Agile Project Management at Penn

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How we got there

- Grew organically over the last 4 years through trial and error

Goals

- Create a project management structure that:
  - Keeps overhead to a minimum
  - Allows for maximum flexibility and nimbleness
  - Gives us a sense that things are under control
    - Deadlines met, software development not seen as the bottleneck, ability to complete each project more quickly, and handle more projects concurrently and efficiently
How we got there (2)

- Took quite some inspiration from the agile/scrum approach
  - Agile Manifesto
  - Formal agile/scrum training about a year ago
    - With Kristine Shannon
  - Not trying to be systematic about following scrum
    - No claim at all that we are a Scrum shop
  - We don’t use most of the jargon! ;-)
Note

- To give the context of our approach
  - Describe a bit our software system and our team set up
Key concepts in our project management approach

- Software development = series of distinct functionality pieces (Scrum: “user stories”)
- Transparence
  - Everybody in the organization can see exactly what we are doing and where we are in our development
- Clear and reliable milestones
  - (Internal) customers trust that we will meet our milestones
- Go into production only once a month
  - Move new code from development server to production server
  - Creates a regular rhythm around which our work is organized (Scrum: “sprints”)
PM approach went hand in hand with the development of a “generalized” software system

- A single system that handles all our delivery needs
  - Collections of images, book facsimiles, EAD finding aids, “netflix-style” video catalog, staff directory, and much more…
- Based on Solr/Lucene
- With generalized ingestion tools and generalized web delivery
  - Both customizable through configuration files
Software system: the DLA (2)

- Some new projects require 0 core development
  - E.g., a new image collection, when we have already the features needed to handle image collections
  - Just a matter of ingesting the collection and configuring it
    - XSLT/CSS-based customization
    - + Cataloging / metadata clean up / scanning / QA, etc.
Some new projects require some new pieces of functionality

- E.g., a collection of Arabic book facsimiles requires us to add the functionality “right-to-left page browsing”
Consequences on project management

- Clear distinction between “ingestion of a new collection” and “software development”
- Ingestion is done by “DLA Ingesters”
  - They do not need to be expert programmers (mostly XML and XSLT)
Consequences on project management (2)

- Software development
  - Done by Core Programmer(s)
  - Seen as a list of functionality pieces
    - Independent from each other
    - Small to medium in size
  - Advantages
    - Easier to establish priorities
    - Easier to control the timeline
      - Come up with clear milestones
    - Quicker results
      - Each time a piece is ready, it can go live, without waiting for a big release at the end of several months
Team structure

- 1 DLA Software Team
  - Develops the DLA software (all new DLA functionality pieces)

- Composed of:
  - 1 Team Lead / Project Manager
  - Core Programmer(s): 0.5 to 1 FTE
Staff structure (2)

- 4 DLA Content Teams
  - Ingest new collections into the DLA system
  - Each team focuses on one format
    - Images, Book Facsimiles, OPAC Subsets, Non-Marc (EAD, OAI, etc.)
  - Core members on each team
    - 1 DLA Ingester, 1 Cataloger/Metadata Librarian, 1 Public Services Librarian, Web Designer
  - Note: not a cast of thousands
    - E.g., I am the Team Lead for DLA Software Team and a DLA Ingester
Staff structure (3)

- Guest members on each DLA Content Team
  - Onboard only for the duration of one project
    - Collection-specific experts
      - Curators, bibliographers, catalogers, HR person, etc.
    - One of them is always the “project owner”
      - Provides ongoing advocacy for the project (even after the project is completed), takes care of it, notices problems in the long term, etc. (+/- Scrum: “Product Owner”)

- Advantage of having core members
  - Develop very strong DLA expertise
Heavy use of Google Docs spreadsheets

- Especially to manage each team’s to-do list (Scrum: “backlog”)
- Very low overhead to enter a new to-do item
- Can easily sort list based on various criteria
- Edit the spreadsheet during the meeting
  - By the end of the meeting your to-do list is essentially up to date
- Each to-do item is assigned complexity points and priority points (another Scrum thing)
  - Helps prioritization effort
Heavy use of Google Docs spreadsheets (2)

- Every to-do list is viewable by all staff
  - Total transparency
- Helps communicate on “what keeps you busy all day” question
- Helps working out prioritization issues across the organization
  - People can see where their desired functionality stands, and which other functionalities have higher priority
  - Really helps them understand “why” we are not working on their functionality right now
  - DLA Oversight Group can easily see our priorities and decide to reorganize them if needed
How many spreadsheets?

- 1 spreadsheet for the DLA Software Team
- 1 spreadsheet per collection
  - A DLA Content Team works on one or two collections at a time
Grooming the to-do list

- Very important
  - (Another Scrum concept)
- Done by the Team Lead
  - (Scrum: “Scrum Master”)
- Keep updating the to-do list
  - Make sure it gives an exact picture of the current reality (no tasks missing, etc.)
Grooming the to-do list (2)

- Look down the list to prepare the tasks
  - Identify road blocks (Scrum: “impediments”)
  - Remove them by talking to the relevant people
    - E.g., Sys Admin for new storage
DLA Software Team’s to-do list

- During meetings: mostly look at the to-do list and update it live
- Work only on the first 4 or 5 to-do items at the top of the list
  - Clearly marked as “active”
  - All the other to-do items are officially inactive
    - Waiting in line for their turn
  - Loose adaptation of Scrum’s “Sprint backlog”
- Forces clear prioritization
  - Can’t vaguely claim that you are working on “everything”
Milestones

- For every functionality piece that someone is actively “waiting for”
- Fake meeting in Meeting Maker (our web-based calendaring application)
- Works amazingly well because the milestones are right under people’s nose all day
  - Programmer cannot “forget” about it, and sees it coming
  - “Customer” is reassured, and does not ask you about their new functionality every 2 days
Milestones (2)

- “Move to production” milestones
  - Once a month at a predictable time (end of the month)
  - Also in Meeting Maker
  - Because moving small changes from the development server to the production server was becoming a full-time job for our programmer
  - People got used to this surprising quickly
  - Creates a regular rhythm around which our work is organized (Scrum: “sprints”)
Meetings

- No daily meetings like in Scrum
- DLA Software Team meets once a week
- Each DLA Content Team meets about every 2 weeks
- One overall DLA meeting a month with all the core DLA members
- Plenty of informal communication on a need-be basis
Process review

- We review our process regularly to see what can be improved
  - esp. at the end of each project
“Finishing” a project

- No more never-ending projects
- Push hard to go live early
  - Share development version of the project right from the beginning
  - Everybody sees the site evolve as we go
    - Ongoing testing
  - Put into production as soon as the site is minimally functional
“Finishing” a project (2)

- Control functionality creep
  - New functionality pieces
    - Waiting for their turn in the big DLA Software to-do list
    - “Competing” against all the other pieces in terms of priority
  - Each DLA Content Team knows that
    - Chooses the smallest possible subset of functionality to be implemented by go-live date
    - Functionalities on “Wish list” developed after go-live date (e.g., image rotation)
  - Negotiate reachable milestones for most important functionalities
“Finishing” a project (3)

- After a project goes live
  - The DLA Content Team completely stops working on it
    - Except bug fixing
    - No more meetings
  - The Project Owner collects feedback and creates a wish list
"Finishing" a project (4)

- DLA Content Team briefly reopens the project about 4 months after it goes live
  - Reviews the wish list
  - Decides if new pieces of functionality should be put on the DLA Software Team’s to-do list
  - Decides if the Ingester should be doing a few small tweaks
- If a project needs a new round of development
  - Handled as a completely separate project
  - Added to the DLA Content Team’s list of future projects
Conclusion

- We are very happy with this model. It really works for us!

- My recommendations
  - The Agile/Scrum approach is very powerful
  - Use it as a source of inspiration
  - But don’t be afraid to pick and choose
    - Try pieces of it and keep what works for you

- Questions?