Facing ERP Challenges  
Educause 2000

General Profile

Project: Student Information Services and Systems  
Institution: Duke University  
Population: 13,000 undergraduates, graduate and professional students; 1300 faculty

Milestones

Implementation began. March 1997  
Admissions went live. September 1998 – September 1999  
Upgraded from PeopleSoft 7.0 to 7.5. June 1999  
Student Records went live. March 2000\(^1\)  
Student Financials went live. July 2000

Project Organization

<table>
<thead>
<tr>
<th>Role</th>
<th>Implementation (FTE)</th>
<th>Post Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Sponsor</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Project Manager</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Technical Project Manager</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Senior Coordinator</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Functional Team(^2)</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Technical Team(^3)</td>
<td>8</td>
<td>9(^4)</td>
</tr>
<tr>
<td>Functional Consultants(^5)</td>
<td>2</td>
<td>0.5</td>
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<tr>
<td>Technical Consultants(^6)</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Team Structure

- Executive Committee
- Steering Committee
- SISS Coordinators – Executive sponsor, project and technical project manager and senior coordinator (weekly).
- Project team – Functional team and technical project manager (weekly).

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\(^1\) Postponed records go-live from June 1999 to November 1999 and then to March 2000.  
\(^2\) Includes 6 persons at 0.5 FTE during the implementation and no part-timers post implementation.  
\(^3\) Post implementation breakdown: 5.5 operational support and 5.5 new/enhanced development.  
\(^4\) As of 10/30/2000, considering adding 2.0 more FTEs to bring total to 11.  
\(^5\) From PeopleSoft Professional Services Group  
\(^6\) Independent consultants having PeopleSoft HR/Payroll experience (3) and an Oracle developer
• Functional team (weekly)
  o Admissions
  o Financial Aid
  o Records
  o Financials
• Technical team (weekly)
  o PeopleTools
  o Data conversion and interfaces
  o Web development
  o Oracle and EDI
  o Systems Administration
• Local functional leaders team (quarterly)
• Local technical leaders team (biannually)

Technical Architecture

Oracle database server (1) – IBM RS/6000 S7A (8-way, 10Gb Ram)
PeopleSoft application server (2) – IBM RS/6000 H70 (4-way, 2Gb)
ACES Web application server (3) – IBM Netfinity NT (2-way, 1Gb)
Web servers (3) – IBM RS/6000 F50 (2-way, 1Gb)
Citrix Metaframe server (1) – IBM Netfinity NT (4-way, 2Gb)
Novell file server (1) – IBM Netfinity NT (2-way, 1Gb)

System Architecture

• PeopleSoft Student Administration for Microsoft Windows access (3-tier)
• Citrix Metaframe for Mac and Unix access (4-tier)
• ACES Web faculty, staff and student interface with Kerberos authentication enabled
  (3-tier/6 systems – desktop client, web servers, DCE servers, ACES Web application
  servers, PeopleSoft application servers, and Oracle server)
• AppWorx process scheduler
• JetForms Central Server, Designer and PeopleSoft Student Administration forms
  package
• Universal Algorithms Resource 25
• Intellisoft Snareworks for DCE Kerberos authentication
• BMC Patrol for Oracle
Support Models

Traditional IT Support Model

1. Emphasis placed on legacy systems, which are difficult to configure for supporting existing business processes; therefore business processes are changed to fit systems.

2. Legacy systems require technical expertise to configure, usually at the code level. IT staff does not need to understand business processes because systems work as delivered. IT staff translates requirements into technical specifications and implements, which leads to IT driven implementations. Inevitable systems modifications increase system complexity, increasing the reliance on IT control and involvement.

3. Departmental and shadow systems compensate for lack of functionality in central systems. Local IT staff typically support these systems and central IT staff become less involved in business processing. Reduces demand for change in central systems.

4. Functional team dependence on IT staff for performing reporting and batch processing functions.

Contemporary IT Support Model

1. Emphasis shifts from ERP systems, which are easily configured to support business processes, to making business processes more efficient.

2. ERP systems are table driven and easily configured by functional teams. ERP systems implementations are functionally driven. User-friendly interfaces hide technology. Functional staffs become empowered to troubleshoot system problems and may have to involve IT staffs. IT staffs must understand business processes and how they are configured to effectively troubleshoot the system. Problems are resolved through functional and technical teamwork.

3. ERP system implementations eliminate departmental and shadow systems.

4. User-friendly, graphical user interfaces empower functional team to perform traditionally technical tasks, such as writing reports and running batch processes.

5. Distributed, multi-tiered client/server systems are complex and difficult to support and require greater attention by IT staff. Greater reliance on complex technology increases the need for specialized IT services and creates opportunities beyond traditional IT role.

6. Coordination of setup and configuration occurs at the functional level to avoid cross-functional problems in an integrated system. Higher number of problems related to functional setup and configuration require greater collaboration between IT and functional staff.
**IT Challenges**

- Realization at the project team level that all tasks have technical and functional ramifications and it is in the best interest of the project to attempt to understand and communicate these. Project team effectiveness is increased.

- Appreciate each other’s roles in the project and accept that everyone is equally important to the success of the project.

- Technical leaders accept realization that learning functionality will make them more marketable (not less). Functional team does not use their business processing expertise to intimidate the technical team.

- Functional leaders are not intimidated by and willing to learn technology. The technical team has patience in working through technical issues with the functional team and does not use technology as an intimidating factor.

- Functional leaders participate in weekly technical team meetings so that everyone understands technical and functional issues.

- Technical project manager represents IT at weekly functional team and SISS coordinator meetings. Occasionally technical leaders invited to functional team meetings.

- Technical team leaders offer training and mentoring in PeopleTools Mass Change, Crystal Reports, Query Tool, Operator Security, Structured Query Language, and SQR.

- Functional team leaders offer training and mentoring in PeopleSoft Student Administration functional modules.

- Establish IT presence in functional team office to provide support during early phase of the implementation.

- Functional and technical teams celebrate milestones together.
Other Challenges

- Support from Senior Administration
  - Mandate university wide system use
  - Hold system vendor accountable
  - Financial
- Project Management
  - Internal vs. outsourcing
  - “Scope creep” – Replace existing functionality first.
  - Over-budget you’re going to need it to cover hidden costs, postponed go-lives, etc.
- Project staffing
  - Composition – enlist key stakeholders.
  - Recruit really good people inside your organization.
  - Provide financial incentives to reach milestones.
  - Staff retention
  - Part time expectations
  - Avoiding burnout – celebrate milestones.
- Communications
  - Identify key stakeholders
  - Provide quarterly updates to key stakeholders
- Technical Architecture
  - Importance of C/S infrastructure, i.e. network, system monitors
- Training
  - Internal vs. outsourcing
- Implementation
  - Keep the vision alive and your eyes on the prize at all times
  - Software stability
  - Consolidate and apply upgrades and patches on a quarterly basis
  - System modifications policy
  - Big Bang vs. phased implementation
  - Consulting
    - “Burst or cafeteria” approach
    - ERP vendors services are preferred
  - Vendor support – importance of an account representative
  - Users accept “ownership”
  - Enabling new technologies
  - Leveraging and measuring return on investment
  - Establish success measures