Tracking Allocation of Costs across Studies: Development of a Software Solution

Chris Schlapper

University of Wisconsin Survey Center
University of Wisconsin-Madison

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Track Allocation of Costs

- Reconcile center expenses and payroll with current studies and their contracts
- Business office
- Monthly reports
  - Staff hours
  - Payroll and benefits
- Accounting software package (QuickBooks)
  - Shadow accounting system
  - Separate from University system
  - Meet our organization’s tracking and reporting needs
Staff Hours

- Recorded by study
- Not associated to a specific study
  - General administrative time
  - Developing infrastructure and systems
  - Attending conferences
  - Benefit time
    - Vacation
    - Sick
    - Leave
  - Allocate across active studies for the month
    - Business office and field supervisor staff
Process – Original System

- Evolved over many years
- Multiple internally-developed data sources
  - Spreadsheets
  - Timesheet databases
- Manual data entry
- Master spreadsheet
  - Seven data-entry worksheets
  - One formula calculation worksheet
  - Two formula-dependent summary/report worksheets
Process Challenges – Master Spreadsheet

• Amount of data difficult to work with
  • Grids display all possible studies and staff
  • ~40 full-time and part-time staff
  • ~80-120 active projects during any given month
• Complex “spaghetti” formulas performing calculations
• Difficult to reliably update or modify
• Prone to data entry errors
• Time-consuming

• Create a new solution!
Process Goals – New Solution

• Eliminate the Master Spreadsheet
• Leverage automation
  • Minimize manual data entry
  • Import data into a centralized data structure
• Business Office Software System (BOSS)
  • Administrative software package
  • Developed in-house
• Implement more useful reporting tools
• Provide “show your work” feature
  • Illustrate how calculated values are produced
Data Sources

- University Staff Timesheet Database
- Student / Other Timesheet Database
- CATI Production Database
- Other F/T Staff Timesheets
- Field Timesheets & Production Logs
- University Payroll & Benefits Reports
Production Summary

Month/Year: Apr 2019

Import Data

1. Select the Month/Year to import.
2. Select the type of data to import from the [Import Type] dropdown.
3. Click the [Choose File] button to select the .CSV or .XLSX file to import.
4. Click the [Import] button.

Please note that any data previously imported for this month/year will be deleted and replaced with the newly selected file’s data.

Import Type:

[Choose File] No file selected.

Import

Accessing selected file ...
Verifying the selected Month/Year is included in the selected file’s name ...
Selected file invalid. Its name must include 2019-04.
Import terminated.
Import Data Source File Requirements

- Formalize file naming convention
  - Including report month/year
- Lock down spreadsheet layout
- Perform data validation
- Create lists/categories, confirm during validation
- Throw meaningful validation errors
  - Guide updates/corrections
Please select a Report from the menu on the left.
### Field Hours Table

**Month/Year:** Apr 2019

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<th>PNUM</th>
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<th>QB Item</th>
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**Equation**

\[(17.25 \times 0.50 / 49.25) + 0.50\]

**Formula**

\[\text{Tracing Production} \times [\text{Allocated Hours}[06263-041] \times p1209[06263-041] / \text{Project Hours}[06263-041]] + p1209[06263-041]\]
“Show Your Work” Feature

• Illustrates how calculated values are produced
• Debug tool
• Provides confidence in the calculations
• Training future staff
• Administrative staff consider future formula adjustments
Testing and Debugging Results

- Ran both systems in parallel ~6 months
  - Minor programming tweaks
    - Account for “exceptional” or rarely seen data
  - “Show your work” feature invaluable
  - Discrepancies consistently tracked back to the old system
    - Spreadsheet formula errors
    - Mis-keyed data entry
Project Outcomes

• Exclusively using new system
• Time savings of ~10 hours per month for Business Office Manager
• More accurate
  • Greatly reduced the risk of errors
• Faster turn-around for administrative staff
Future Features

• Automate the rest of the process
• Import data directly into QuickBooks
  • Eliminating all manual data entry
  • Already taken steps towards implementing
  • Estimate additional 8-10 hours of time-savings per month
• Create centralized database for Field staff
  • Automate data gathering processes
    • Electronic timesheets
    • Electronic production logs
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For copies of this presentation or more information, contact:

Chris Schlapper  
cschlapper@ssc.wisc.edu

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