Development and Use of a Project Management Database System

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University of Wisconsin Survey Center
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History

• UW Survey Center began as a small shop
  • Fewer staff
  • Smaller project workload
  • Easier to manage and track outcomes

• Grew over time
  • Taking on more work
  • Increasing project complexity
  • Adding staff
  • Increasing management complexity
Management Team Goals

• Improve staff communication
• Strengthen collaborative effort between departments
• Document project requirements
  • Centralized data store
• Ability to track and review project timelines
• Gather data and report on full life-cycle of a project

• Project Doc Survey
  • First attempt to meet these goals
Project Doc Survey - Functionality

• Centralized database
• Track project data
• Main focus
  • Collect initial project requirements
  • Gathered at the start of a project
• Programming team expanded on the use of Project records
  • Added data elements to serve as configuration settings for automated processes for CATI and DE projects
Project Doc Survey - Limitations

- Programmed as a web survey
  - One data element entered per screen
  - Challenging to view, edit, and comprehend the data
  - Inconvenient to update
- Didn’t gather full life-cycle data of a project
- Data structure unable to model growing project complexities
  - Multi-modal
  - Waves
- Necessary for some projects because of the automation settings
  - Inconsistently used for other projects
Management Team Goals

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- Strengthen collaborative effort between departments
- Document project requirements
  - Centralized data store
- Ability to track and review project timelines
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- Project Management Database (PMDB)
PMDB System Requirements

• Manage and track projects
  • Through full life-cycle from proposal to post-production and completion
  • Real-time view into current project activities
  • Historical view into activity of all projects
• View staff assignments
  • Within multiple teams
• Centralized data repository
  • Single reference-point for all projects for all staff
• Integrate automation systems from the Project Doc Survey
  • Manage configuration through a single portal
System Requirements

• Record project meta-data
  • Reports
  • Data dashboards
• Available for management team
  • Analyze trends
  • Evaluate current and anticipate future workload
  • Explore potential process improvements
  • Examine impact on business processes
  • Adapt to changing requirements
• Incorporate additional functionality over time
  • Integrate all project-related data
Project Management Database (PMDB)

- Custom web application
  - Visual Studio
  - C#, JavaScript, HTML, ASP.NET
  - MySQL database
  - Web browser to access the program
PMDB Security Features

- Web Application hosted on our local intranet
- User-authentication tools from the University
  - Limited to users within our group
- PMDB application security layer
  - Manages users and their roles
  - Enable/disable features based on user-role
- Database best-practices prevent SQL-injection attacks
**Client**
- Name
- Contact information
- Institution

**Proposal**
- Estimated development start
- Estimated field start
- Modes
- Sample size

**Project**
- Assigned Project Directors
- Assigned Programmers
- Development start date

**Project Instrument**
- Mode
- Assigned Staff
- Milestone dates
- Automated process fields
<table>
<thead>
<tr>
<th>Client</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Name</td>
</tr>
<tr>
<td>• Contact information</td>
</tr>
<tr>
<td>• Institution</td>
</tr>
</tbody>
</table>
Client Setup

UWSC Project Management Database

Client Setup

Search Name: kn

First Name: Flxxx
Last Name: Knnxxx
Institution: [Dropdown]
Department: [Dropdown]
College: [Dropdown]
Phone: [Dropdown]
Address 1: [Dropdown]
Address 2: [Dropdown]
City/State/Zip: Madison, WI 53716
Email: [Dropdown]

Accept | Cancel
<table>
<thead>
<tr>
<th>Client</th>
<th>Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Name</td>
<td>• Estimated development start</td>
</tr>
<tr>
<td>• Contact information</td>
<td>• Estimated field start</td>
</tr>
<tr>
<td>• Institution</td>
<td>• Modes</td>
</tr>
<tr>
<td></td>
<td>• Sample size</td>
</tr>
</tbody>
</table>
Proposal Data

- Each project starts as a proposal
- Shaped through discussions/negotiations between management team and the client
- Basic outline of expectations
  - Focus
  - Timeline
  - Scope
- Management team gathers and enters Proposal data
Proposal Setup

UWSC Project Management Database

Proposal Setup

Select Proposal: [ ]

General Information

Name: BRFSS 2015
Proposal Date: 11/12/2014
Client: [ ]
Client Institution: [ ]
Client Department: [ ]
Client College: [ ]
Client Phone: [ ]
Client Email: [ ]
Client Address 1: [ ]
Client Address 2: [ ]
Client City/State/Zip: [ ]

Status: Approved
Funding Likelihood: High
Funding Status: Funded
Funding Notification Date: 11/12/2014
Model: SATI

Estimated Development Start: [ ]
Estimated Field Start: 1/1/2015
Sample Size: 5660
Targeted Completes: 2000
Length (minutes): 2516
Length (pages): [ ]

Approve Proposal

Approved Project Details

Project Number: P1064
Project Name: BRFSS 2015
Project Status: Funding

[ ] Accept [ ] Cancel
Proposal Approval

• A proposal is ready to be approved when
  • Negotiations completed
  • Received funding

• Approve the proposal in the PMDB
  • By a member of the management team
  • Creates a new project record
    • Copying some proposal data into the new project
      • Allows us to run comparisons on the original proposal data against the actual project implementation data
Proposal Approval
<table>
<thead>
<tr>
<th>Client</th>
<th>Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Name</td>
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</tr>
<tr>
<td>• Institution</td>
<td>• Modes</td>
</tr>
<tr>
<td></td>
<td>• Sample size</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assigned Project Directors</td>
</tr>
<tr>
<td>• Development start date</td>
</tr>
<tr>
<td>• Assigned Programmers</td>
</tr>
</tbody>
</table>
Project Setup

UWSC Project Management Database

General Information

- Project Number: 1061
- Name: PRFSS 2015
- Status: Pending
- Development Start: 1/1/2014
- Exp Sample Size: 3000
- Expected Completes: 2500
- Exp Length (min): 2516

Project Director
- Responsibility

Programmer
- Responsibility

Notes:

Client:
- Client Institution:
- Client Department:
- Client College:
- Client Phone:
- Client Email:
- Client Address 1:
- Client Address 2:
- Client City/State/Zip:

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SURVEY CENTER
Project Instrument Data

• A single project can
  • Have multiple waves
  • Be multi-modal

• Project Instrument records
  • One-to-many relationship between Project and Instruments
  • Fundamental change to previous system
  • More accurately models data relationship of complex surveys
# Project Setup - Instruments

<table>
<thead>
<tr>
<th>Mode</th>
<th>PROJECTS Pnum</th>
<th>Name</th>
<th>Programming Start</th>
<th>Delivery Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATI</td>
<td>p1084_05</td>
<td>BRFS 2015 May</td>
<td>10/6/2014</td>
<td>6/15/2015</td>
</tr>
<tr>
<td>CATI</td>
<td>p1084_03</td>
<td>BRFS 2015 March</td>
<td>10/6/2014</td>
<td>4/15/2015</td>
</tr>
<tr>
<td>CATI</td>
<td>p1084_04</td>
<td>BRFS 2015 April</td>
<td>11/1/2014</td>
<td>4/15/2015</td>
</tr>
<tr>
<td>CATI</td>
<td>p1084pre</td>
<td>p1084pre BRFS 2015 pretest</td>
<td>12/12/2014</td>
<td>12/31/2014</td>
</tr>
</tbody>
</table>

 schlapper logged in to production
Client
- Name
- Contact information
- Institution

Proposal
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- Modes
- Sample size

Project
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Project Instrument
- Mode
- Assigned Staff
- Milestone dates
- Automated process fields
Project Instrument
Project Instrument
Project Checklist

• Tool to document a thorough list of all possible requirements for a project
• Ability to attach a note to each item
• Filled in before or during a project kickoff meeting
  • Project Directors and Programmers
## Project Checklist

### P1023: BRFSS Asthma 2014 Follow-Up

<table>
<thead>
<tr>
<th>Estimated Development Start:</th>
<th>03/29/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled Field Start:</td>
<td>03/29/2014</td>
</tr>
<tr>
<td>Scheduled Field End:</td>
<td>03/29/2015</td>
</tr>
<tr>
<td>Expected Sample Size:</td>
<td>5200</td>
</tr>
<tr>
<td>Expected Completes:</td>
<td>520</td>
</tr>
<tr>
<td>Expected Length (min):</td>
<td>16</td>
</tr>
<tr>
<td>Expected Length (days):</td>
<td></td>
</tr>
</tbody>
</table>

### Staff

- **Programmers:**
- **Project Directors:**
- **Field Staff:**
- **Client:**
- **Client Institution:**

### Background and Overview

- **How did UWSC come to do this project?**
- **Has the client worked with other survey organizations in the past?**
- **Is this a pilot project?**
- **Future expectations for this**

![UWSC Project Management Database](image-url)
Project Checklist

UWSC Project Management Database

Project Checklist

Select Project: [ ]

P1023: BRFSS Asthma 2014 Follow-Up

Future expectations for this project or this client?

Budget Concerns

Hardware

- Laptops
- Tablets
- Phones
- Other

Software

- Monode
- Case Report
- AirWatch
- Screener
- Path Finder
- CAPI Timesheet
- Other

Mail Database

- What data should be tracked in the mail database?
- What mailings will be tracked?
## Project Checklist

**UWSC Project Management Database**

### Project Checklist

**P1023: BRFSS Asthma 2014 Follow-Up**

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>What mailings will be tracked in the mail database?</td>
<td></td>
</tr>
<tr>
<td>Will any of the mailings need to be sent multiple times?</td>
<td></td>
</tr>
<tr>
<td>Will sample be imported into the mail database more than once?</td>
<td></td>
</tr>
<tr>
<td>Will any of the mailings contain multiple components, which should be traded separately?</td>
<td></td>
</tr>
</tbody>
</table>

### Development

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date instrument development begins</td>
<td></td>
</tr>
<tr>
<td>Expected pretest field period dates</td>
<td></td>
</tr>
<tr>
<td>ACASI?</td>
<td></td>
</tr>
<tr>
<td>Experiments?</td>
<td></td>
</tr>
<tr>
<td>Interviewing children?</td>
<td></td>
</tr>
<tr>
<td>Bio-Markers?</td>
<td></td>
</tr>
<tr>
<td>Who will work on debugging?</td>
<td></td>
</tr>
<tr>
<td>Will we use the lab server for debugging?</td>
<td></td>
</tr>
<tr>
<td>How exhaustive will the debugging be?</td>
<td></td>
</tr>
<tr>
<td>Does our standard front-end need to be customized?</td>
<td></td>
</tr>
</tbody>
</table>

...
# Project Checklist

![UWSC Project Management Database](image)

**Project Checklist**

Select Project: [Search]

**P1023: BRFSS Asthma 2014 Follow-Up**

<table>
<thead>
<tr>
<th>Question</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does our standard front-end need to be customized?</td>
<td></td>
</tr>
<tr>
<td>Are there unique selection criteria for the front-end?</td>
<td></td>
</tr>
<tr>
<td>Are we selecting multiple respondents per unit (household, business, etc)?</td>
<td></td>
</tr>
<tr>
<td>Is this a stand-alone data collection or will the data collected be used in future waves of data collection?</td>
<td></td>
</tr>
<tr>
<td>Will we use rosters or macros?</td>
<td></td>
</tr>
<tr>
<td>Are there sections of the instrument that require special consideration?</td>
<td></td>
</tr>
<tr>
<td>Will all data collection take place within the CASES instrument?</td>
<td></td>
</tr>
<tr>
<td>Will we be recording these interviews?</td>
<td></td>
</tr>
<tr>
<td>Special privacy or security needs?</td>
<td></td>
</tr>
</tbody>
</table>

**Source of sample**

**Timing of sample**

**Quotas?**

---

**Sample**

---

*Schweizer logged in to production*
Project Gantt Chart

- Graphic representation of each project’s status over time
- Uses milestone dates
- Reviewed and modified as they approach, as needed
- Changes should prompt an email and initiate a discussion/negotiation with the other team members
- Once the activity has begun, that date is assumed to be accurate and will be used for summary reporting
Project Gantt Chart
Project Gantt Chart

• Recommended use
  • Filter by staff to view your own projects
  • Review upcoming dates
  • Communicate questions or concerns with colleagues
  • Modify dates as they approach, as needed
    • Email colleagues with any changes
    • Discuss, review, and adjust subsequent dates, if needed
PMDB - Current Status

• Live and in-use
  • Tracks all proposals and projects
  • Provides management team with proposal reports
• Project Checklist
• Project FAQ
  • Read-only summary of a project
• Project Gantt Chart
• Replaced configuration controls for the automated systems
• Use to collect CAPI QC
  • Summary reports
Challenges

- Need for flexibility in design and implementation
  - Management data now being systematically tracked
  - Uncover additional data requirements
  - Evolving features and implementation
- Balancing
  - Ease-of-use
  - Amount of useful data
    - Avoid overwhelming the data-collection process
- Staff
  - New responsibility
  - Timelines continuously evolve
Future Plans

- Implement data dashboard
  - Customizable by user
- Additional reports to compare a proposal’s anticipated timeline with the actual project’s timeline
- Build Task program
  - Associate a custom task with a project
  - Available for all affiliated staff to review and edit
Future Plans

- Create a single entry point for QC for all modes
  - CAPI notes review
  - CATI QC and monitoring tools
  - M&DE Verification tool
- Automate timesheets and recording billable time by project
- Implement a data warehouse to centralize the display and reporting on current and historical outcomes for all projects
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• Eric White
Thank you!

For copies of this presentation or more information, please contact me at cschlapper@ssc.wisc.edu

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