The ERP life Cycle

Air Force Mentor-Protégé Program

ERP Lifecycle Concepts

Ronald E. Giachetti, Ph.D.
Associate Professor
Industrial and Systems Engineering
Florida International University

Duane P. Truex, Ph.D.
Associate Professor
Department of Computer Information Systems
Georgia State University

ERP Methodology & Project Management
"All you need is ignorance and confidence and the success is sure."

(Mark Twain)

Air Force Mentor-Protégé Program

Agenda

- Review ERP implementation project cycle including
  - Initiation
  - Project planning
  - Process analysis and design
  - Realization
  - Transition approaches
  - Operations from “go live” to support
- Discuss ASAP as an example ERP method
Generic view of an ERP implementation

- Essentially two major components: development and deployment
- “Development”
  - Process selection/modeling
  - Coding/configuring
  - Data migration
  - Infrastructure
- Deployment
  - Organizational change
  - Education
  - Go Live

ERP Implementation Phases

1. Initiation
2. Planning
3. Analysis & Process design
4. Realization
5. Transition
6. Operations
**Phase 1: Initiation**

- The beginning of the project
- A project will begin when the project sponsor has obtained the funding
  - Implies that top management of the firm feels that it is important enough to invest big money
- Pull in key project resources, i.e., the project manager

**Phase 2: Project planning details**

- Set up project administration
- Staff project
- Set goals and objectives
- Acquire project resources
- Define metrics
- Documentation standards
### Phase 3: Process design

- Elucidate very detailed information on relevant processes
  - Determine specific process details
  - Redefine/clarify project scope
- Learn what the technology (ERP Modules) offers as a solution
- Choose whether to redesign processes or customize technology
- At the same time, ready the technology infrastructure to support the system

### Installation steps

- Size the system
- Decide on installation type
- Check on installation requirements
- Install and configure hardware, network and base software
- Design file layout
- Install central instance
- Define database
- Build and load database
Air Force Mentor-Protégé Program

**Phase 4: Realization**

- Modifying “plain vanilla” enterprise system to support organization
- Industry specific settings
  - Unique characteristics of particular industry or market segment
- Company specific settings
  - Unique characteristics of company
- Some geography specific settings are usually allowed

Air Force Mentor-Protégé Program

**Building interfaces to legacy**

- Programs that allow enterprise system to exchange data with legacy systems
- Inbound and outbound
- Almost always custom-built
  - this is where the developers would step in; e.g., in SAP R/3 they would do this in ABAP
Air Force Mentor-Protégé Program

Creation of authorizations

Roles

- Executive Board
  - Executive Officer
  - Strategic Planner

- Managerial Accounting
  - Managerial Accounting Manager
  - Managerial Accountant
  - Project Accountant

- Financial Accounting
  - Financial Accounting Manager
  - Financial Accountant
  - Tax Accountant
  - Joint Venture Accountant

- Marketing
  - Marketing Executive
  - Product/Brand Manager
  - Marketing Research & Analysis Manager

- Procurement
  - Sales Executive
  - (Key) Account Manager
  - Sales Representative
  - Sales Administrator

- Service
  - Service Executive
  - Field Service Representative
  - Service Center Technician

- Resource Management
  - Resource Manager
  - Procurement Executive
  - Strategic Buyer
  - Purchasing Agent

- Maintenance & Facilities Management
  - Maintenance & Facilities Executive
  - Maintenance Manager
  - Maintenance Clerk
  - Maintenance Engineer
  - Real Estate Administrator

Data migration/conversion

- Need to transfer historical or legacy data to new system
- Requires custom programs
  - Significant cost and time could go into cleaning the data
- Similar to interfaces development work
- Usually one-time uploads
Phase 5: Transition approaches

- **Direct Cutover**
  - Old
  - New

- **Parallel Transition**
  - Old
  - New

- **Phased Transition**
  - Old
  - New

- **Pilot Transition**
  - New
  - Old

Air Force Mentor-Protégé Program

System testing

- Occurs throughout phases 3, 4 and 5
  - Process personnel responsible for testing
- Unit or function testing
  - Testing individual and composite processes
  - Includes data conversion programs, interfaces, and authorizations
  - Occurs throughout realization phase
- Integration testing, does it all work
  - Final step before “go live”
- Stress testing
- User acceptance testing
## Training

- Occurs throughout the project
- Phase 1 and 2: project team education on the use and implementation of the chosen solution
- Phase 3-6: end user education on how to use the system

## Organizational change

- Change Management is the “Buzz” word for how to help the organization to accept the new system
- Intangible and fuzzy, yet highly important in order to smooth the transition to the new system
  - Often overlooked or the first place to cut budget
  - More psychological than technical in nature
Air Force Mentor-Protégé Program

**Phase 6: Operations**

- Quality assurance checks and evaluations
- Optimization and refinement of the production environment
- Follow-up training and assessment of end-user needs
- Refinement of systems administration procedures
- Project review
  - What are the lessons learned?

---

Air Force Mentor-Protégé Program

**ERP System Builds**

- Usually several builds maintained
  - **Development System:** all new functionality is developed and tested here. Used by customization experts.
  - **Test System:** to test modules in isolation.
  - **Integration System:** also called test system or simulation system, but test in the integrated environment. Actual business data to test functionality under realistic conditions. Business experts involved in test and analysis.
  - **Production System:** the ERP system that is in actual use. All functionality should have undergone intensive testing.
  - **Reporting System:** a copy of the production ERP delayed by a day to enhance performance by doing reports.
  - **Training System:** a copy with realistic data for training. Data is not deleted for continuity of training.
Air Force Mentor-Protégé Program

ASAP Implementation Methodology

EXAMPLE of a company specific method

SAP Proprietary Methodology

Air Force Mentor-Protégé Program

Accelerated SAP (ASAP)

- An approach resulting in a quick, cost effective implementation of R/3
  - Minimizes the length of time between installation and production start up
  - Maximizes the utilization of SAP and customer resources
  - Incorporates a process oriented approach to training
  - Involves the user community
  - Results in a repeatable "model" that can be used with other implementations of R/3
- ASAP accelerators (tools)
  - R/3 Business Engineer (implementation tool)
  - Templates, examples, and checklists
  - Project Plan in MS Project
  - Templates for steering committee, etc.
### Project Preparation

#### Purpose
- Provide detailed planning for the project
- Identify high-level scope
- Define high-level strategies
- Define overall project schedule & implementation sequence
- Mobilize project team

#### Key Activities
- Finalize team structure
- Establish Project Plan
- Engage business leaders & client stakeholders
- Establish project mgmt procedures & standards
- Plan technical requirements
- Hold project team training

#### Timescale

<table>
<thead>
<tr>
<th>Wave</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Financial Management (R/3 Enterprise)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Blueprint</td>
<td>Final Plan</td>
<td>Final Plan</td>
<td>Go Live</td>
</tr>
<tr>
<td>Realization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Reporting (BW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Go Live &amp; Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Preparation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Preparation</td>
<td>Evaluation</td>
<td>Blueprint</td>
<td>Business Blueprint</td>
</tr>
</tbody>
</table>
Air Force Mentor-Protégé Program

Business Blueprint

Purpose
- Create the Business Blueprint document which serves as the design specification for the new system

Key Activities
- Identify process & functional gaps via Business Blueprint Workshops
- Define & document client process changes
- Identify org. impacts
- Develop system environment
- Hold project team training

Project Preparation

Business Blueprint

Realization 6 months

Final Preparation

Go Live & Support

Sustain

Evaluation

Realization

Go Live & Support

Sustain

6 months

Realization

Air Force Mentor-Protégé Program

Purpose
- Implement business & process requirements based on Business Blueprint design

Key Activities
- Configure the ERP system
- Develop reports, interfaces, conversions & enhancements
- Develop training materials and end user documentation
- Conduct unit, integration & user acceptance testing
- Establish authorization concepts

Evaluation

Project Preparation

Business Blueprint

Realization 6 months

Final Preparation

Sustain

Evaluation

Project Preparation

Business Blueprint

Realization 6 months

Final Preparation

Sustain
Final Preparation

**Purpose**
- Complete preparations for go live of the new SAP system

**Key Activities**
- Complete system testing
- Hold end user training
- Complete system mgmt & cut over planning
- Complete data conversion
- Establish system support infrastructure
- Develop Help Desk

Go Live & Support

**Purpose**
- Move from pre-production environment to live, stable production operation

**Key Activities**
- Implement help desk & support infrastructure for end users
Air Force Mentor-Protégé Program

Implementation Deliverables

1. Project Plan
2. Scope
3. Business Process Master List
4. Business Blueprint
5. System Performance

Business Process
Master List

Business Blueprint

Air Force Mentor-Protégé Program

Example of Project Duration

<table>
<thead>
<tr>
<th>PHASE</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Preparation</td>
<td>12%</td>
</tr>
<tr>
<td>Business Blueprint</td>
<td>15%</td>
</tr>
<tr>
<td>Realization</td>
<td>46%</td>
</tr>
<tr>
<td>Baseline</td>
<td>12%</td>
</tr>
<tr>
<td>Final Configuration</td>
<td>13%</td>
</tr>
<tr>
<td>Integration Test</td>
<td>21%</td>
</tr>
<tr>
<td>Final Preparation</td>
<td>19%</td>
</tr>
<tr>
<td>Go Live &amp; Support</td>
<td>8%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: SAP (2002)
### Example: Phases of ERP Project at a University

- **Invitation to Negotiate**
  - 3 consortium universities (in Florida)
- **Short List**
  - PeopleSoft
  - Oracle
  - SCT
- **Software Evaluations**
  - 3 consortium universities
  - Each vendor – 1 week
- **Conference Room Pilot**
  - 3 consortium universities
  - One vendor – 6 weeks planned – In reality 3 weeks
- **Software Selection – PeopleSoft (leading ERP vendor for university market)**

---

### Example: University ERP

- **Project Phases**
  - **Team Training Phase**
  - **Configuration Phase (also called Structure Phase)**
    - Knowledge transfer
      - Consultants configure
      - Consultants guide configuration
      - Team Leaders configure
    - Identify gaps
  - **Construction Phase**
    - Write specifications and develop from specifications
      - Data conversion
      - Interfaces
      - Modifications / Customizations – Close gaps
    - Pre-Production Hardware
Air Force Mentor-Protégé Program

Example: University ERP

- **Project Phases (cont’d)**
  - **Transition Phase**
    - Stress testing
    - Certification by State
    - Campus-wide training
    - Additional functionality
  - **Deployment and Stabilization Phase**
    - Go Live
    - Security
    - Performance support

PeopleSoft Implementation Project

- **Example for a university HR module implementation**
<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Discussed ERP life-cycle phases</td>
</tr>
<tr>
<td>- ASAP methodology as example</td>
</tr>
<tr>
<td>- University implementation as example</td>
</tr>
</tbody>
</table>