**IMPROVING ENTERPRISE INFORMATION MANAGEMENT—TEAM 9**

**The Process of Refining a Construction ERP**

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**BACKGROUND**

- Client is a medium sized construction firm specializing in shoring operations
- Enterprise Resource Management system developed in-house (Microsoft Access)
- Scalability and accuracy of information needs to be greatly improved

**PROJECT OBJECTIVE**

To Improve the accuracy, accountability, and maintainability of information within the company through the better use of applicable software design practices and management sciences techniques.

**METHOD**

- Interview and Requirements Gathering
- Low Fidelity Prototyping
- Use Case Analysis
- HCI and MSCI Analysis
- Medium Fidelity Prototyping
- User Testing
- High Fidelity Prototyping
- User Acceptance Test
- System Integration

**RESULTS**

**BACK END DATABASE—SYSTEM DATA MANAGEMENT IMPROVEMENT**

- Operational databases ETL from central DW and used by modules
- Central DW only holds data for operational data
- Central DW cannot be accessed directly by personnel
- Archival data is stored in the archive DW

- Eliminated redundant tables and attributes
- Constructed conceptual design model (CDM)
- Constructed logical and physical design model
- Added reference tables and relational design patterns

**FRONT END USER INTERFACE—SYSTEM USABILITY IMPROVEMENT**

**UI Issues:**
- Poor Usability
- Tedious Tasks
- Redundant steps

**Main Tested Functions:**
- Inventory Module
  - Add, Remove, Edit Equipment
- Project Management Module
  - Create/Modify Project info

<table>
<thead>
<tr>
<th>Old Interface</th>
<th>New Interface</th>
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</thead>
<tbody>
<tr>
<td>Processing Time for Test Cases</td>
<td>Number of Clicks to Complete Test Cases</td>
</tr>
<tr>
<td>Test Cases 1</td>
<td>Test Cases 2</td>
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</tbody>
</table>

**Legend:**
- Proprietary Application
- Off-the-Shelf Application

**ENVIRONMENTAL/ECONOMICAL IMPACTS**

- Extending the use of the current system reduces purchases of additional electronics—reduces electronic waste
- Improved accuracy in inventory data allows for better informed resource purchasing strategies

**BACKGROUND**

- Single central data warehouse—Manually accessible by most personnel
- Stores both operational and historical data
- Relational database model is highly unorganized
- Allows user to freely input irrelevant data (garbage data)

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