



DO LESS, ACCOMPLISH MORE:  
STRATEGIES FOR DEALING  
WITH CAPACITY AND DEMAND

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# DESCRIPTION

IT is ubiquitous at the University – every new initiative or business improvement comes with its own app, feature request, and website. Demand for IT services continues to grow while capacity and resources remains the same, or even shrinks. To succeed, IT managers need to take a step back and rethink their service model. IST's web development group has learned to focus on what matters by standardizing and simplifying services, slowing down, and listening to their clients. This session will highlight strategies to effectively manage capacity and demand, including how to determine your average velocity and stick to it, manage expectations, communicate priorities and timelines, and use advisory and steering committees, as well as feedback systems, to help guide your work through client-driven decision making.



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**DIVEST, REINVEST, DIFFERENTIATE**



“**Divest** technical encumbrances such as custom infrastructure that has become a commodity in the market, idiosyncratic processes that are expensive to automate, and redundant and nonstandard data and systems...

**Reinvest** in the IT workforce and in the IT organization to best plan, manage, and optimize the technology assets and services of the institution...

**Differentiate** the institution by making technology investments in its most strategic priorities. Translate what is most distinctive about the institution’s mission into the rapidly developing new technology-enabled paradigms.”

- *Educause Top Ten IT Issues of 2016*

<http://www.educause.edu/research-and-publications/research/top-10-it-issues>



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# DIVEST

- Avoid custom infrastructure, features, design
  - » Maintenance nightmare
- Standardize your services
- Simplify overly complex systems and processes
  - » Automate where possible
- Sunset service offerings that are not heavily used
- Focus your effort on the highest priority initiatives that have the greatest impact
- Offer a few excellent services, rather than many mediocre services
- Simple is better
- Less is more



# REINVEST

- People are your greatest asset
- Hire good people, and get out of the way
- After divesting of services with low ROI, invest in the few services that matter



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# DIFFERENTIATE

IT as a strategic differentiator to enhance UW's culture and strategic plan

How do your IT initiatives align with the University's strategic plan?

How are you contributing to our reputation as Canada's most innovative university?



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# WCMS CASE STUDY





# EXECUTIVE SUMMARY

## **Problem Statement:**

- Our current backlog of requests and scheduled projects exceeds our capacity to be able to fulfill the requests.
- Some difficult decisions had to be made.

## **Action Plan:**

- We have assessed all of the work currently residing in our WCMS backlog.
- Developed a plan to manage our current capacity constraints.

## **Summary:**

The following slides provide an overview of:

- Current state of the WCMS backlog and intake process
- The Management plan for the remainder of 2016
- The impact of the plan on University of Waterloo

Web Advisory Committee, July 20, 2016



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# WCMS BACKLOG

- According to RT Stats, WCMS is the most requested service in IST
- 547 'new'
- 67 'open'
- 7 'stalled'
- 621 total unresolved requests
- Tickets up to 5 years old
- Does not include all upcoming project work

Web Advisory Committee, July 20, 2016



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# SERVICE CHANGES EFFECTIVE IMMEDIATELY

- To address our backlog and complete already scheduled projects, we will not be accepting new requests until further notice.
  - » bug reports ok ;)
- Drupal 8 is around the corner and will be a significant change, it doesn't make sense technically or strategically to fulfill more requests until after Drupal 8 migration is under way in 2017.
- A new process for managing feature requests will be developed.
- We will re-evaluate in January 2017

Web Advisory Committee, July 20, 2016



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# ESCALATED PRIORITIES

- Escalations for requests deemed “business critical” will be assessed for impact to our current WCMS capacity
- Accepting a new work request will result in the delay / cancellation of work already scheduled
- Criteria for those decisions will be reviewed and approved at that time

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# RT CLEANUP

- Close all open RTs that are over 1 year old.
- Close all open RTs only related to non-responsive
  - » 1.x is now deprecated and unsupported, beyond security fixes
- Close all open RTs that are for custom design or development
  - » We do not have the resources or capacity to do custom development for individual sites
  - » Design direction is provided by University Relations

Web Advisory Committee, July 20, 2016



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# DEVELOPMENT OPTIONS

- **Contribute to the WCMS**
  - » Code available on [git.uwaterloo.ca](https://git.uwaterloo.ca)
  - » We encourage development from other groups
- **Fund a contract or co-op**
  - » If you have many requests, consider budgeting for a contract staff member or co-op to work on the WCMS
  - » They can co-locate with the WCMS development team, but work exclusively on tasks prioritized by you.

Web Advisory Committee, July 20, 2016



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# PLAN BETTER: ESTIMATING WITH STORY POINTS

“It is better to be roughly right than precisely wrong.”  
– John Maynard Keynes



# ESTIMATING TASK COMPLEXITY

- Find the smallest user story and assign it a value of 1
- Find a medium-sized story and assign it a 5
- Then as a group assign all remaining stories a value between 1 and 10 based upon their relative complexity and risk to the other stories
- E.g. Anything twice as complex as a 2 is a 4
- Don't overthink it





# ESTIMATING TASK COMPLEXITY CONT'D

- The more ambiguous the user story, the higher the estimated story point.
- Make stories as granular as possible, which results in more accurate estimates.
- If you have a 6-10, can be it broken down into smaller items?
- Studies show we are good at distinguishing between simpler levels of complexity.
- Aim for stories between 1-4 – will increase accuracy of your estimates.



# PLANNING POKER

- Facilitator reads user story and notes
- Team can ask questions and discuss intricacies
- Everyone votes
- If there are wide differences, discuss
- Vote again
- Repeat until consensus by whole team



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# VELOCITY

A measure of the team's rate of progress. Calculated by summing up the number of story points that the team completed in its most recent iteration.

If a team regularly completes ~80 story points per sprint, we can assume they can do 80 again.



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# SCHEDULE PROJECTS BY VELOCITY

- Story point the backlog for a project.
- Divide the point total by average velocity to get the number of sprints required to complete.
- Map pointed user stories to sprints.
- You now have a release plan, project schedule and timeline for your project, based on average velocity.



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# BUILDING THE RELEASE PLAN

- Plot the sprints on a calendar with real project start dates to get a realistic view.
- For high-risk, high-uncertainty projects with a firm end date, leave a couple sprints at the end to account for:
  - » Scope increase
  - » Technology challenges/testing/bug fixes
  - » Poor team performance (life happens – vacation, sick days, etc.)
- Create buffers around high-risk projects



# WHY VELOCITY WORKS

- Velocity works for planning because it doesn't matter if your estimates are accurate, just that they are consistent.
- With consistent estimates, measuring velocity allows us to prepare a more accurate schedule.
- You can use historical values to estimate new projects and forecast future work
- It's iterative – you can update your schedule based on actuals.



# PORTAL APP CASE STUDY



# PROJECT TIMELINE

- Jan. 6
  - Kickoff/Finalize Requirements
- Jan. 11 – 29 – Sprint 1
  - Base Implementation
  - Review with SSO
- Feb. 1 – 19 – Sprint 2
  - Base Implementation
  - Review with SSO
- Feb. 22 – Mar. 11 – Sprint 3
  - Feature Development and Design
  - Functional Testing
  - Review with SSO
- Mar. 14 – Apr. 1 – Sprint 4
  - Feature Development and Design
  - Functional Testing
  - Review with SSO
- Apr. 4 – 22 – Sprint 5
  - Feature Development and Design
  - Functional Testing
  - Review with SSO
- Apr. 25 – May 13 – Sprint 6
  - Feature Development and Design
  - Functional Testing
  - Review with SSO
- May 16 – June 3 – Sprint 7
  - Feature Development and Design
  - Functional Testing
  - Review with SSO
  - **Prototype ready for User Testing!**
- June 6 – 24 – Sprint 8
  - Functional Testing
  - Usability Testing
  - User Acceptance Testing
  - Non-Functional Requirements
- June 27 – July 15 – Sprint 9
  - Functional Testing
  - Usability Testing
  - User Acceptance Testing
  - Non-Functional Requirements
  - Development based on testing feedback
- July 18 – Aug. 5 – Sprint 10
  - Functional Testing
  - Usability Testing
  - User Acceptance Testing
  - Non-Functional Requirements
  - Development based on testing feedback
- Aug 8 – 26
  - **Launch!**





# PORTAL APP ROLL OUT PLAN

## Alpha (invite only) - **Early May**

- » Primarily internal testing, just to get it into people's hands and on their devices
- » Roughly 15 users to start, IST and SSO
- » Android, iOS, and BlackBerry
- » BlackBerry just to try out. Might end up dropping support. Very much dependent on the Android capabilities of a BlackBerry device.

## Closed Beta (invite only) - **Late May**

- » Fluid continuation of Alpha testing, but more users
- » Capped at roughly 100 – 150 users
- » Students from consultation groups (May 31, June 8/9)
- » Hackathon attendees
- » Stakeholders/committees
- » Android, iOS, and BlackBerry
- » Decision whether to drop BlackBerry or not can continue into Closed Beta testing, but will be made in this phase.

## Open Beta - **Late June**

- » Feature freeze
- » Continue consultation groups
- » Market Beta access to attract more testers
- » Prep for release marketing and communications
- » Access granted via an Opt-In link
- » No cap

## LIVE

## Soft Launch - **Mid August**

## Hard Launch – **End of August**

- Integrate into Orientation package
- Open and fully available from iOS and Play stores



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COMMUNICATE BETTER



# DEVELOPMENT ROADMAP

- Our plan to achieve short and long term goals
- Transparency; developing in the open
- Forecast and coordinate developments

## Web development roadmap

This page lists development roadmaps for our sprints. We believe in developing in the open as much as possible and hope that this is helpful for you, our clients to understand our workload, commitments, timelines, priorities, etc. We appreciate your support and welcome your [feedback](#).

### Current sprint

[Dave \(Oct 26 - Nov 13\)](#)

### Future sprints

- [Nov 16 - Dec 4](#)
- [Dec 7 - Dec 23](#)
- [Jan 4 - Jan 22](#)
- [Jan 25 - Feb 12](#)

### Previous sprints

#### 2015

- [Carly \(Oct 5 - Oct 23\)](#)
- [Billy \(Sep 14 - Oct 2\)](#)
- [Athena \(Aug 24 - Sep 11\)](#)
- [Zelda \(Aug 3-21\)](#)
- [Yves \(Jul 13 -31\)](#)
- [Xena \(Jun 22 - Jul 10\)](#)
- [Wesley \(Jun 02 - Jun 19\)](#)
- [Veronica \(May 12 - Jun 01\)](#)
- [Ulysses \(Apr 21 - May 11\)](#)
- [Tabitha \(Mar 31 - Apr 20\)](#)
- [Seamus \(Mar 10 - Mar 30\)](#)
- [Raquel \(Feb 25 - Mar 9\)](#)
- [Quentin \(Jan 26 - Feb 17\)](#)
- [Penelope \(Jan 6 - Jan 19\)](#)

#### 2014

- [Odin \(Nov 21 - Dec 15\)](#)

## Dave: Oct 26 - Nov 13

### Epics:

- Responsive Faculty, Departments, Schools, and Units (FDSU) theme
- Infrastructure Improvement

### New Features:

- Improved call to action content
- Make header layout responsive
- Make site homepage banner responsive
- Move listing type page filters into tabs in the header
- Make homepage listing content types responsive
- Make global footer layout responsive
- Global content styling changes
- Blockquote styling changes
- Make local footer responsive
- Make news, events, blogs, etc. responsive
- Make services responsive
- Make tables responsive
- Make image galleries responsive

### Bugs, fixes and improvements:

- Make images in timeline have alt text
- In Tutor Connect, allow tutors some formatting options for additional information

### Releases:

- Virtualized database

<https://uwaterloo.ca/web-resources/wcms-users/features-functionality/development-roadmap>



# 3 YEAR PLAN

## Client Services three-year plan (2015-2017)

*Last updated on November 25, 2016*

This plan summarizes major initiatives that are planned in Information Systems & Technology (IST) Client Services from January 2015 through December 2017. There are four units in Client Services: Service Desks, Web Development, Training/Licensing/Communication, and Customer Relations and Support. This plan was a collaborative effort with the four Client Services managers and the Client Services Director, and in consultation with all Client Services staff. Some initiatives span across multiple Client Services units.

### Current highlighted initiatives

Some of the following initiatives were started in 2016, some are now in production, and others will be finished in 2017.

1. UW Portal Mobile App (in production).
2. Waterloo Photos (in production).
3. SharePoint Adoption, Governance and Support Investigation.
4. Student Email in the Cloud using Office 365.
5. Open Scholar.
6. Improve IST Service Catalogue searching capability.
7. Migrate WCMS sites into responsive.
8. Switchboard Replacement Project.
9. Implement Qualtrics.
10. Implement Drupal 8.
11. Implement new evote system.

<https://uwaterloo.ca/information-systems-technology/about/organizational-structure/client-services/3-year-plan>



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# STEERING AND ADVISORY COMMITTEES

- UCIST – Associate Deans of Computing
- CTSC – IT Directors
- Web Steering Committee – Decision-making group for web
- Web Advisory Committee – web stakeholders throughout the University
- Project steering committees
- PDAG – IT Seminars

Present and provide status updates at as many venues as possible, receive feedback, iterate



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WORK BETTER



# THE COST OF INTERRUPTION

Are you lonely?

Tired of working on your own?

Do you hate making decisions?

**HOLD A MEETING!**

*You can —*

- See people
- Show charts
- Feel important
- Point with a stick
- Eat donuts
- Impress your colleagues

All on company time!



**MEETINGS**

THE PRACTICAL ALTERNATIVE TO WORK



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# Meeting Cost



→ Duration

→ Total Attendees

→ Estimate salary for **PERSON 1**

Higher ▶


\$20K	\$30K	\$40K	\$50K
\$60K	\$70K	\$80K	\$90K
\$100K	\$110K	\$120K	\$130K


↗ Share this tool

Salaries multiplied by 1.4 to account for benefits

# Meeting Cost



Stop the madness! Make it cheaper. 

Share the cost of this meeting 

↗ Share this tool

↻ Start over

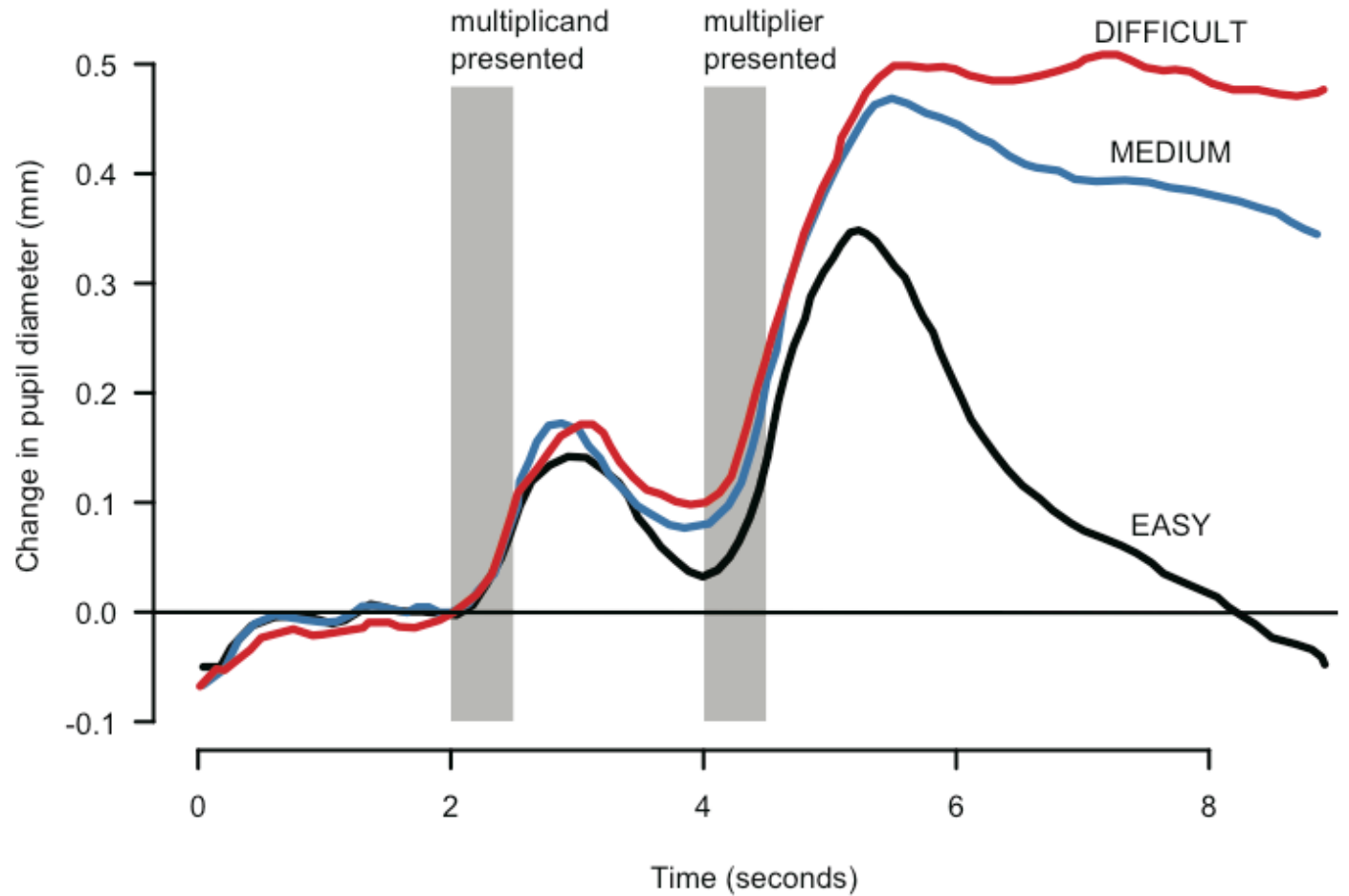
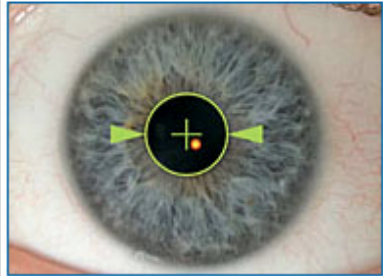
<https://hbr.org/2016/01/estimate-the-cost-of-a-meeting-with-this-calculator>



# THE COST OF INTERRUPTION

- An interrupted task is estimated to take twice as long and contain twice as many errors as uninterrupted tasks ([Czerwinski:04](#))
- Typically takes programmers at least ~15 minutes to get back in the 'zone' after interruption ([vanSolingen:98](#))
- A programmer is likely to get just one uninterrupted 2 hour session in a day ([Parnin:10](#))





<http://blog.ninlabs.com/2013/01/programmer-interrupted/>



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# WORST TIMES TO INTERRUPT A PROGRAMMER

- Research shows that the worst time to interrupt anyone is when they have the highest memory load. ([Iqbal:04](#))
  - » During an edit, especially with concurrent edits in multiple locations.
  - » Navigation and search activities.
  - » Comprehending data flow and control flow in code.



<http://blog.ninlabs.com/2013/01/programmer-interrupted/>

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# FLOW

- State of focus where everything clicks and happens smoothly
- In the zone
- Increase state of flow by making work more like play
- Decrease distractions
- Study on programmers being interrupted, takes 15 minutes to get back into flow



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# MOTIVATION

- Drive by Daniel Pink
- Motivation 1.0 – survival
- Motivation 2.0 – external rewards and punishments
- Motivation 3.0 – intrinsic motivation



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# MOTIVATION 3.0

- **Autonomy** – the desire to direct our own lives.
- **Mastery** – The urge to get better and better.
- **Purpose** – The service of something larger than ourselves.

“By neglecting the ingredients of genuine motivation — autonomy, mastery, and purpose — they limit what each of us can achieve.” (p. 49)



Drive by Daniel Pink

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# 80/20

- Fridays - people can work on whatever they want - be it a bug in their product, a side project, something fun, experimental
- Monday - the whole team gets together and they demo what they came up with
- Work is meant to be fun
- Your people are experts in their areas, trust them



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The logo for WatITis, featuring the word "WatITis" in a bold, black, sans-serif font. The "I" is replaced by a red arch that spans over the "T".



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# SUMMARY

- Divest, Reinvest, Differentiate
- Estimate with story points, not time
- Use average velocity to provide more accurate timelines
- Communicate and ask for feedback in many different venues
- Less meetings, better communication tools
- Interruption is expensive
- Make work fun and interesting
- Don't micromanage, trust your people
- Maximize flow state
- 80/20

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