's goals and competitive strategy
Analysis of technical infrastructure
Specification of technical infrastructure which should enable the change



## Selecting an ERP System

- Create a vision
- Create a feature list
- Create a software candidate list
- Narrow the field to 4 6 candidates
- Create RFP
- Select 2 3 finalists
- Select a winner
- Justify the investment
- Negotiate the contract
- Run a pre-implementation pilot
- Validate justification



## **Technology Factors**

Cost of technology (start-up and recurring) Installation (support, time, and cost) User interfaces Upgradability Computing environment Personnel requirements (to use and to design)



## Design

Re-engineering vs. Customization Re-engineering

- Analyse possibilities to change processes and organizational structures
- Design changes to fit ERP best practices

Customization

- Analyse current processes
- Suggest an ERP system change to fit it to existing processes



## **Re-Engineering vs. Customizing**

### Customizing

- + Supports unique bussiness processes
- + Strategic processes are maintained
- Difficulty to introduce some changes
- Difficulty with upgrades

**Re-Engineering** 

- + Features and processes supported by ERP
- + Based on best practices
- Does not support strategic or unique business processes
- Resistance to organizational change



## **Re-engineering and customization factors**

	Re-engineering	Customizing
Re-engineering business processes	Software system best practices	Independent of tools being implemented
Organizational fit	works well with minimal changes but can disturb the organization if extensive changes are required	may disrupt organization less because the software is designed to the processes
Evolution	depends on vendor	evolution can support unique requirement but create difficulties when a vendor ugrades features you have changed



	Re-engineering	Customizing
Cost	Implementation is cost effective	may involve extensive costs of custom implementation
Requirements	boundaries set by business process models and best practices	more flexibility for custom requirements
Competitivness	other firms have the same settings	do not have to use the software which other companies in industry adopted
Fit	Need to fit to requirements drawn by the ERP	Unique requirements has to be supported by a customization
External consulting	Needed to cunsult business process change	Needed to consult system implementation change



## **ERP Implementation Alternatives**

Vanilla implementation Single vendor with customization In-house with supplementary ERP modules ASP



## **Detailed Design**

Select applicable business processes Discard inaplicable business processes Reorganize and document new processes Identify areas not covered by the best practices which require customization and development



## **Models Used**

Component model – show major functions Organization model – breakdown of oranization structure Data model – information needed by a company Interaction model – information flow between organizational units



## Implementation

Dialog customization Dialog connection customization Processing functions customization Data model customization Reports customization Integration with the office systems



### **Protocols/Activities**





### **Collabotation/Interaction Diagrams**





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## **Dialog Sequencing – clasify product**





## **Dialog Sequencing – user interaction**









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## **Client Customization**

4G languages – forms

- Adding, modifying attributes, control boxes, ...
- Adding/modifying client function
- Adding/modifying connection to database
- Adding/modifying menus, control flows, ...

**Client APIs** 

- Externilize dialogs to functions
- Allow to instantiate and embed client dialogs and functions in external programs



### **Forms Development**





### **Visual Basic for Applications**

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## Message Queues (e.g. Navision)

public FormI() { //
// Required for Windows Form Designer support //

```
InitializeComponent();
```

// // TODO: Add any constructor code after InitializeComponent call // mqFromNavision.Formatter = new System.Messaging.XmlMessageFormatter(new Type[] {typeof(String)}); }

```
private void mqFromNavision_ReceiveCompleted(object sender,
    System.Messaging.ReceiveCompletedEventArgs e) {
    System.Messaging.Message m =
    mqFromNavision.EndReceive(e.AsyncResult);
    txtReceive.Text = (string)m.Body; }
```

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Segments Sales Quotes

Customer/Vendor/Bank Acc.

#### Customer calling Call center software identifies the number The procedure at the call center site associated with sales telephones runs a procedure where a navision objects are embeded

A function for openning and looking up particular contact is implemented

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## **Business And Database Tier Customizations**

Set of business functions and rules Language to create them, e.g. Enterprise Java Beans, Oracle Application Server procedures, Oracle stored procedures APIs/SDKs to access database and business functions on the server

Automation technology to embed and use it in external programming environments and applications Adding attributes/tables/triggers