“Can’t you squeeze in one more project?”

How do we communicate about overall software development capacity?

Delphine Khanna, Temple University
DLF Forum -- October 28, 2014

Software Infrastructure Development at TU Libraries

- Housed in the Digital Library Initiatives Department
- Only one of several activities in the department
- Open Source development
  - E.g., Hydra-based development, Omeka, OJS, etc.
- Area of growth for us
  - Currently 2 programmers devoted to that type of work
  - Expecting more capacity over the next few months

Software development capacity?

- Capacity to
  - Develop software
  - Install/integrate/customize/extend software
- How much can we do?
  - How many projects can we take on?
  - What is our actual capacity?
- Communicating on this clearly can be challenging
  - With administrators, internal customers, project stakeholders, etc…
  - Many potential projects on the wish list

Common Project Management tools

- Most project management tools are really effective at the single project level
  - Not so great for a bird's eye view
- Other options?
  - Some form of prioritized list of current and upcoming projects
  - Gantt chart

→ Do not do enough to express **capacity**

Development capacity: Perception throughout the organization

- **Amorphous**
  - Vague sense that the developers "are busy"
  - But how busy exactly?
- "Can't you just squeeze in one more project?"
  - Especially this one high priority project
- "How long will I have to wait for my project to get its turn?"
  - "And why can't it happen sooner?"
- If not addressed
  - Can cause tensions organizationally and stressful for the developers

How can we do better?

A deceptively simple tool

- Our answer: a deceptively simple tool
  - Simply in a Google spreadsheet
  - But focused on **capacity**
- Very powerful as a communication vehicle

- Main goals:
  - Be completely transparent about capacity
  - Allow for easy reprioritization
  - Have developers fully involved in the planning process
  - Low overhead

Expert developers' month-by-month schedule

https://docs.google.com/a/temple.edu/spreadsheets/d/165aTFkdxP4U8Of-nNMUfi36kugUZquWwdqzZnp69R0I/edit#gid=0

	Total # hours /week	Non programming time/week	Programming/ Tech time	# of Programming / Technical Slots
Kate	40	20	20/week = 80/month	4/month
Steven	40	10	30/week = 120/month	6/month

Notes:
* 1 slot = 20 hours
* Non programming time includes meetings, architecturing meetings, code reviews, managing employees, answering email, professional growth activities...
* Not accounted for: vacation, sick days, conference attendance, special project (e.g. Strategic Guidance) will be reflected in each month's graph based on actual occurrences
* In the chart below, "LOCKED" means that a slot is committed and is not a candidate for reprioritization any longer. (e.g., because we have promised a delivery date to a group of stakeholders)

		Slot 1 (20 hours)	Slot 2 (20 hours)	Slot 3 (20 hours)	Slot 4 (20 hours)	Slot 5 (20 hours)	Slot 6 (20 hours)	Deadline Date	Deadline Project	Spillover
Oct 2014										
Kate	80 hours/month	Hydra Connect 2 - DONE	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	(1) Aggregator Phase 1 - LOCKED (2) InsightIQ leveraging - LOCKED	(1) Misc programming (2) Aggregator Phase 2 - LOCKED			10/16/2014	Hard deadline: OJS Phase 2 launch	
Steven	120 hours/month	Hydra Connect 2 - DONE	(1) Hydra production investigation - LOCKED (2) Misc programming	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED			
Nov 2014										
Kate	80 hours/month	Vacation	Aggregator Phase 2 - LOCKED	VIVO Prototype - LOCKED	(1) Misc programming					

Monthly slots | List of projects | Done! (Monthly slots) | Done! (List of projects)

Expert developers' month-by-month schedule

https://docs.google.com/a/temple.edu/spreadsheets/d/165aTFkdxP4U8Of-nNMUfi36kugUZquWwdqzZnp69R0I/edit#gid=0

		Slot 1 (20 hours)	Slot 2 (20 hours)	Slot 3 (20 hours)	Slot 4 (20 hours)	Slot 5 (20 hours)	Slot 6 (20 hours)	Deadline Date	Deadline Project	Spillover
Oct 2014										
Kate	80 hours/month	Hydra Connect 2 - DONE	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	(1) Aggregator Phase 1 - LOCKED (2) InsightIQ leveraging - LOCKED	(1) Misc programming (2) Aggregator Phase 2 - LOCKED			10/16/2014	Hard deadline: OJS Phase 2 launch	
Steven	120 hours/month	Hydra Connect 2 - DONE	(1) Hydra production investigation - LOCKED (2) Misc programming	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED			
Nov 2014										
Kate	80 hours/month	Vacation	Aggregator Phase 2 - LOCKED	VIVO Prototype - LOCKED	(1) Misc programming (2) Hydra Assessment repository (Phase 1) - LOCKED					
Steven	120 hours/month	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Aggregator Phase 2 - LOCKED	(1) Misc programming (2) VIVO Prototype		Hydra Assessment Phase 1: commited to implementing this in November. Info communicated to Assessment Committee by Nancy.	
Dec 2014										
Kate	80 hours/month	Aggregator Phase 2	Aggregator Phase 2	Special Dec - Vacation	(1) Misc programming					

Expert developers' month

https://docs.google.com/a/temple.edu/spreadsheets/d/165aTFkdxP4U8Of-nNMUfi36kugUZquWwdqzZnp69R0I/edit#gid=1009955673

Expert developers' month-by-month schedule

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

Comments Share

Institutional/dataset repository (Phase 1)

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Task**	**Main requester/stakeholder**	**Developer**	**# of Slots**	**# of Hours**	**Slotted?**	**Status**	**When? (see Monthly slots tab for details)**	**Notes / Description**	**Project -specific to-do list (if existing)**		
2	Drupal Hours module refactoring	WSG	Kate	2.5 slots	50 hours	Yes	In progress	Oct 2014				
3	ContentDM Hydra Reskinning - Bare bones beta	SCRC/Digitization Practices Group	Steven, Kate	8 slots	160 hours	Yes	In progress	Oct, Dec 2014 - Jan 2015		https://docs.goog		
4	Aggregator - Phase 2 (Collaborative)	Joe	Kate, Steven	8 slots	160 hours	Yes		Oct 2014 - Jan 2015				
5	InsightIQ leveraging	Underlying infrastructure	Kate, Steven	0.5 slots	10 hours	Yes		Nov 2014				
6	Assessment Repository & Dashboard Project -- Phase 1	Nancy Turner	Steven, Kate	5.5 slots	110 hours	Yes		Nov - Dec 2014				
7	VIVO Prototype	Research Data Group/SEL	Kate, Steven	2 slots	40 hours	Yes	Next	Nov - Dec 2014	The bulk of this work will take place in November 2014			
8	ContentDM Hydra Reskinning - Full beta	SCRC/Digitization Practices Group	Steven, Kate	6 slots	120 hours	Yes		Jan - Feb 2015				
9	Institutional/dataset repository (Phase 1)	Scholarly Comm. officer	Kate	5 slots	100 hours	Yes		Feb 2015				
10	Misc programming & technical work, eg maintenance on Omeka, main Library website, Islion, web servers, ADA maintenance	Misc.	Kate, Steven	recurring, 1/2 slot per month for each	20 hours	Yes		Recurring				
11	Assessment Repository & Dashboard Project -- Phase 2	Nancy Turner	Kate, Steven	5 slots	100 hours		Inactive					
12	OJS Phase 3	TUP	Kate, Steven	4 slots	80 hours		Inactive					
13	ContentDM Hydra Reskinning - Production release	SCRC/Digitization Practices Group	Steven, Kate	10 slots???	200 hours???		Inactive					
14	ContentDM Hydra Reskinning - Phase	SCRC/Digitization	Kate,	10 slots???	200		Inactive					

Monthly slots | List of projects | Done! (Monthly slots) | Done! (List of projects)

Expert developers' month-by-month schedule

	Task	Main requester/stakeholder	Developer	# of Slots	# of Hours	Slotted?	Status	When? (see Monthly slots tab for details)	Notes / Description	Project -specific to-do list (if existing)
14	ContentDM Hydra Reskinning - Phase 2	SCRC/Digitization Practices Group	Kate, Steven	10 slots???	200 hours???		Inactive			
15	Oral Histories Hydra Head - Phase 2	SCRC/Digitization Practices Group	Kate, Steven	4 slots	80 hours		Inactive			
16	Scalar	DSC / Matt	Kate, Steven	4 slots???	80 hours		Inactive			
17	Video display Hydra Head (WPVI reskinning)	SCRC	Kate, Steven	10 slots	200 hours		Inactive			
18	Institutional/dataset repository (Phase 3 & more)	Scholarly Comm. officer	Kate	???	???		Inactive		100 hours if after reskinning CDM project, otherwise 180 hours	
19	OCS	TUP	Steven???	2 slots???	40 hours???		Inactive		On hold as initial target project not happening per stakeholders' word as of Jul 2014	
20	Additional Isilon microservices (better monthly reporting on usage, etc)	Underlying infrastructure	Kate, Steven	4 slots	80 hours		Inactive			
21	Large media files Hydra Head -- Bare bones	SCRC	Steven	18 slots???	360 hours???		Inactive			
22	Improvements to ETD ingest workflow	Jonathan	Kate	1 slot	20 hours		Inactive			
23	Set up improved server monitoring system in TUCloud (Puppet, etc)	Underlying infrastructure	Kate, Steven	5 slots	100 hours		Inactive			
24	Neatline - Make ADA compliant	DSC / Matt	Kate	1 1/2 slots	30 hours		Inactive			
25	Aggregator - Phase 3 and beyond	Joe	Kate	5 slots???	100 hours???		Inactive		Production version -- only if designated	
26	Omeka multi-site implementation???	DSC / Matt	Kate	???	???		Inactive			
27	Isilon Audit	Underlying infrastructure	Kate	1 slot	20 hours		Inactive		Automated audit completed in August 2014, will revisit in-dept audit if/when appropriate	

Expert developers' month-by-month schedule

https://docs.google.com/a/temple.edu/spreadsheets/d/165aTFkdxP4U8Of-nNMUfi36kugUZquWwdqzZnp69R0I/edit#gid=0

		Slot 1 (20 hours)	Slot 2 (20 hours)	Slot 3 (20 hours)	Slot 4 (20 hours)	Slot 5 (20 hours)	Slot 6 (20 hours)	Deadline Date	Deadline Project	Spillover
Oct 2014										
Kate	80 hours/month	Hydra Connect 2 - DONE	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	(1) Aggregator Phase 1 - LOCKED (2) InsightIQ leveraging - LOCKED	(1) Misc programming (2) Aggregator Phase 2 - LOCKED			10/16/2014	Hard deadline: OJS Phase 2 launch	
Steven	120 hours/month	Hydra Connect 2 - DONE	(1) Hydra production investigation - LOCKED (2) Misc programming	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED	Hydra ContentDM Reskinning - Bare Bones beta - LOCKED			
Nov 2014										
Kate	80 hours/month	Vacation	Aggregator Phase 2 - LOCKED	VIVO Prototype - LOCKED	(1) Misc programming (2) Hydra Assessment repository (Phase 1) - LOCKED					
Steven	120 hours/month	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Aggregator Phase 2 - LOCKED	(1) Misc programming (2) VIVO Prototype		Hydra Assessment Phase 1: commited to implementing this in November. Info communicated to Assessment Committee by Nancy.	
Dec 2014										
Kate	80 hours/month	Aggregator Phase 2	Aggregator Phase 2	Special Dec - Vacation	(1) Misc programming					

Expert developers' month-by-month schedule

https://docs.google.com/a/temple.edu/spreadsheets/d/165aTFkdxP4U8Of-nNMUfi36kugUZquWwdqzZnp69R0I/edit#gid=0

Nov 2014									
Kate	80 hours/month	Vacation	Aggregator Phase 2 - LOCKED	VIVO Prototype - LOCKED	(1) Misc programming (2) Hydra Assessment repository (Phase 1) - LOCKED				
Steven	120 hours/month	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Hydra Assessment repository (Phase 1) - LOCKED	Aggregator Phase 2 - LOCKED	(1) Misc programming (2) VIVO Prototype		Hydra Assessment Phase 1: commited to implementing this in November. Info communicated to Assessment Committee by Nancy.
Dec 2014									
Kate	80 hours/month	Aggregator Phase 2	Aggregator Phase 2	Special Dec - Vacation	(1) Misc programming (2) VIVO Prototype				
Steven	120 hours/month	Hydra Assessment repository (Phase 1)	Aggregator Phase 2	Aggregator Phase 2	Hydra ContentDM Reskinning - Bare Bones beta	Special Dec - Vacation	(1) Misc programming (2) Special Dec - Vacation		
Ja [No Title]									
Kate	80 hours/month	Hydra ContentDM Reskinning - Bare Bones beta	Hydra ContentDM Reskinning - Full beta	Aggregator Phase 2	(1) Misc programming (2) Aggregator Phase 2				
Steven	120 hours/month	Hydra ContentDM Reskinning - Bare Bones beta	Hydra ContentDM Reskinning - Full beta	Hydra ContentDM Reskinning - Full beta	Hydra ContentDM Reskinning - Full beta	Hydra ContentDM Reskinning - Full beta	(1) Misc programming (2) TBD		

Expert developers' month-by-month schedule

Feb 2015							
Kate	80 hours/month	Hydra ContentDM Reskinning - Full beta	Drupal Hours	Institutional/Dataset repo (phase 1)	(1) Misc programming (2) TBD		
Steven	120 hours/month	Institutional/Dataset repo (phase 1)	Institutional/Dataset repo (phase 1)	Institutional/Dataset repo (phase 1)	Institutional/Dataset repo (phase 1)	TBD	(1) Misc programming (2) TBD
Mar 2015							
Kate	80 hours/month	TBD	TBD	TBD	(1) Misc programming (2) TBD		
Steven	120 hours/month	TBD	TBD	TBD	TBD	TBD	(1) Misc programming (2) TBD
Apr 2015							
Kate	80 hours/month	TBD	TBD	TBD	(1) Misc programming (2) TBD		
Steven	120 hours/month	TBD	TBD	TBD	TBD	TBD	(1) Misc programming (2) TBD
May 2015							
Kate	80 hours/month	TBD	TBD	TBD	(1) Misc programming (2) TBD		
Steven	120	TBD	TBD	TBD	TBD	TBD	(1) Misc

Rooted in reality

- Completely changes the tone of the conversation
  - Fact based
  - Rooted in the reality of our development capacity
- Entirely transparent process
  - Always open to reprioritization by relevant administrators
- "Can't you squeeze in this project?" becomes
  - Sure, in what time slots?
  - I.e., if this new project is high priority, what other projects is it going to displace?
- Easy for administrators to guide the process

From the developers' side

- Developers love it: it gives them more control and more clarity
  - They get to weigh in directly
    - Timeslot estimates
    - Help put together the schedule
  - They know what's coming up
    - Helps them to manage their own time
  - Makes it easy to have conversations about
    - Who has what on their plate
      - Balanced task distribution
      - Including exciting projects vs. less exciting
    - Make sure no one's plate is too full

Projects chunked up in phases

- Works best with projects chunked up into smaller stand-alone phases
  - Makes it easier to be flexible and move projects around according to priorities
  - Great, since congruent with Agile PM philosophy

- Questions?
- Delphine Khanna: delphine@temple.edu

Thank you!