Agile Project Management and the Real World

Emily Lynema

DLF Fall 2010
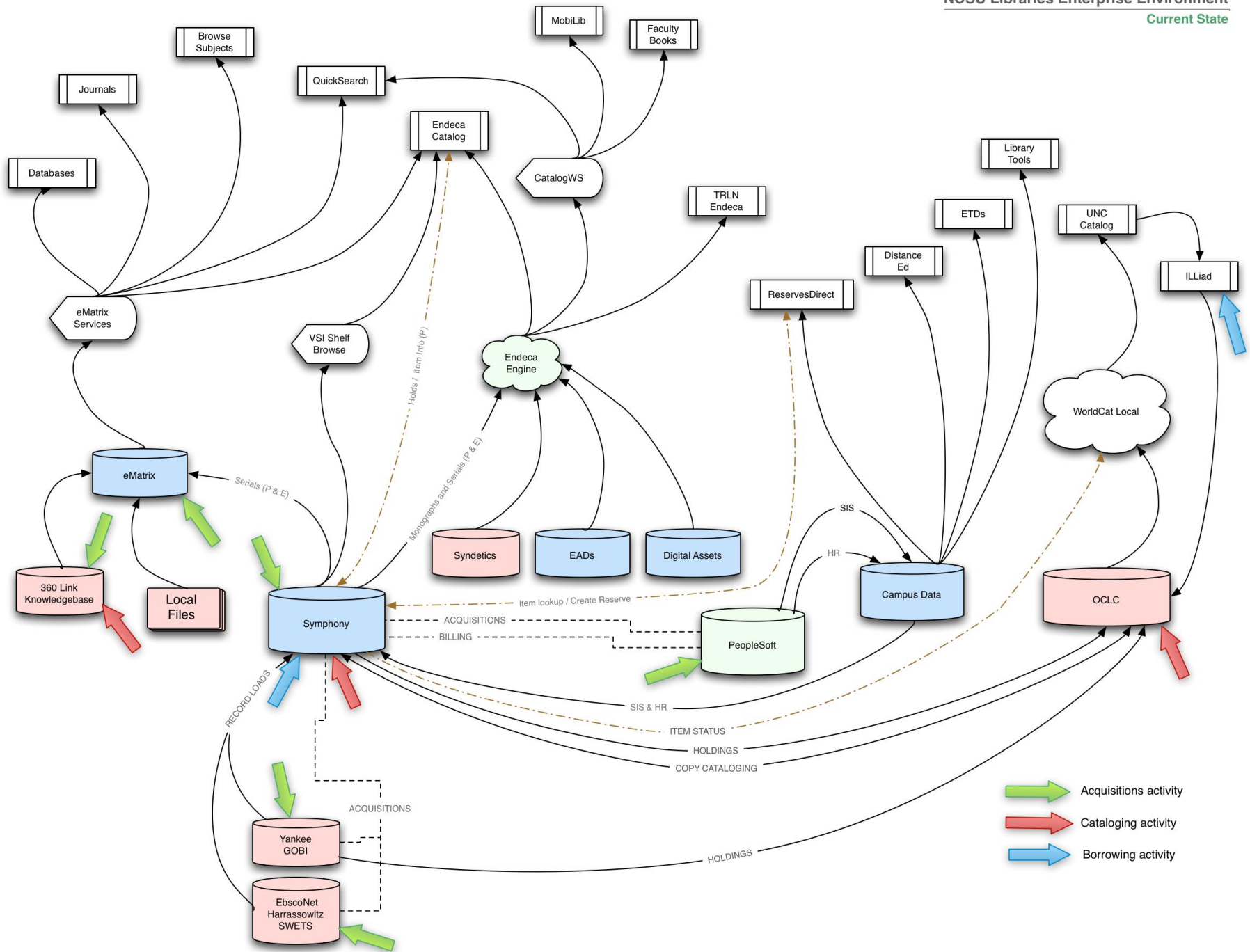
November 1, 2010

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Outline

- Why care about project management?

- Traditional vs. Agile

- What is Agile?

- What is Scrum?

  - Agile case study: NCSU

- Making choices

- Resources

Why care?

- You have too much to do
- NCSU Libraries
  - 6 developers
  - 33 Digital Library staff
  - >250 library staff
- Core Information Systems
  - 3 full-time developer positions
  - 18 supported applications
  - 10 in active development

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Browse Subjects

Journals

Databases

MobiLib

Faculty Books

QuickSearch

Endeca Catalog

CatalogWS

eMatrix Services

TRLN Endeca

Library Tools

VSI Shelf Browse

ETDs

UNC Catalog

Distance Ed

ILLiad

ReservesDirect

Holds / Item Info (P)

Endeca Engine

eMatrix

WorldCat Local

Serials (P & E)

Monographs and Serials (P & E)

360 Link Knowledgebase

Local Files

Syndetics

EADs

Digital Assets

SIS

Campus Data

OCLC

HR

Symphony

Item lookup / Create Reserve

ACQUISITIONS

BILLING

PeopleSoft

SIS & HR

ITEM STATUS

HOLDINGS

COPY CATALOGING

RECORD LOADS

Yankee GOBI

ACQUISITIONS

EbscoNet Harrassowitz SWETS

HOLDINGS

Acquisitions activity

Cataloging activity

Borrowing activity

What makes it harder?

- Priorities change frequently
- Requirements change frequently
- No defined business analysts
- Emergencies happen every day
- Many projects across few people
- Everyone handles full life cycle

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And it keeps going….

- IT black box
  - How long?
  - When will it be ready?
  - When will you work on my stuff?
  - Are you actually doing anything?
  - What do I have to do to get something done?

Traditional Project Management

......

Agile Project Management

....

What's the same?

- A project is still a project:
  - Vision
  - Life cycle
  - Requirements
  - Schedule
  - Team
  - Communication mechanisms

Project Life Cycle

Agile: iterative
1. Envision
2. Speculate
3. Explore
4. Adapt
5. Close
6. Repeat 3 – 5 as necessary

Traditional: waterfall
1. Initiate
2. Plan
3. Define
4. Design
5. Build
6. Test

Taken from Highsmith, James (2010). Agile project management: creating innovative products

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What's different?

- Traditional
  - Plan all in advance
  - Work-breakdown structure
  - Functional specs
  - Gantt chart
  - Status reports
  - Deliver at the end
  - Learn at the end
  - Follow the plan
  - Manage tasks

- Agile
  - Plan as you go
  - Feature-breakdown structure
  - User stories
  - Release plan
  - Story boards
  - Deliver as you go
  - Learn every iteration
  - Adapt everything
  - Manage team

What is Agile?

"Agile development is a method of building software by empowering and trusting people, acknowledging change as norm, and promoting constant feedback"

Shuh, Peter (2005). Integrating Agile Development in the Real World. p.2.

What is Agile?

"The formula for success is simple: deliver today, adapt tomorrow."

Highsmith, James (2010). Agile project management: creating innovative products. p.29.

What is Agile?

- Response to waterfall approach
- Values:
  - Individuals and interactions
  - Working software
  - Customer collaboration
  - Responding to change

Manifesto for Agile Software Development. Accessible at
http://agilemanifesto.org/

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Agile Principles

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

Manifesto for Agile Software Development. Accessible at http://agilemanifesto.org/

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Agile Principles

2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

Manifesto for Agile Software Development. Accessible at
http://agilemanifesto.org/

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Agile Principles

3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

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Agile Principles

4. Business people and developers must work together daily throughout the project.

Manifesto for Agile Software Development. Accessible at
http://agilemanifesto.org/

Agile Practices - Managerial

- Collocate team members and customers
- Allow team members to make decisions
- Maintain quality of work life
- Use information radiators for transparency and accountability
- Daily stand-up meetings
- Regularly evaluate processes

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Agile Practices - Technical

- Build automation
- Automated deployment
- Continuous integration
- Simple design
- Collective ownership
- Refactoring
- Pair programming

Project Life Cycle

Agile: iterative
1. Envision
2. Speculate
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Traditional: waterfall
1. Initiate
2. Plan
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4. Design
5. Build
6. Test

Taken from Highsmith, James (2010). Agile project management: creating innovative products

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Envision

- **Initiate** project
- Develop project vision, objectives, and constraints
- Create a core team
- High-level feature list

Speculate

- **Plan and Define** project
- Gather initial broad requirements
- Create initial backlog of features with user stories
- Develop iterative high-level release plan
  - Velocity + story points
  - Must be adaptable over time!

What is a user story?

Front of Card

17B

As a student I want to purchase a parking pass so that I can drive to school

Priority: ~~####~~ Should
Estimate: 4

Copyright 2005-2009 Scott W. Ambler

Back of Card

Confirmations:

~~The student must pay the correct amount~~

One pass for one month is issued at a time

The student will not recieve a pass if the payment isn't sufficient

The person buying the pass must be a currently enrolled student.

The student may only buy one pass per month.

See Cohn, Mike (2004). User Stories Applied. It's the authoritative source for user stories.

Agile Planning

- 5 levels of agile planning
  - Vision
  - Roadmap (2 years)
  - Release (2 months)
  - Iteration (2 weeks)
  - Daily

Image copyright CC-A-SA by jakuza
http://www.flickr.com/photos/jakuza/2681648917/sizes/z/

Explore

- **Design, build**, and **test** project
- Iteration planning
  - Commit to user stories for iteration
  - Create and estimate technical tasks
- Monitor progress
  - Daily stand-ups
  - Visual taskboard
  - Burndown chart
- Working code = committed + tested

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Image copyright CC-A-NC by Gerry Kirk
http://www.flickr.com/photos/gkirk/3352780464/

Adapt

- Review everything!
  - Not part of traditional model
- Customer demonstrations
  - Feedback used to plan next iteration
- Technical review
- Team performance
  - Do need to change process?
- Project status
  - Do we need to re-align release plan?

Close

- Release (maybe)
- Celebrate!

Agile Development Methodologies

- eXtreme Programming
- Crystal
- Lean Software Development
- Scrum
- Feature-Driven Development (FDD)

What is Scrum?

- Focuses on iteration management
- Roles
  - Product Owner
  - ScrumMaster
  - Team
- Artifacts
  - Product Backlog
  - Sprint Backlog

A Scrum Sprint
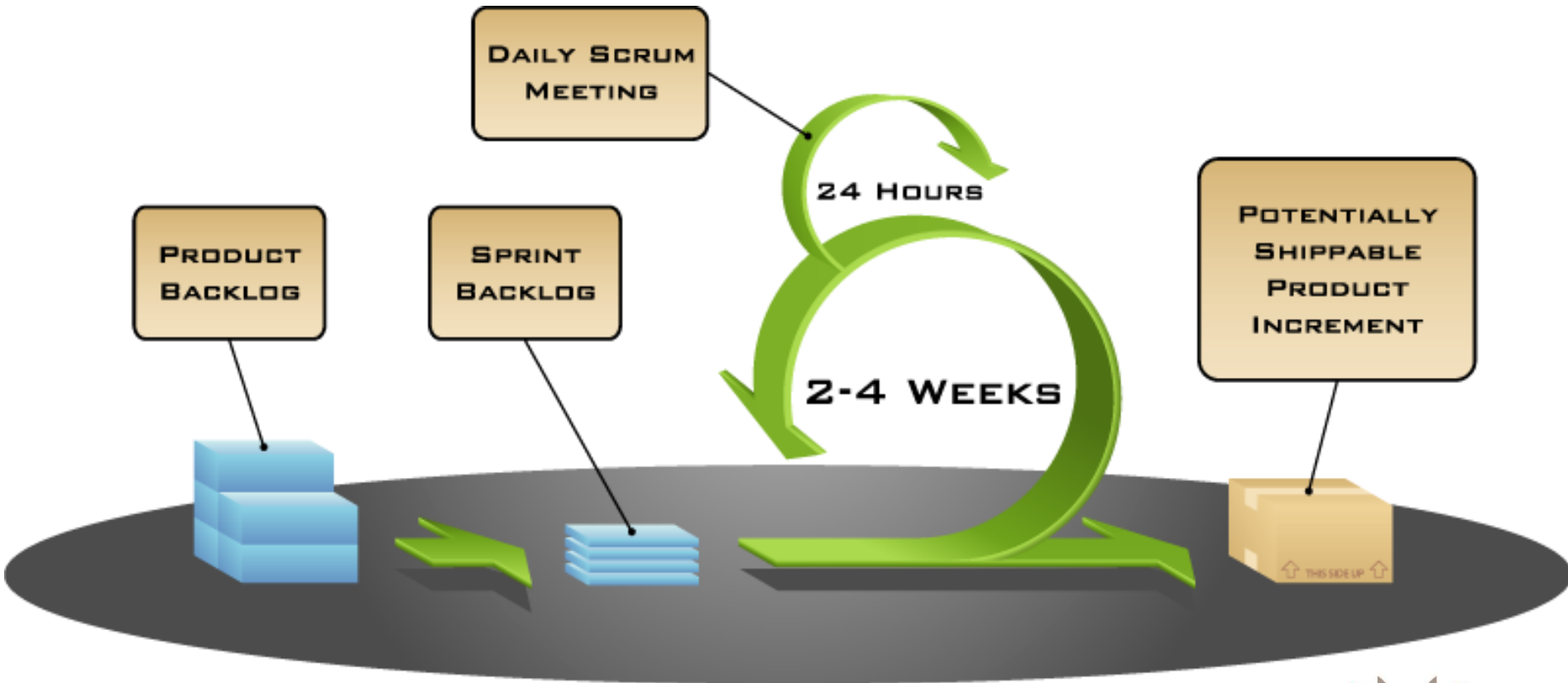
Image from www.mountaingoatsoftware.com/scrum

A Scrum Sprint

- Sprint Planning
  - Commit to certain functionality & estimate
  - Produces Sprint Backlog
- Daily Scrum
  - 15 minutes @ start of day
  - What have you done since last Scrum?
  - What will do before next Scrum?
  - What obstacles?

A Scrum Sprint

- Sprint
  - Team does the work!
- Sprint Review
  - Show off completed functionality
  - Add new requests / changes to backlog
- Sprint Retrospective
  - What went well during the Sprint?
  - What could be improved for the next?

Agile in Libraries

- What makes agile challenging to apply in libraries?
  - Small development teams
  - Responsible for both operational support and development
  - Often *many* smaller projects to handle
  - Fewer defined project roles

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Why Agile @ NCSU?

- Tackle big problems in small pieces
- Be more transparent
- Be more adaptable
- Produce tangible results quickly and frequently

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What is Agile @ NCSU?

- Loosely based on Scrum
- Iterative development cycles followed by release
- Ongoing, just-in-time planning & documentation
- Collaboration with customers
  - Cross-functional teams w/IT point person
  - Developers participate

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Transition

- Migrating from 6 week to 3 week cycle
- Goals
  - Focus on fewer projects at a time
  - Increase collaboration and cross-training
  - Reduce complexity of planning
  - Easier to estimate and plan velocity
  - Easier to freeze requirements & projects
  - Technology spikes

Real world

- 3 week iteration
  - Speculate: release planning prior to start of iteration
  - Explore: 3 weeks development
    - Start with sprint planning
    - Re-align as necessary
  - Adapt
    - Expose to customers during cycle

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NCSU Toolbox

- Requirements: Confluence + JIRA
- Product & Sprint backlog: JIRA
- Release planning: Google docs
- Sprint planning: Google docs + JIRA
- Daily Scrum
- Sprint review: Product Team meetings
- Sprint retrospective

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Speculate

Release Planning

- Ongoing
  - Each stakeholder team works with IT representatives to lay out functional priorities for upcoming releases
  - This is very flexible and changeable!
- Core IT team prioritizes several projects each cycle

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Other Future Issues

- Archive legacy holdings (need to determine criteria for doing this and interface implications) ** NEEDS DEFINITION
- Manual merge of collection and article database resources (EMAT-302) ** NEEDS DISCUSSION
- Re-evaluate user interface design around holdings ** NEEDS DISCUSSION
- first open source release?
- Include other record types (sertype blank)

2.5.0

- Automatic merging of records from SerSol and Sirsi based on SerSol identifiers (see Jacquie) - exclude MARC records with 'SS' in 001 by default; evaluate whether synchronizer can handle this as a new identifier.
- Create ability to migrate manually entered data in E-Matrix when SerSol changes database codes for existing databases.
- Re-design license data entry form based on new mockups (fewer fields). May require mapping some old fields with data in the database to new fields.

- Use SOLR for begins with work - database web service for database list & quick search integration
- Define user stories and wireframes for phase 1 access verification system with E-Matrix Committee.
- Define necessary work for ISSN-L. This will likely require re-evaluating the entire way the synchronizer works, in addition to making it possible to import >2 ISSNs per record from Sirsi, and adding 022$l to the Sirsi synchronizer.

2.6.0

- Create Unique Titles report?
- Phase 1 of access verification system

- - select collections / journals to check
  - click button to generate report / queue of items to check
  - provide some sort of queue (maybe one queue anyone can pull from)
  - basic screen for verification (what links should be on here?)
  - button to mark something done / checked
  - link to generate email / ticket to Remedy. There is a desire to have a form that would actually categorize the issue using Remedy API (see Troy's work on the acquisitions form) if that is possible in phase 1.
  - students need to be able to log into E-Matrix to do checking???

2.7.0

Release Planning

- 3rd week of previous iteration
  - High level overview of upcoming projects out 3 months
  - Prioritize projects for the next 3 week iteration with core IT staff
  - Goal: no more than 2 projects at a time
  - Just in time requirements gathering this week, if necessary

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Google docs IT Development Schedule 🔒 Private to Maurice York + 4 more

Saved 2 minutes ago | Saved | 🔗 Share ▼

File Edit View Insert Format Form Tools Help

Formula:

	A	F	G	H	I	J	K	L	M	
1		June 14 - July 2	July 5 - July 23	July 26 - August 13	August 16 - September 3	September 6 - September 24	September 27 - October 15	October 18 - November 5	November 8 - December 3	De De TES'
2	E-Matrix	2.3.0 testing	2.3.0 finish	2.3.0 release	2.4.0 - cost data association;	2.4.0 user testing / debugging	SOLR begins with; include database list services	exclude sersol records by October 21; evaluate sersol merging identifier; 2.5.0	licensing	
3	Endeca / TRLN	shopping cart (AC out 6/28 - 7/5)	finish 3.0.0;	work on 3.0.0; release website redesign - look and feel (2.10.0);	finish and release 3.0.0		cover image URL caching; open mail relay;		finalize & deploy 3.1.0 functionality (call 3.1.1 release?) virtual browse first step - new link on full record;	
4	ReservesDirect		roll out 1.5.0 / 1.6.0	website re-design (re-do ncsu stylesheets)		RD course instance audit phase 1		open source release	audit phase 2	
5	Journals			1.6.1 - website redesign - looks and feel + small UI changes						
6	Databases			website re-design - look & feel		subject url bug fix				
7	Sirsi									
8	OLE									
9	ILLiad									
10										
11	Journey					Journey bug fixes - 1.4.2			Journey 1.4.3 - language	
12	Classmate		first use of classmate			ClassMate for students			ClassMate 1.0.0	
13	Intranet Apps			student jobs 0.0.1	catalog stats form to connect to google docs?	managerial eval system evaluation	managerial eval system; HTML mockup for mobile pull list app	meet re: surveymonkey for managerial eval system; finally investigate google docs for cataloging		

Skeleton | Hours | **2010 Overview** ▼ | 2010 Detail | 2011 Overview | Parking Lot | 2009 Overview | 2009 Detail | 2008 Overview | 2008 Detail

❌ Find: 🔍 support | Next | Previous | ◯ Highlight all | ☐ Match case

Sprint Planning

- Day 1 of iteration
  - 2-hour meeting
  - Include all development team members
  - Goal: utilize stories already entered in JIRA
  - Collaboratively create and estimate tasks for all stories
  - Collaboratively assign / volunteer for tasks

Endeca – Planning Board – NCSU L...   +

JIRA

Emily Lynema ▾ | Quick Search |

Dashboards ▾   Projects ▾   Issues ▾   Agile ▾   Administration ▾   + Create Issue

Endeca ▾ Default ▾ ↻   ✛ New Card   ◉ Views ▾   ⚙ Tools ▾
Planning Board ▾   Version ▾   3.1.0 ▾

▽▾ | Board Search | Add | Statistics

↗↓ ENDE-411
Remove 'current' label from journal list links
0h
Emily Lynema

◉↓ ENDE-415
Tabs + Google books issue in Chrome
N/A
Troy Hurteau

◉↓ ENDE-441
Horizontal scrollbar at bottom of results page for some searches
0h
Troy Hurteau

↗⬆ ENDE-260
Enhance image server to provide image URL quickly so ajax request is not
0h
Troy Hurteau

↗⬆ ENDE-403
Improve catalogws usability for multi-touch
5h
Emily Lynema

⊞⬆ ENDE-404
Create private key system to better close down open mail relay
0h
Karl Doerr

⊞⬆ ENDE-421
2 Subs
Investigate feasibility of captcha use with email functionality
Σ0h
Troy Hurteau

↗⬆ ENDE-425
Include all ISBNs in catalogws output
1.5h
Emily Lynema

↗⬆ ENDE-427
Index fuller 245 in journal title index
1.5h
Emily Lynema

▯⬆ ENDE-436
5 Subs
Create cover image lookup service for virtual browse applications
3.1.0
Emily Lynema

⊞⬆ ENDE-437
ENDE-436
Process Syndetics data file into format for ingest
3.1.0
Karl Doerr

⊞⬆ ENDE-438
ENDE-436
Investigate Solr as possible indexing option
3.1.0
Adam Constabaris

⊞⬆ ENDE-439
ENDE-436
Integrate catalogws response to include cover image URLs
3.1.0
Adam Constabaris

⊞⬆ ENDE-440
ENDE-436
Create a cronscript to run weekly data ingest
3.1.0
Karl Doerr

▣⬆ ENDE-442
Change link to AACCRR in status message
0h
Karl Doerr

⊞⬆ ENDE-443
ENDE-436
Create Solr wrapper script for search service
3.1.0
Adam Constabaris

⊞⬆ ENDE-444
ENDE-421
Add captcha to email form on full record and shopping cart pages
3.1.0
Troy Hurteau

⊞⬆ ENDE-445
ENDE-421
Process captcha on the server to determine validity
3.1.0
Troy Hurteau

⊞⬆ ENDE-446
Create servlet or filter to receive email / text reuests and add catalog's private key
0h
Karl Doerr

◉⬆ ENDE-447
CED Media Center textbooks should not say 'On Reserve'
0h
Emily Lynema

▣⬆ ENDE-450
Create Ground Floor Reading Room location
0h
Emily Lynema

◉⬆ ENDE-452
ICPSR shared records cause errors on full record
0h
Emily Lynema

◉⬆ ENDE-456
Fix links on request page
0h
Emily Lynema

↗⬆ ENDE-459
Improve holdings display
1h
Emily Lynema

◉⬆ ENDE-417
Handle RefWorks export for shared records
3h
Emily Lynema

Unscheduled

3.1.0

Parent: None
Start date: None
End date: None
Release date: None

Bug: 9   Improvement: 6
New Feature: 3   Sub-task New
                    Feature: 7
Task: 2   User Story: 1
Total issues: 28

To Do: 7   Unresolved: 10
In Progress: 3   Resolved: 18
Done: 18

Time estimate: 75h
Time spent: 0h
Time Remaining: 75h

3.2.0

Parent: None
Start date: None
End date: None
Release date: None

Bug: 1   Improvement: 3
New Feature: 1
Total issues: 5

To Do: 5   Unresolved: 5
In Progress: 0   Resolved: 0
Done: 0

Time estimate: 15h
Time spent: 0h
Time Remaining: 15h

Sprint Planning

- Day 2 or 3
  - Add up task estimates across projects
  - Ensure that individual developers are not over-committed
  - Scope down at project level or divide work as necessary

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Google docs IT Development Schedule 🔒 Private to Maurice York + 4 more   Saved 6 minutes ago | Saved | 👤 Share ▾

File Edit View Insert Format Form Tools Help

Formula:

A	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU
1	August 16 - September 3					September 6 - September 24					Sep 27 - October 15					October 18 - November 5					November 8 - December 3				
2	AC	KD	TH	EL	Total	AC	KD	TH	EL	Total	AC	KD	TH	EL	Total	AC	KD	TH	EL	Total	AC	KD	TH	EL	Total
E-Matrix	59	43	4		106	?	?			0	24				24	84	3	10		97					0
Endeca / TRLN	4	12	15	9	40			1	11	12	45	36	37	15	133					0					0
ReservesDirect					0		63			63					0		57			57					0
Journals					0					0					0					0					0
Databases					0			2		2					0					0					0
Summon					0					0					0					0					0
Sirsi					0					0					0					0					0
OLE					0					0					0					0					0
ILLiad					0					0					0					0					0
					0					0					0					0					0
Journey					0			12		12					0					0					0
Classmate			18		18			18		18			8		8					0					0
Intranet Apps					0					0			10		10			10		10					0
Data & Authentication					0			2		2					0					0					0
SFX					0					0					0					0					0
EZproxy					0					0					0					0					0
Jira					0					0					0					0					0
Virtual Browse					0					0					0					0					0
Mobile Devices					0					0					0					0					0
Umlaut					0					0					0					0					0
Shopping Cart					0					0					0					0					0
Portal Services					0					0					0					0					0
OLE					0					0					0					0					0
Assigned Hours	63	55	37	9	164	0	63	35	11	109	69	36	55	15	175	84	60	20	0	164	0	0	0	0	0
Max Hours Allowed	60	60	45	15	180	60	60	45	15	180	60	60	45	15	180	60	60	45	15	180					0
Unassigned Hours	-3	5	8	6	16	60	-3	10	4	71	-9	24	-10	0	5	-24	0	25	15	16	0	0	0	0	0

Skeleton | Hours | 2010 Overview | **2010 Detail** ▾ | 2011 Overview | Parking Lot | 2009 Overview | 2009 Detail | 2008 Overview | 2008 Detail

Explore

Development

- Get it done

- Daily scrum 10 – 15 minutes
  - Identify obstacles and priorities
  - Emphasize collaboration

- Weekly review
  - How does progress look for cycle?
  - Requires estimation and work logging

- Subversion -> JIRA integration

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JIRA

Emily Lynema ▾   Quick Search

Dashboards ▾   Projects ▾   Issues ▾   Agile ▾   Administration ▾   ✚ Create Issue

Endeca ▾ **Default** ▾ ⟳   ✚ New Card   👁 Views ▾   ⚙ Tools ▾
Task Board ▾   3.1.0 ▾   All Assignees ▾

▽▾   Board Search   ⇳ ⬍

To Do - 28h	In Progress - 34h	Done - 13h

| ⊞ ✚ ☝ **ENDE-421** 2 Subs ▽ | Investigate feasibilty of captcha use with email functionality | Unknown | 3.1.0 | 3.1.0 | Resolved |

2 issues - 0h

⊞ ✚ ☝ ~~ENDE-444~~	⊞ ✚ ☝ ~~ENDE-445~~
Add captcha to email form on full record and shopping cart pages 3.1.0 Troy Hurteau	Process captcha on the server to determine validity 3.1.0 Troy Hurteau

| 📄 ☝ **ENDE-436** 5 Subs ▽ | Create cover image lookup service for virtual browse applications | 3.1.0 | Unknown | Open |

2 issues - 19h   **2 issues - 31h**   **1 issues - 12h**

⊞ ✚ ☝ ENDE-439	⊞ ✚ ☝ ENDE-440	⊞ ✚ ☝ ENDE-438	⊞ ✚ ENDE-443	⊞ ✚ ☝ ~~ENDE-437~~
Integrate catalogws response to include cover image URLs 3.1.0 Adam Constabaris	Create a cronscript to run weekly data ingest 3.1.0 Karl Doerr	Investigate Solr as possible indexing option 3.1.0 Adam Constabaris	Create Solr wrapper script for search service 3.1.0 Adam Constabaris	Process Syndetics data file into format for ingest 3.1.0 Karl Doerr

Other Issues   ▽

4 issues - 9h   **1 issues - 3h**   **14 issues - 1h**

📄 ☝ ENDE-403	📄 ☝ ENDE-425	📄 ☝ ENDE-417	📄 ⬇ ~~ENDE-411~~	📄 ⬇ ~~ENDE-415~~
Improve catalogws usability for multi-touch 5h Emily Lynema	Include all ISBNs in catalogws output 1.5h Emily Lynema	Handle RefWorks export for shared records 3h Emily Lynema	Remove 'current' label from journal list links 0h Emily Lynema	Tabs + Google books issue in Chrome N/A Troy Hurteau

📄 ☝ ENDE-427	📄 ☝ ENDE-459		📄 ⬇ ~~ENDE-441~~	📄 ☝ ~~ENDE-260~~

Testing

- "the weakest link"

- Manual testing throughout iteration
  - Utilize weekly product team emails
  - Demo at regular meetings
  - Need automated testing!

- Developers and IT product managers are first line of QA

Adapt

Weekly Review

- How much progress are we making toward sprint goal?
  - Things are harder than you expect
  - New requests come in
  - Emergencies crop up

JIRA

Emily Lynema ▼   Quick Search

Dashboards ▼   Projects ▼   Issues ▼   Agile ▼   Administration ▼   ＋ Create Issue

Endeca · Default ▼ ↻

Chart Board ▼   3.1.0 ▼   Issue Burndown Chart ▼

＋ New Card   👁 Views ▼   ⚙ Tools ▼

Board Search   Add   Statistics

3.1.0

Parent: None
Start date: 4/Oct/10
End date: 5/Nov/10
Release date: 12/Nov/10

Bug: 9   Improvement: 6
New Feature: 3   Sub-task New
                          Feature: 7
Task: 2   User Story: 1
Total issues: 28

To Do: 7   Unresolved: 10
In Progress: 3   Resolved: 18
Done: 18

Time estimate: 126h 16m
Time spent: 68h 58m
Time Remaining: 75h

3.2.0

Parent: None
Start date: None
End date: None
Release date: None

Bug: 1   Improvement: 3
New Feature: 1
Total issues: 5

To Do: 5   Unresolved: 5
In Progress: 0   Resolved: 0
Done: 0

Time estimate: 15h
Time spent: 0h
Time Remaining: 15h

Legend:
- ▬ Guideline
- ▬ Burndown chart
- ▬ Created issues
- ▬ Required daily burndown rate
- ── Completed
- ······ Ongoing
- --- Trend

Done   🔲 ✳ ✉ ✴ 📘 📄 zotero M 7498 emilylynema@gmail.com

Sprint Retrospective

- Last day of iteration
  - Did we accomplish what we wanted to?
  - If not, why not?
  - What went well?
  - What would we do differently next time?

Close

Release

- Release at end of cycle if approved
  - Stakeholders may prefer to wait for new features
  - Release can be delayed if testing is not performed during cycle
  - Need automated testing!
- If release is large or complex, may need an entire cycle to test prior to release

Things we've learned

- Prioritization difficult for library staff.
  - Work at release level or higher
- Reduce 'churn' by trying to focus on fewer projects within a given cycle.
- Limit the unknown – don't combine new projects with new technologies.
- Difficult to freeze plans for 6 weeks.
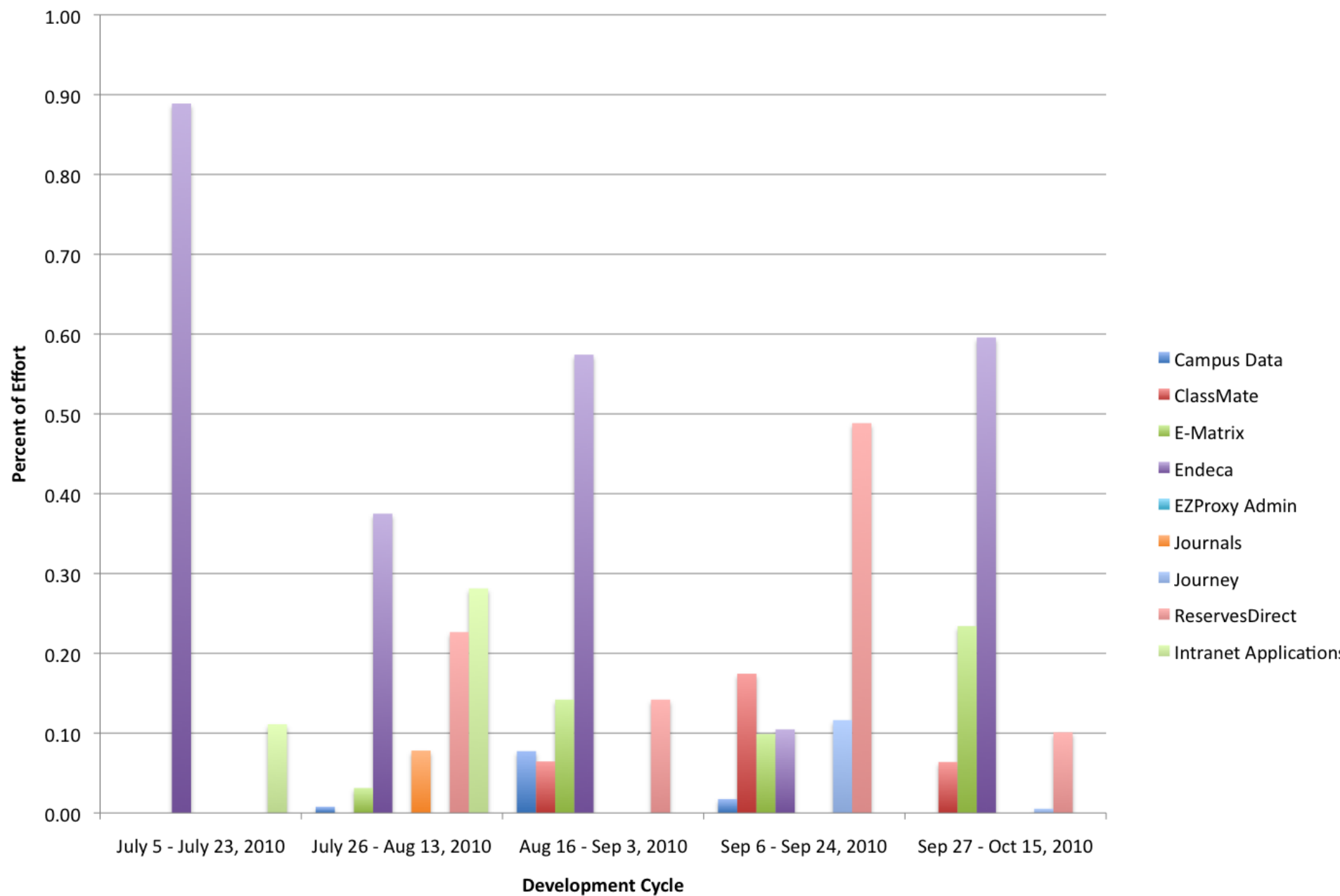
NCSU LIBRARIES

Challenges

- Many small projects to support at once
  - Not traditional for Agile practices
  - Each iteration can be a release
- Difficult to estimate story points
  - Planning hindered with estimates at task-level only
- Tough to fit it all into 3 weeks
  - Develop a rhythm of staggered release?

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Challenges

- Difficult to develop requirements in time
  - True customer not collocated with team
  - Teams of librarians work slowly
- Testing
  - How and when to automate for small projects?
  - No 'QA' experts
- Simultaneously handle support and development

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Outcomes

- Positive movement across multiple projects
  - Individual development efforts timeboxed
  - In 2010, ~32 releases across 9 projects
  - Increased user satisfaction
- Increased flexibility to adapt to changing priorities and needs

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Legend:
- Campus Data
- ClassMate
- E-Matrix
- Endeca
- EZProxy Admin
- Journals
- Journey
- ReservesDirect
- Intranet Applications

Why Choose?

- Traditional
  - Change is very expensive
  - Well-defined requirements
  - Project is familiar territory
  - Customer is difficult to communicate with

- Agile
  - Change happens frequently
  - Requirements not well-defined
  - New technology or project domain
  - Customer isn't sure of what is desired

Agile Tools

- JIRA + Greenhopper
  - 10 users for $20 (local installation)
  - http://www.atlassian.com/software/jira/
  - http://www.atlassian.com/software/greenhopper/
- Agile Zen
  - Free for one project (hosted)
  - http://agilezen.com/
- VersionOne
  - Free for one team (hosted)
  - http://www.versionone.com/

Online

- Agile Manifesto
  http://agilemanifesto.org/

- Agile for All blog:
  http://www.agileforall.com/blog/

- Succeeding with Agile:
  http://blog.mountaingoatsoftware.com/

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Books

- Agile Project Management with Scrum
  ISBN: 073561993X
- Agile Software Development with Scrum
  ISBN: 0130676349
- Managing Agile Projects
  ISBN: 0131240714
- Agile Project Management: Creating
  Innovative Products
  ISBN: 0321658396

Questions

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