February 12, 2018

SIS OP Functional Discovery Debrief and CS 9.2 Upgrade Planning

Objectives for Meeting

(1) Provide overview of Functional Discovery, including deliverables and key findings.
(2) Discuss proposed Campus Solution 9.2 upgrade project (CS 9.2), including hosting.
(3) Discuss major risks associated with the CS 9.2 upgrade project.
(4) Discuss required one-time financial campus support to execute the project.
(5) Receive initial confirmation of funding commitment, including solidifying plan for project hosting.
(6) Receive guidance on how to directly engage with desired upgrade partner.

Functional Discovery Overview

From October 2017 to January 2018, Division of Enrollment Management units and the Bursar's Office were involved in a Functional Discovery with the main objective to review current business processes and determine if there were any opportunities to 'optimize' the SIS system. Additionally, the Functional Discovery was designed to assist in planning the actual CS 9.2 upgrade by developing a baseline project plan and other related upgrade documents. UW-Madison decided to view the CS 9.2 upgrade as a way to 'optimize' the system by completing a comprehensive functional review of SIS and leveraging unused/underutilized functionally to replace modifications or provide new value-added processes. The focus on removing modifications was also a first step in preparing for the eventual move to the Cloud. This was the first time UW-Madison conducted such a comprehensive exercise since SIS was implemented in 1998.

UW-Madison partnered with Deloitte Consulting, LLP to lead the Functional Discovery utilizing a 4-step process:
(1) **Understand** 'Current State'. What and why did UW-Madison modify SIS?
(2) **Compare** 'Current State' with CS 9.2 delivered functionality.
(3) **Recommend** the CS 9.2 'Future State' to retain modifications or replace with delivered functionally and/or deploy unused/underutilized CS 9.2 functionality.
(4) **Decide** if a recommendation is approved for the CS 9.2 upgrade or if additional stakeholder feedback is needed.
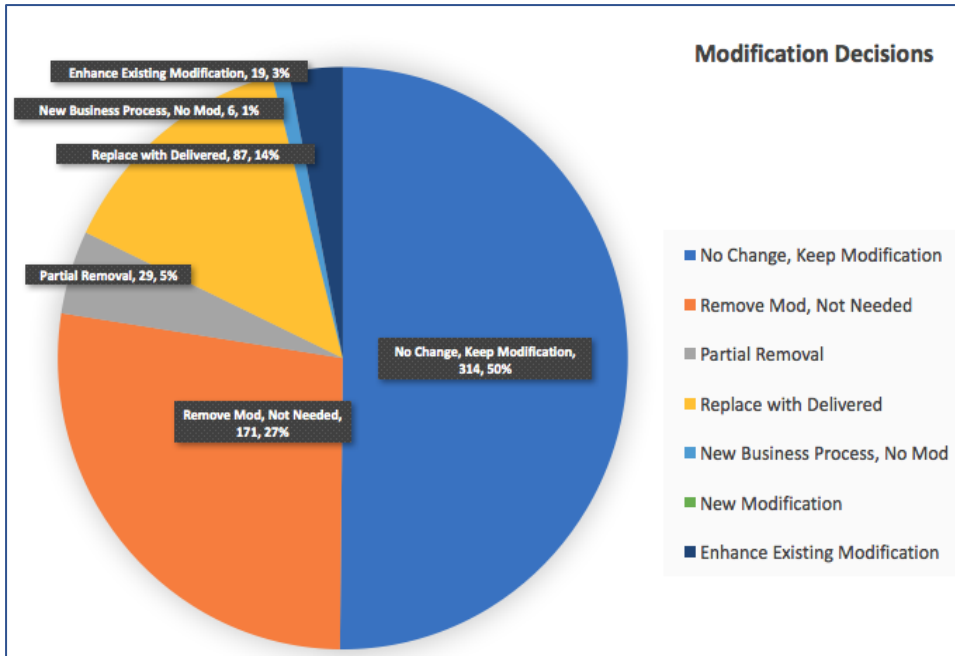
In total, UW-Madison identified 514 business processes with 626 associated modifications. 170+ review meetings and 19 educational sessions occurred. Functional Discovery was forecasted to be $609,210 with the initial closeout of the project indicating a final amount of $556,876, or 8.6% below budget.

Functional Discovery Deliverables*

Deliverable	Description
Business Process Impact Analysis Document (Word)	The purpose of this document is to present the results of the Functional Discovery in a coherent, organized fashion to accurately communicate the implications on future business processes, the overall CS 9.2 upgrade project scope, and positioning for a future cloud transition. The document is organized by module and presents objective metrics along with key findings that prepare UW-Madison for the CS 9.2 upgrade. The document break downs, by module, the decisions made, key findings and opportunities, along with overall upgrade implications and effort (by hours).
Business Process & Modification Tracker (BPMT) and Modification Review Recommendations File (Excel) Screenshots (PDF)	The Functional Discovery team created a Business Process & Modification Tracker (BPMT) within the project's CS 9.2 Demo environment. The BPMT allowed for centralized analysis and provided query capability. The BPMT tool and related information housed within the application is scheduled to be delivered to UW-Madison as a separate deliverable to be moved into UW-Madison's CS 9.0 DEV environment.
Self-Service Scope Documents Admissions – Classic (Word) Admissions – Fluid (Word) Campus Community – Classic (Word) Campus Community – Fluid (Word) Financial Aid – Classic (Word) Financial Aid – Fluid (Word) Student Financials – Classic (Word) Student Financials – Fluid (Word) Student Records – Classic (Word) Student Records – Fluid (Word)	These documents summarize the discussions Deloitte had with UW-Madison staff around the use of new self-service pages available in Fluid CS 9.2 along with any decision/recommendations for their use going forward with the CS 9.2 upgrade. This also included recommendations for retaining certain pages in the Classic view. Each subsection contains a screenshot of the Fluid page along with a description, decision made, and any implications for configuration, as well as functional and technical efforts for implementation. There is an appendix at the end of the document that contains the original notes from the discussion sessions.
Integration Impact Analysis Document (Word)	This document summarizes the evaluation of potential integration impacts of the CS 9.2 upgrade. An assessment of data exchanges to and from other systems was conducted including file exchanges with federal and state government entities, web service communications with external partners and campus systems, and various systems that integrate with SIS using direct connections to the SIS Oracle database.
SIS Integration Context Diagram Diagram (PDF)	This diagram provides a high-level visual of the integration points of SIS.
CS 9.2 Upgrade Instances Diagram Diagram (PDF)	This diagram provides a visual of the recommended instances required for the CS 9.2 upgrade.
Project Plan File (MS Project) File (Excel) File (PDF)	This is a baseline project plan for the CS 9.2 upgrade with initial breakouts for resourcing and hour estimates. The objective of this plan is to provide a phase breakout and underlying tasks over the project duration.
Requirements Traceability Matrix File (Excel)	The document identifies the CS 9.2 upgrade requirements and provides a centralized spot to track if all requirements defined for the system are tested using test protocols.
Education Materials Non-Self-Service (Website) Self-Service (Website)	Education sessions were conducted before the modification review across all modules to highlight unused/underutilized functionality for CS 9.2 (and earlier versions). Education was either in-person or remote and included online demonstrations using the CS 9.2 Demo environment. Documentation was also created to provide overviews of features/benefits of functionality. Sessions were recorded and archived with associated documentation.

*Some documents are in draft form since Functional Discovery concluded on February 2, 2018. No substantive changes are expected.

Key Functional Discovery Findings

Modification Decisions

Pie chart legend:
- No Change, Keep Modification
- Remove Mod, Not Needed
- Partial Removal
- Replace with Delivered
- New Business Process, No Mod
- New Modification
- Enhance Existing Modification

Labels:
- Enhance Existing Modification, 19, 3%
- New Business Process, No Mod, 6, 1%
- Replace with Delivered, 87, 14%
- Partial Removal, 29, 5%
- No Change, Keep Modification, 314, 50%
- Remove Mod, Not Needed, 171, 27%

'Optimization' Rate by Functional Unit

Functional Unit	Optimized Modifications	Total Modifications	Optimization
SIS Security	7	21	-33% Optimization
Student Records	119	236	-50% Optimization
Student Financials	70	138	-51% Optimization
Financial Aid	71	114	-61% Optimization
Admissions	45	118	-38% Optimization

Risk Profile: Modification Count

Legend: BPRC, DELV, ENHC, KEEP, PART, REMV

Categories: 1 - Negligible, 2 - Minor, 3 - Moderate, 4 - Significant, 5 - Severe

Examples of Optimization

9.2 Fluid Student Center: Provide students with a mobile-friendly interface to manage applications, student records, financial aid, billing and demographic information. Not only does this greatly improve the user-experience, it allows for several modifications to be removed from the highly-customized CS 9.0 Student Center.

XML Transcripts: The current transcript is built on outdated COBOL language. The delivered XML format is highly flexible and allows for easier editing of transcript layout and configurable transcript data. Utilizing XML may address a major concern from DoIT about providing COBOL support and associated licensing costs.

Third-Party Billing: The Bursar's Office will utilize delivered third-party billing and eliminate manual effort to generate bills.

Repacking Financial Aid: Delivered functionality will be utilized to reduce manual effort to update student awards that cannot be accomplished with the current programmatic setup.

Page and Field Configurator: Delivered functionality now allows for pages/fields to be configured to hide/restrict from certain users. This new feature enables numerous modifications to be removed that were previously required.
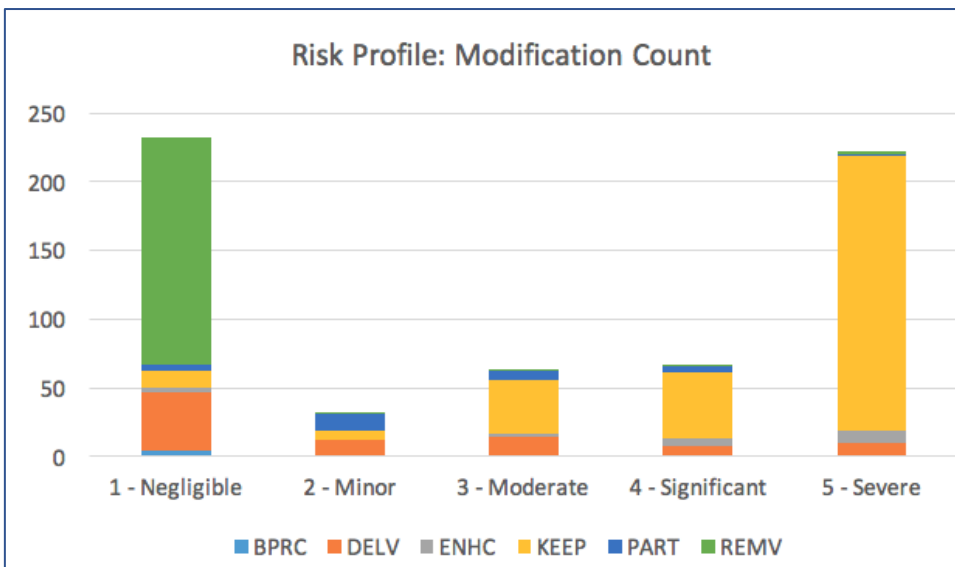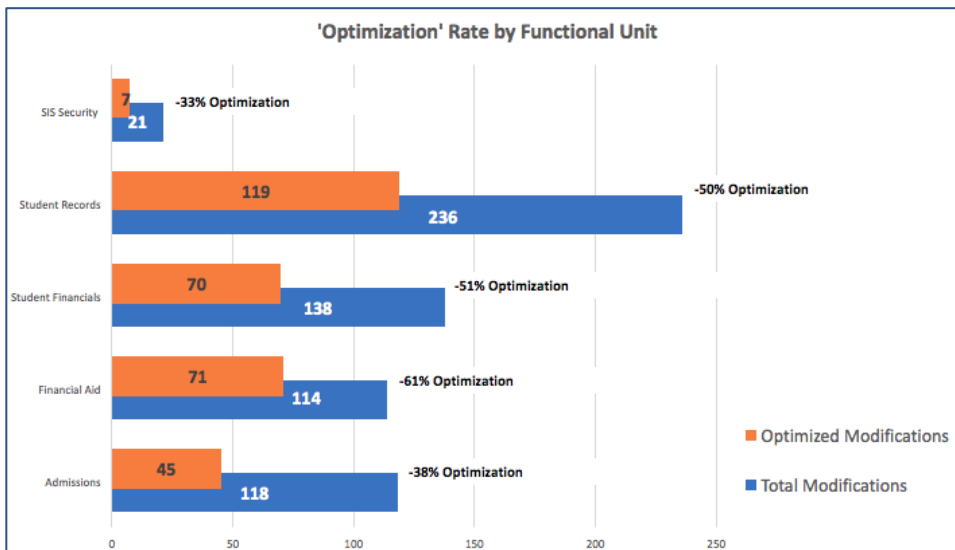
Project Plan

Process owners recommend the 'cut-over' (i.e. go-live) date of July 2019 to switch to CS 9.2 in order to have the least disruption on business processes. This results with a project kick-off in June 2018.

	2018						2019							
	CS 9.2 PUM Image 10			CS 9.2 PUM Image 11			CS 9.2 PUM Image 12			CS 9.2 PUM Image 13			CS 9.2 PUM Image 14	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Install	Initial	Test Move 1 - Cycle					Test Move 2 Cycle				Test Move 3 Cycle		Cut over	Support

The initial CS 9.0 development freeze starts March 2019 (see red line above), however, the project may consider a January 2019 freeze to ensure system stability and protect staff resources as CS 9.2 is implemented. Any campus initiatives that require technical work, such as ancillary systems or integrations to SIS, will need to occur prior to the development freeze or after the go-live date.

In order to assign scarce UW-Madison resources on initiatives unique to the institution, it is recommended that consultants complete nearly all technical tasks and a UW-Madison/consultant split of 65%/35% for functional support, primarily related to testing. The Business Process Impact Analysis report provides an hourly breakdown for project management, analysis support, functional and technical services to upgrade to CS 9.2 and incorporate recommendations.

Aligning with IT governance and the IT Project and Prioritization Process, the CS 9.2 upgrade project was approved in January 2018 by the IT Steering Committee.

Project Hosting

UW-Madison's current SIS infrastructure is not ideal for such a comprehensive and complex institution. The upgrade project recommends 10 project instances to successfully develop, test and move the upgrade throughout the process. However, UW-Madison's current environment is solely a 'path to production' and only has 3 instances (DEV, TST, PROD). There is concern regarding the service level, scalability during peak loads and administration of those instances. There is high agreement that, for an institution like UW-Madison, the current infrastructure environment is inadequate.

Both for the project and post-CS 9.2 upgrade requirements, UW-Madison needs a variety of instances that promote flexibility in architecture and performance to foster innovation and meet performance expectations of stakeholders. Furthermore, the lack of such R&D spaces is one of the reasons UW-Madison has created local, often college- or division-level "bolt-ons" to SIS over time. Offsite hosting follows modern, industry best practices and allows for expandable, dynamic resources that don't exist on-campus, including equipment and staff. Non-Production SIS instances could be hosted offsite (domestically) with PII being anonymized. The initial setup of these instances could occur fairly quickly to meet the project timeline and will not greatly tax UW-Madison's resources that are allocated for the current 'path to production' infrastructure. Initial estimates indicate offsite hosting is roughly the same as onsite hosting in cost.

If the CS 9.2 upgrade utilized offsite hosting, it would be considered a pilot to explore how to improve long-term infrastructure for UW-Madison. Any setup and migration work required for the project would be transferable for long-term usage and would be considered a one-time cost. This would not put the current 'path to production' at risk since this is considered a value-add project requirement, not a replacement of the CS 9.0 infrastructure.

Initial Risks and Mitigation Strategy

There are five major risks initially identified with this upgrade – all related to funding, testing and communication/change management.

Risk	Mitigation Strategy
Data integrity issues related to student information stored and calculated within SIS if CS 9.2 upgrade isn't successful.	• (Mitigate) Ask for resources to contract with proven consultants to assist with reestablishment and validation of integration points. • (Mitigate) Invite integration partners (e.g. InfoAccess) to be part of the functional and technical testing. Incorporate integration partners into the communication and change management plan. • (Mitigate) Ensure proper testing occurs, including integration points that send/receive SIS data. • (Mitigate) Leverage a Requirements Traceability Matrix to validate all specifications of the CS 9.2 upgrade are followed.
Loss of system functionality that would prevent the institution from providing essential core functions if CS 9.2 upgrade isn't successful.	• (Mitigate) Ask for resources to contract with proven consultants to assist the CS 9.2 upgrade. • (Mitigate) Ensure proper testing occurs, including functional testing of processes with and without modifications. • (Mitigate) Leverage a Requirements Traceability Matrix to validate all specifications of the CS 9.2 upgrade are followed.
CS 9.0 will become out-of-support resulting in outdated regulatory/compliance updates and may lead to increased stability concerns if CS 9.2 upgrade isn't successful in 2019 (end of product support).	• (Mitigate) Ask for resources to contract with proven consultants to assist the CS 9.2 upgrade. • (Mitigate) UW-Madison project manager will manage the master timeline, in partnership with consultant project manager, and notify Executive Sponsors if a critical path is at risk of causing delays. • (Accept) UW-Madison will accept the risk and, if needed, prioritize internal resources to perform required actions to ensure the institution is compliant and has a stable CS 9.0 environment.
Uncertain ability to provide resources across DEM/Bursar and DoIT to support the CS 9.2 upgrade, as well as delayed non-SIS campus initiatives, if funding is not available for a consultant upgrade partner.	• (Mitigate) Ask for resources to contract with proven consultants to assist the CS 9.2 upgrade. • (Accept) UW-Madison will accept the risk and delay DEM/Bursar/DoIT initiatives to focus needed resources on the CS 9.2 upgrade. Initiatives at risk of delay could include Salesforce CRM, accreditation support, UAPC/APIR projects such as academic structure changes, Enroll App enhancements, etc. • (Accept) UW-Madison will accept the risk and may need to reduce the scope of change of the CS 9.2 upgrade. 'Optimization' recommendations may not be able to be implemented.
Upgrade partner cannot access SIS systems and/or hosting instances are not properly configured due to DoIT Security not meeting CS 9.2 upgrade requirements.	• (Mitigate) Develop a security requirements document that highlights tasks that need to be configured/confirmed prior to the project start. • (Mitigate) Collaborate early with DoIT Security to ensure they are familiar the CS 9.2 upgrade requirements. • (Mitigate) Leverage offsite, consultant-led hosting with administration and technical support due to their known availability.

Planning Priorities before CS 9.2 Upgrade

There are seven main planning activities that need to occur during February to May 2018 prior to the CS 9.2 upgrade.

1. Secure funding and determine necessary approvals (i.e. Board of Regents, Governor)
2. Determine upgrade hosting and establish CS 9.2 upgrade instances
3. Determine and communicate UW-Madison staff resource expectations
4. Determine communication and change management plan
5. Determine the CS 9.2 testing framework
6. Determine CS 9.2 upgrade security requirements and collaborate with DoIT security
7. Establish baseline SIS cost to compare post-CS 9.2 upgrade to determine any changes

Campus Investment for CS 9.2 Upgrade

SIS OP is seeking campus support to successfully upgrade to CS 9.2 and implement recommended changes as a result of the Functional Discovery. This support is considered a one-time cost and no incremental costs are expected to be requested. Reference the CS 9.2 Upgrade Estimate document for a monthly breakdown.

Funding Request for Upgrade Partner including Travel (75% onsite)
- FY19: $2,294,358 (June 2018–May 2019, assuming one-month delay in billing)
- FY20: $374,198 (June 2019–August 2019, assuming one-month delay in billing)
- **Total: $2,668,556**
  - Low: 10% below estimate
    - -$266,856($2,401,700)
  - High: 25% above estimate
    - +$667,139 ($3,335,695)

Funding for Project Offsite Hosting with Upgrade Partner
- FY19: $736,000 (June 2018–May 2019, assuming one-month delay in billing)
  - Migration: $300,000
  - Hosting/Support: $436,000
- FY20: $120,000 (June 2019–August 2019, assuming one-month delay in billing)
  - Migration: $0
  - Hosting/Support: $120,000
- **Total: $856,000** (Note: DoIT initial estimate for this is $869,157)

Grand Total
- FY19: $3,030,358
  - Upgrade Partner w/Travel: $2,668,556
  - Migration/Hosting/Support: $736,000
- FY20: $494,198
  - Upgrade Partner w/Travel: $374,198
  - Migration/Hosting/Support: $120,000
- **Total: $3,524,556**

SIS OP also wants to acknowledge that DEM/Bursar and other campus stakeholders will contribute in-kind resources. The upgrade expects UW-Madison to allocate over 8,441 hours of project management, functional and technical support to assist with the upgrade. No reimbursement request is expected.

Selecting Upgrade Partner

SIS OP seeks guidance in directly selecting an upgrade partner. There is considerable benefit to continuing the partnership with consultants from the Functional Discovery project for the following reasons:

- **Deep understanding of the 'current state' of UW-Madison SIS.**
  - Any new consultants would require several weeks to get a baseline understanding of how UW-Madison is utilizing CS 9.0. This applies both functionally, but also technically since Functional Discovery technical consultants explored integrations and had access to App Designer.
- **Upgrade estimates and project plans were developed by the Functional Discovery consultants.**
  - Hour estimates and timing may vary if different consultants are utilized. This would produce uncertainty in the funding requirements, and potentially cause the project to miss the July 2019 go-live target.
  - Additional hours would be required to gain understanding of the 'current state' if the Functional Discovery consultants were not utilized.
- **SIS OP was satisfied with all Functional Discovery consultants.**
  - Based on monthly satisfaction surveys conducted with SIS OP project team members – UW-Madison Functional Discovery participants were satisfied with each module's functional consultants in the areas of:
    - General Preparedness
    - Knowledge of Campus Solutions 9.2
    - Ability to Lead Conversations about Reducing Modifications
    - Ability to Lead Conversations about Increasing Delivered Functionality
    - Potential 9.2 Upgrade Consultant
    - Overall Experience with Consultant

SIS OP would draft a Statement of Work using the existing UW-Madison 15-5282 contract (Functional and Technical Consulting Services to Support the University's Oracle PeopleSoft Products).