GSB Project Process

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Context

Graduate School of Business

Digital Solutions

Experience, Insights, Content and Architecture

Architecture

Adam and Max

Digital Solutions Project Process

Phase / Requirements	Project Status: Exploration		Queued		Planned	Active		*Product*
	Pre-Concept	Concept	High Level Design	Pitch	Resource Allocation Period	Delivery: Detailed Design & Planning	Delivery: Development	Production Support
Problem/Opportunity	+	+	+	+	Time To Crystallize and Free Resources	+	Development, Test and Go-live	Maintenance and Continuous Improvement
Benefits/Impact	+	+	+	+		+		
Architect Partner Consult	+	+	+	+		+		
As-is Process/To-Be Requirements (Dependencies, Assumptions)		+	+	+		+		
To-Be Process			+	+		+		
Solution Option Analysis			+	+		+		
Solution Recommendation (Data/Systems Integration Analysis)			+	+		+		
Sizing and Plan (Skills and Schedule Expectations)				+		+		
Architecture Council Review			Required			Optional		
Pitch Review	Optional	Optional	Optional	**Required**				
			Design Change					
			Resource Change					
Adverse Event Prevention and Response (AEPR) Review						**Required**	**Required**	
PMO Reporting	Required for Large Projects					**Required**	**Required**	
Lessons Learned Review								**Required**

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Levels

- Effort
  - Very Low: < 2 person months
  - Low: 2 person months - 6 person months
  - Medium: 6 person months - 18 person months
  - Large: > 18 person months
- Cost (excluding DS resource cost)
  - Very Low: < $25k
  - Low: $25k - $75k
  - Medium: $75k - $225k
  - Large: > $225k

Prioritization

- Talk to your Director
  - Effort AND Cost is Very Low
- Digital Solutions Prioritization (CDO and Directors)
  - Effort OR Cost is Low, but not higher than that
- GSB Prioritization (Senior Associate Deans)
  - Effort OR Cost is Medium or higher

Architecture Council Charter

1. Identify how projects fit into the overall architecture (biz, data, app, tech)
2. Connecting the dots between multiple projects
3. Connecting the dots between projects to other teams
4. Rationalizing Applications/Tools
5. Ensuring project alignment with DS strategic objectives
6. Providing guidance to projects from pre-concept to pitch

Representatives

Architecture, Business Analysis, Digital Insights, Engineering, Operations and Teaching & Learning

GSB Classroom Management Apps

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Transformational Initiative (TI)

PL

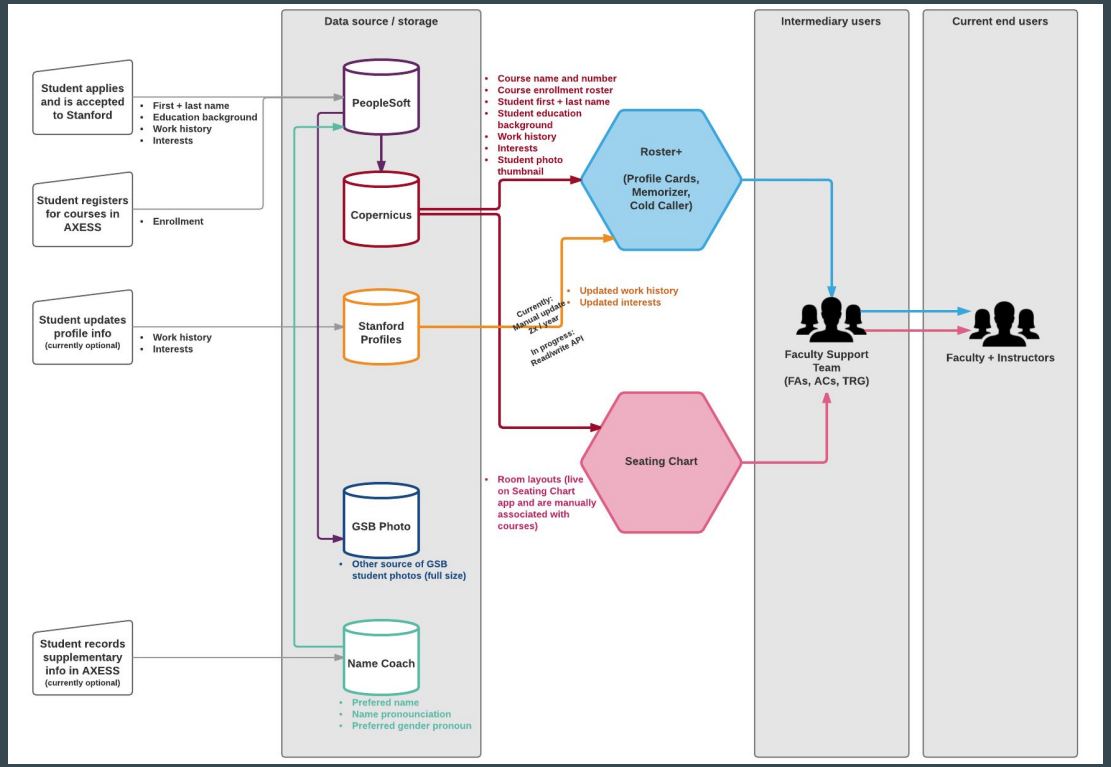
Pre-concept - The Problem

Currently, GSB supports several applications that enable its faculty and instructors to engage in classroom management activities like learning student names and calling on students during class. These applications, Seating Chart and Roster+ (which includes Cold Caller, Memorizer, and Profile Cards), are built on Flex/Flash technology that is going out of date and now require plug-ins to render and display. In addition to this supportability risk, the applications don't meet all of the current user needs and rely on manual imports for some of their data.

Pre-concept - Background Information/History

Seating Chart and Roster+ are custom-built classroom management applications. The GSB Faculty Support Team reports that it has become a standard practice to provide a seating chart and printed flashcards with student names, pictures, and profile info to every faculty member and lecturer, for each class they teach. (Instructors also access other functions online).

These tools rely on data from a variety of sources, including PeopleSoft, Copernicus, GSB Photo, and Stanford Profiles. See full size data map here.



Pre-concept - Benefits

Contribute to classroom environments that are conducive to student success and learning, by providing instructors the means to:

- learn/memorize student names
- learn/memorize student background information
- view and call on students by name from a classroom seating chart
- track student attendance and in-class participation
- make cold calls

Pre-concept - What if We Don't?

- Faculty, Faculty Assistants (FAs), and Administrative Coordinators (ACs) will continue to use the current applications, which are built on Flex/Flash and require the installation of the Flash browser plug-in to display and operate. With browsers like Chrome, Firefox, and Safari planning to end support for Flash, events out of GSB's control could render some of these unusable.

- We will also miss the opportunity to expand usage of technologies that support efficient and effective classroom management strategies to new users.

Pre-concept - Origin and Impacted Personas

Originating Requestor

- Digital Solutions

Other Impacted Personas

- Current Seating Chart and Roster+ users:
  - GSB Faculty and Instructors
  - Faculty Support: Faculty Assistants, Administrative Coordinators, and the Technical Resource Group
- Students
- MBA Program
- Digital Solutions staff supporting Seating Chart and Roster+ (Phong, Joy, Lisa)

Pre-concept - AC Recommendations

Date of the AC review - 12/14/2016

What are the next steps needed to complete the pre-concept phase?

- Clarify goals around replacing for current users vs. expanding use.
- Establish consistent nomenclature for the various apps.
- Establish name for the project that clarifies which apps are part of the project and their use.
- Set the Feedback App aside for now (Feedback is a student-facing app and is built on a different platform that the others; Risk not doing it justice to lump it together with the other).

Concept - As-is Process

Seating Chart:

- Students enroll in GSB courses in AXESS.
- Admin. Coordinator looks up course classroom assignments and generates blank seating chart for each.
- Admin. Coordinator prints blank seating chart on 11x17 paper and gives to each instructor before first day of class.
- Instructor passes blank, printed seating chart around the classroom on the first day/week of class and students fill in their name where they are sitting (that will be their assigned seat for the course).
- Instructor returns filled out seating chart to Admin. Coordinator.
- Admin. Coordinator uses Seating Chart to populate blank, digital seating chart with student names and pictures.
    - When a student's handwriting is illegible or when they write their preferred name instead of First-Last, Admin. Coordinator must use process of elimination to determine who is sitting where.
    - Admin. Coordinator must add chair(s) to digital seating charts if classroom configuration has been modified. The process for adding chairs is a pain point in the current system.
    - Admin. Coordinator must search for and manually add students who are not yet officially enrolled in the course.
- Admin. Coordinator prints multiple copies of each completed seating chart and gives to instructors.
- Instructors use completed seating charts to take attendance and track participation during class (using 'tally marks'), and/or call on students by name during class.
    - In classrooms with a large number of seats, the seating chart can be hard for instructors to view/read at a glance.
- Instructor returns marked Seating Chart to Admin. Coordinator/Faculty Asst. to enter into a spreadsheet for grading purposes.

Concept - As-is Process

Roster+:

- Students enroll in GSB courses in AXESS.
- Admin. Coordinator generates profile cards (flashcards with student name, picture, and profile information) for each GSB course.
- Admin. Coordinator prints each card set, cuts the paper in half (there are two 2-sided cards per 8x11 page), and gives to each instructor before first day of class.
    - Profile cards are sometimes mailed to lecturers/instructors who are traveling.
- Instructors study the printed profile cards to learn their students' names and about their backgrounds. Instructors also login to Roster+ to use Memorizer to study student profile cards in digital flashcard format. They may plan certain comments or connections in their lecture to their students' backgrounds.
- Faculty Support generates printed lists of enrolled students to check them in and out of exams.
- Students may update their profile information, including work history and interests, in Stanford Profiles. 2 times per year, Phong manually sends this information to Roster+.
    - If students do not update their profile information in Stanford Profiles, these fields of the Profile Cards will be blank. Lately, instructors are confused and/or complain about having less student background information than previously.
- Instructors use Cold Caller to randomly draw enrolled student names during class. They can configure the randomization algorithm according to their needs. The names of students who were cold called are saved for later grading purposes.

Concept - Requirements

Functional and non-functional requirements are documented in the AC template here: “GSB Classroom Management Apps - AC Requirements Review”

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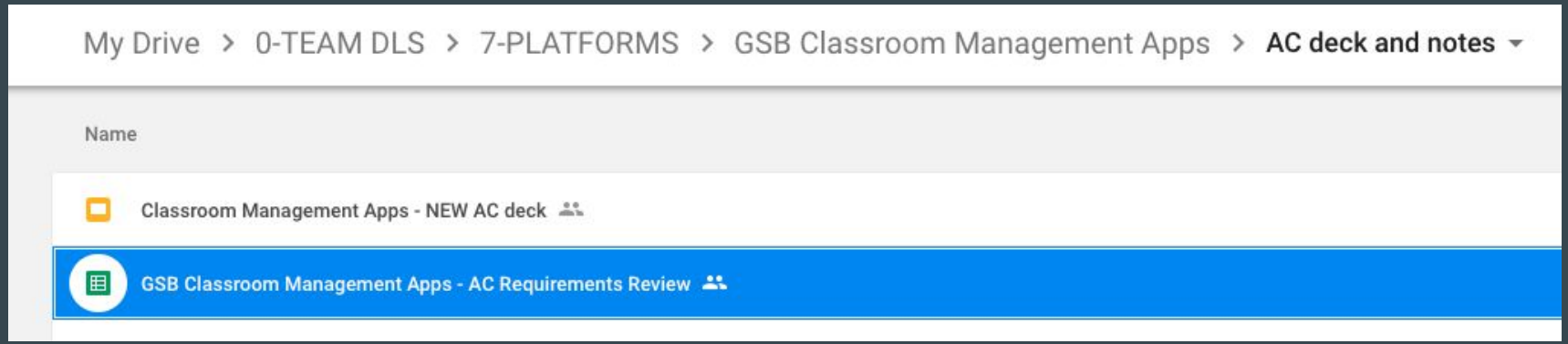

Concept - Dependencies

- The Operational Data Store ODS project will be approved and able to be implemented on time.
    - Mitigation: We will design the data integration in such a way that it remains agnostic to the data source and portable between Copernicus and the to-be ODS. If the ODS schedule looks to be running later than what this project needs, we'll port the integration to Copernicus with minimal additional effort (since the schemas are expected to be very similar).
- The Faculty Support Team will be available to be engaged in this project.
- The MBA Program will be available to be engaged in this project.
- GSB students will manually provide certain profile information (e.g. interests, up-to-date work experience) that cannot be pulled from other sources. And, we can coordinate with MBA Program around student outreach/communication to ensure high levels of student compliance in filling out this profile information.
- Stanford Profiles Read/Write API will be completed by Stanford CAP team.

Concept - AC Recommendations

Date of the AC review - 01/11/2017

What are the next steps needed to complete the concept phase?

Date of the AC review - 3/23/2017

What are the next steps needed to complete the concept phase?

- Conduct meetings with DS staff to size the effort on the data integration.
- Communicate with vendor regarding the cost of licensing and development, and regarding the non-functional requirements.

High Level Design - Solution Options Considered

Solution options considered are documented in the AC template here: "GSB Classroom Management Apps - AC Requirements Review"

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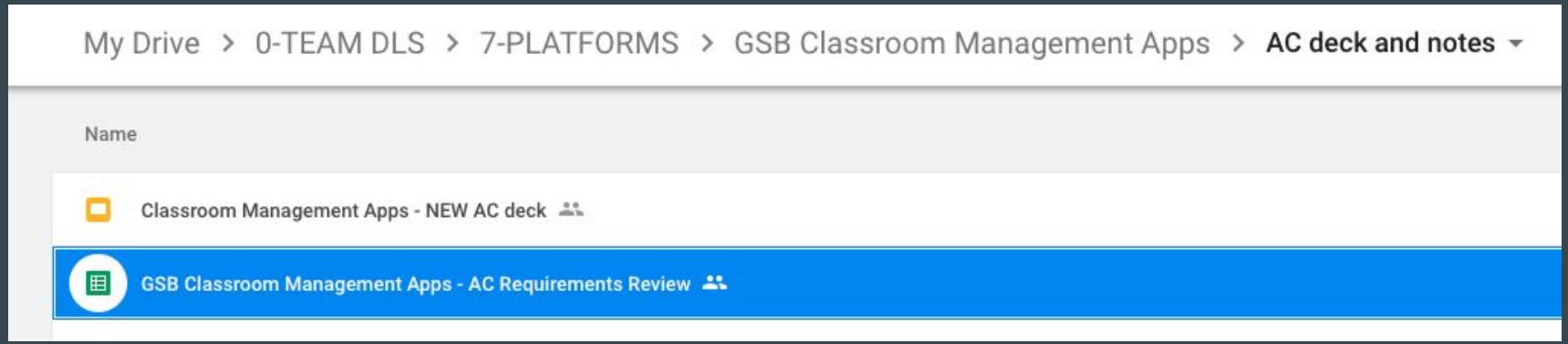


High Level Design - Recommended Platform

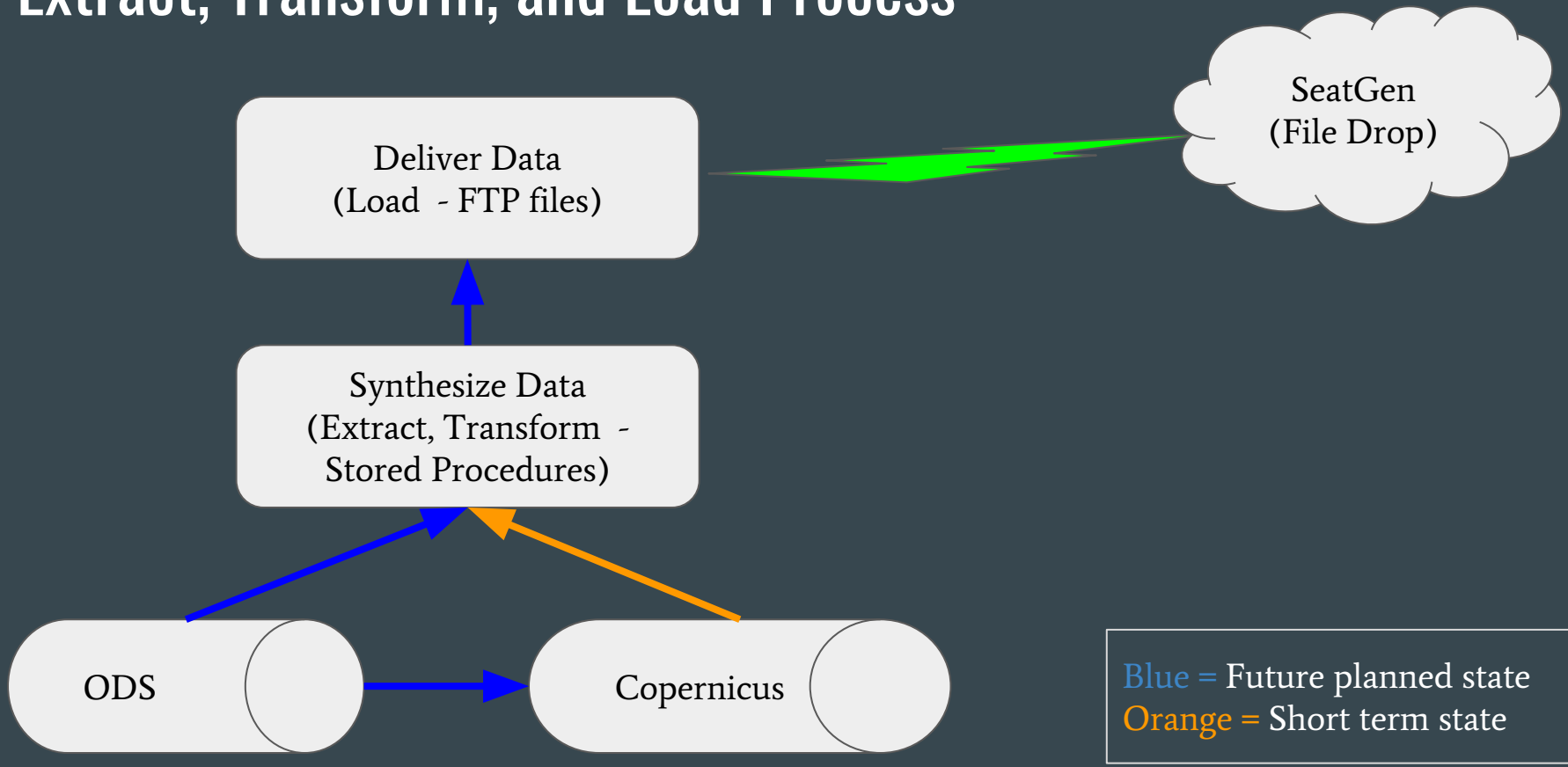
SeatGen by Appointlink

- Most closely matches Seating Chart and Roster+ feature set (see functional requirements document here).
    - Two “must have” feature gaps would need to be developed: *customize existing layout* (allows end users to delete, move, or add seats in a pre-built seating chart), and *create ‘blank’ students* (allows users to drop a blank photo onto a seating chart and course roster, and then add a first/last name on-the-fly).
- Positive response to software demo by Faculty Support Team, who would be some of the platform’s primary users.
- Uses a modern cloud architecture with a good track record in supporting clients.

High Level Design - Data Integration Method *(recommended approach)*

Method	*Operational Data Store:* SQL script that is upstream of Copernicus and sends data to SeatGen
Rationale	▪Not dependent on Copernicus or a .NET program. ▪We have more people who can help with support. ▪Approach may be a more natural fit for DS since the data integration team would be responsible (rather than responsibility being dispersed).
Risks	▪Timeline and 'unknowns:' The ODS database schema and upstream/downstream syncs are still being developed and tested.
Level of Effort	60 p.hrs. for discovery (Data Insights) 40 p.hrs. to write SQL scripts (Data Insights) 20 p.hrs. hours for QA/testing of SQL scripts (Data Insights)

Extract, Transform, and Load Process



High Level Design - Data Integration Method *(other options considered and ruled out)*

Method	***.NET Program*** **that accesses Copernicus and streams data to SeatGen on a schedule (and by manual request, as needed).**	***API*****:** Leverage/combine with Data API project work, to create an API could be used for SeatGen.
Pros and cons	▪Existing and reliable proof of concept: this is the approach we use for Canvas. ▪Leverage existing knowledge and resources: Chris has written a .NET program for Canvas that could be used as a model. ▪Dependent on Copernicus: likely will need to update integration in future. ▪Fewer number of DS staff can support the data integration.	▪Data syncing for the Classroom Management Apps doesn't need to be fully in real-time (up to the minute), since it is primarily used at defined times in the quarter. Accordingly, our use case does not necessarily justify use of API. ▪Timeline: The Data API group is currently assessing whether the technology they chose is correct and/or may choose a new solution. Accordingly, we don't recommend this approach because of the flux that the API is in.

High Level Design - Support Plan

- SeatGen maintains a help desk using Fresh Desk. They support the product 24/7, and provide general support for platform administrators and developers/technical staff during normal business hours. SeatGen staffs for additional support at the start of the semester to make sure we are responsive during these times.
- SeatGen creates new classroom layouts, as needed by request. (Turnaround time: __?)
- DLS and TRG will be assigned Administrative roles on the platform and respond to instructor and/or staff platform-related needs and help tickets.
    - Administrators have the ability to: set system settings, enable self seating, remove charts, and manage course and faculty assistants.
    - SeatGen contract includes 2-3 hours of staff training, as well as support videos and documentation.
    - DLS/TRG provides instructor consultations and training on platform.
- Data Insights provides database integration support and maintenance.
    - Data integration effort will include audit process development as well as an alerting plan.

High Level Design - Integration Touchpoints

- Operational Data Store (ODS)
  - Course name and number
  - Course enrollment roster
  - Student first and last name
  - Student education
  - Student work history
  - Student interests
  - Student name pronunciation

- GSB Photo
  - Student photo

- Stanford Profiles, via Operational Data Store (ODS)
  - Updated student work history
  - Updated student interests

High Level Design - AC Recommendation

Date of AC review - 4/14/2017

What are the next steps to complete the HLD phase?

- Include critical dependency on ODS plan
- Clarify p.hours for ODS (estimation should only reflect the synchronization creation, testing, and QA)
- Plan B if ODS doesn't happen

What are the Key Architectural Aspects (for AC to record in ADRs)

- Data synchronization

Post-launch support and maintenance needs

What do we need?

- Post-launch support and maintenance
  - ~8 p.hrs. for data clean up of GSB Seating Chart and Roster+ application-specific tables/fields in Copernicus
  - ~16 p.hrs. for DLS to develop and vet documentation and outreach for current and new users
  - ~4 p.hrs./quarter for DLS to provide platform training and consultation to GSB FAs, ACs, and faculty.
  - Regular monitoring of data integration and sync, especially during high usage periods (beginning of the quarter).
  - Regular communication by DLS to GSB users about platform updates.
  - Regular maintenance of databases by Data Insights, including 2x yearly As-Is Processes for handling student matriculation and graduation.

Lessons Learned/Retrospective

Date of meeting - MM/DD/YYYY

Use this slide to capture lessons learned. This happens after the delivery phase is complete.

9/20/2017

due date: 9/1/2017

Project Details:

TI: GSB Classroom Management Apps

H/M/L	Risk	Mitigation
Med	Data import error reporting is not yet automated by Appointlink.	Re-communicated the importance of accurate and timely error reporting. Currently there are some gaps in our ability to monitor the data integration and to recover from errors.

Progress Made	Upcoming
Addressed “workgroup” issues and adjusted code in order to capture GSB ‘Research Fellows’ (fringe case that previously was not captured through workgroups).	NameCoach integration.
Presented seatGEN at MSx Staff Meeting -- they were very excited to have this resource!	Gather feedback from Faculty and FST users over Fall Quarter (meeting scheduled for 10/9).
Data sources and schema in progress. (Will be used in M&A plan).	Have not yet received NameCoach tokens from MBA Program.
Troubleshooting report configuration errors with Appointlink.	

Done	PMO Action Items

Discussion

END

Digital Solutions Project Process

	Project Status							
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Architect Partner Consult	+	+	+	+		+		
As-is Process/To-Be Requirements (Dependencies, Assumptions)		+	+	+		+		
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Solution Option Analysis			+	+		+		
Solution Recommendation (Data/Systems Integration Analysis)			+	+		+		
Sizing and Plan (Skills and Schedule Expectations)				+		+		
Architecture Council Review			Required			Optional		
Pitch Review	Optional	Optional	Optional	**Required**				
			← Design Change					
			← Resource Change					
Adverse Event Prevention and Response (AEPR) Review						**Required**	**Required**	
PMO Reporting						**Required**	**Required**	
Lessons Learned Review								**Required**

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