Air Force Mentor-Protégé Program

ERP Misfit Analysis

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ERP Methodology and Project Management
Agenda

- Misfit or Gap Analysis Concepts
- Misfit Classification
- Handling Misfits
- Project Management Implications
Context of Gap Analysis

- In ERP Implementation Project you need to compare the ‘AS-IS’ with the ‘TO-BE’

- Gaps between the two models need to be resolved
ERP

Organization
- Strategy
- Business
- Manufacturing
- Manufacturing Capabilities

Integration Mechanisms
- Business driven implementation
  - IT link to organizational strategy
  - Integration of IT in organization
- Project management and structure
  - Project management
  - IT Steering committee
  - Use of external consultants
  - Vendor selection criteria
- Organizational adaptation
  - Extent of BPR
  - Adequacy of user training
  - Package adaptation

ERP System

System Value

Day 2 Module 5
Slide 4
Process analysis and design

Day 2

AS IS
- Process Assessment
- Information Requirements
- Organization Structure

TO BE
- Needs Assessment
- Refine Goals
- Assess Readiness

GAP ANALYSIS
Modeling ‘As-Is’

- The primary model should be a process model.
- There are different modeling alternatives:
  - Flow Chart
  - EPC (best if using SAP)
  - Activity Diagrams (UML)
- The modeling effort should involve business users.
- Validate model with users.
- Document exceptions in text.

Day 2
Modeling ‘To-Be’

- The To-Be model starts with the reference models from the ERP system
- For example, SAP provides EPC diagrams of all models
Definitions

• FIT
  • Refers to the degree of adjustment or suitability to provide a good match for a specific objective

• Misfit
  • The gap between the functionality offered by the ERP package and that required by the adopting organization
## Misfit Classification

<table>
<thead>
<tr>
<th>Misfit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Difference concerning data definitions; data fields, entities, and relationships.</td>
</tr>
<tr>
<td>Functional</td>
<td>Differences concerning processes. Different functions, processes, or tasks.</td>
</tr>
<tr>
<td>Output</td>
<td>Differences in required output content and format.</td>
</tr>
<tr>
<td>Input</td>
<td>Differences in required input content and format.</td>
</tr>
</tbody>
</table>
### Example Misfits from PeopleSoft Implementation

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data (Security)</strong></td>
<td>PeopleSoft lets you view all employees records for travel, expenses, and so forth.¹</td>
</tr>
<tr>
<td><strong>Functional</strong></td>
<td>If an exception expense is made to an account and the account exceeds its budget you cannot undo an exception expense. You must add funds to the budget. ¹</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Government contractors required to comply with DCAA cannot use ERP systems that are missing these accounting procedures.</td>
</tr>
</tbody>
</table>

¹ Note, these misfits were discovered after ‘go live’.
Examples of Misfits in PantherSoft

- An adjunct professor stated that one of the courses he teaches was input into the system as ‘staff’ so when it came time to assign grades he couldn’t because he wasn’t assigned in the system. (He did not have the authority).
- A common business practice is to schedule courses and then assign faculty.
  - Course Schedules are created a semester in advance before availability of adjuncts can be confirmed.
- In PeopleSoft this business policy needs to be revised.
Severity of Misfit

- The misfits are not all equal. A company might well be able to work around a poor report but find it difficult to deal with missing functionality.

- The severity of the misfit is defined as the cost of addressing or not addressing the misfit.
Handling Misfits

Options:

1. Change the business process or Adapt to new functionality
2. Customize ERP package
3. Institute workarounds
4. Live with shortfall
# ERP Customization Options

<table>
<thead>
<tr>
<th>Technical Customization Options</th>
<th>Process Customization Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Customization</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>Incremental Change</td>
</tr>
<tr>
<td></td>
<td>Radical Change</td>
</tr>
<tr>
<td>No customization</td>
<td>No customization</td>
</tr>
<tr>
<td></td>
<td>Process Adaptation</td>
</tr>
<tr>
<td></td>
<td>Process Conversion</td>
</tr>
<tr>
<td>Table Customization</td>
<td>Fit system to Process</td>
</tr>
<tr>
<td></td>
<td>Mutual Adaptation</td>
</tr>
<tr>
<td></td>
<td>Fit process to system</td>
</tr>
<tr>
<td>Code Customization</td>
<td>System Conversion</td>
</tr>
<tr>
<td></td>
<td>System conversion &amp; Process Adaptation</td>
</tr>
<tr>
<td></td>
<td>System and Process Reengineering</td>
</tr>
</tbody>
</table>
## Addressing a Misfit

<table>
<thead>
<tr>
<th>Misfit Description</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PeopleSoft requires a unique ID for each student/employee. In order to reimburse travel expenses for an interviewee, the interviewee must have this ID.</td>
<td>A process is in place for establishing ‘non-employee’ IDs.</td>
</tr>
</tbody>
</table>
Workaround Types

- Reporting Workarounds
  - ERP system reports don’t match user needs. Staff develop custom reports in Excel or other desk-top application.

- Process Workarounds
  - The business processes embedded in ERP are insufficient. Staff do some tasks outside of ERP system.

- Data Workarounds
  - The business unit utilizes a database outside of the ERP system (e.g. MS Access, Excel, or paper files).
Industry Example of Addressing a Misfit

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>A wood products company in Georgia implemented SAP with the same configuration across several plants. Their Augusta plant differed significantly from the other plants because it produces mostly non-standard products. ERP was configured to meet the needs of the dominant standard product plants.</td>
<td>The Augusta plant could not: (1) reengineer their processes since the business required them to handle non-standard products and (2) could not configure the ERP to their needs because the company was instituting the same ERP across all plants. Augusta personnel instituted ‘workarounds’ involving Excel spreadsheets and paper processes.</td>
</tr>
</tbody>
</table>
Example Misfit Workaround in PeopleSoft

- The FIU Engineering College requires permissions for course registration
- PeopleSoft does not have a task for advisor permission prior to registration
- Engineering College did not change business process
- Industrial & Systems Engineering Dept. created a workaround, in which they use Excel spreadsheet to distribute permissions
- An additional hurdle when implementing ERP in a university is that each college (engineering, arts and sciences, business) has different processes
EPC of Registration Process

- Example for FIU enrollment
- **PARTIAL** EPC Model of Student enrollment in Legacy system
EPC of PantherSoft Implementation

- Example for FIU enrollment
  - **PARTIAL** EPC Model of Student enrollment in the PeopleSoft ERP package
Mismatch

Advisor Approval not captured in ERP
Current enrollment in PantherSoft.

- Using workarounds to compensate for Misfit.

EPC showing workaround.
Excel Workaround

- Example for FIU enrollment
  - Permit Numbers for enrollment
Costs Involved

- When Implementing ERP you are installing a standardized system.

- If the organizational units involved in the installation are highly differentiated then you need to consider two costs in handling misfits.
  - **Design costs** – time and money spent developing common understanding (data definitions and processes) across heterogeneous units.
  - **Compromise costs** – the costs including decreased operational performance or decreased data relevance due to one or more organizational units having to use an ERP that is not well tailored to the peculiarities of the tasks they must execute.
Project Management Implications

- Need to involve business users in modeling efforts.
  - Best Practice – User participation (assisted by good consultants who act as facilitators).

- Example of User Involvement in Process Modeling.
  - A cruise company would hold sessions with small groups of reservation agents and task them with a scenario (e.g., honeymoon couple reservation).
Project Management

Implications

- Documentation
  - Business models
    - In SAP part of ‘business blueprint’
    - Document of ‘To-Be’ will help measure compliance.
  - Misfit or Gap Analysis
  - Plans etc. (from other phases)

- Feedback misfit analysis to risk management plan.

- Plan how to handle gap, assign action item, and monitor.
A significant task in ERP implementation is ‘gap analysis’.
- In different ERP systems and methods the concept goes under different names, but the objective is the same: To analyze the differences between the organization and the ERP system”.

There are several ways to handle misfits, the most appropriate way depends on the severity and organizational context.