

TALKS.UW – ALL TALKS ON CAMPUS

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Executive summary

Definition

Talks.uw is a proposed online calendar platform that shows all talks happening around UW campus. In addition to the main calendar it offers advanced search functionality, with info accessible by title, speaker, series, department, theme or any combination of these parameters. Talks.uw makes finding or communicating speaker events a lot easier. It is designed to incorporate the current system of email, with subscription links to relevant email lists. It expands on that system by featured content, list view, calendar views and Google Maps integration. UW netID verification makes the system as secure as any other UW site. Future updates include a talks.uw calendar plugin for department websites, and the opportunity to download individual talks to your personal calendar. By creating greater visibility of all talks happening on campus, talks.uw hopes to cultivate the exchange of ideas both on campus and within UW's wider community.

What I did

As part of my 10-week capstone project, I researched how talks are currently communicated at the University of Washington. I met with all parties involved and designed and developed an appropriate, user-centered solution. The document before you is my final report on that system, called 'Talks.UW'.

- **Research.** I conducted a user study on campus, asking graduate students and staff about the mechanisms they use for finding out about talks. I gathered responses through individual semi-structured interviews, followed by a campus-wide survey. Results show the UW community is very engaged in intellectual debate, however researchers are generally unfamiliar with talks happening outside the department. The present system, department email, is prone to cause information overload.

More information in Milestone 1 (p3)...

- **Design.** I designed a number of low fidelity prototypes, with iterative user testing. This user feedback allowed for a continuous refinement of the prototype. This process accumulated into a high fidelity online prototype.

More information in Milestone 2 (p3)...

- **Development.** The talks.uw system was developed specifically for a native UW server environment. The final version was released in May 2014. Preliminary usability testing showed high user satisfaction, with some ideas for future updates.

More information in Milestone 3 (p3)...

Current status

Submitted as an implementation proposal to the office of the President and UW IT services (06-2014)

Introduction

At the University of Washington many of the amazing staff and students regularly give talks about their work and other activities. However, there is nowhere to go to find out what talks are going on, other than the departmental notice board, plastered with posters, many of them out of date. Department emails hold an important role in informing students and staff of upcoming talks. Yet while this method works great within departments, it fails to reach people outside the department. Failing to reach interested colleagues represents a missed chance for interdisciplinary collaboration. **A campus-wide resource for talks would solve this problem**, by making talks visible to the whole campus. A coordinated system creates added value to all parties involved. Administrators find it faster and easier to use, while researchers gain a larger and more diverse professional audience. The real power of such a system is syndication: bringing the talks to people who want to attend them.

Many world-renowned universities have been using a similar system for years. The University of Cambridge for example uses a system called ‘Talks.cam’. Launched in 2005, the system lists more than 10,000 talks receiving hundreds of hits every day from all over campus [1]. Since its conception it has become an important part of the university’s infrastructure. Similar examples already exist for universities in the US, such as Stanford [2] and the UC San Diego [3].

Communicating all the work happening on campus is a core duty of the university. It also remains a continuous challenge, as voiced by UW president Michael K. Young (2014):

“The UW has an amazing array of resources—health, arts, culture, science, athletics, and more. Right now it can be hard to access all that makes this place great because of information overload. It is also challenging to connect with people who share similar interests, but work in different parts of the University.” [4]

Finding a way to bring those people together benefits the UW as a whole. It inspires the interdisciplinary exchange of ideas, fosters collaboration. It is these interactions that inspire true innovation. A talks platform also helps to keep alumni, partners and industry informed of what goes on at UW. It offers a great opportunity to work towards many of UW’s strategic goals.

This document is divided in three parts. Each deals with a different phase of my capstone development process, culminating in three individual milestones. These parts respectively involve research, design and development of the talks.UW platform.

What is capstone?

The capstone experience of the program Human-Centered Design and Engineering (HCDE) is intended as an opportunity for students to demonstrate their comprehensive skills as researchers, designers, and engineers. The goal of the course is for students to synthesize and apply the knowledge and techniques they have acquired throughout the HCDE MS program in creating

solutions to human-centered problems in society. Students form teams that are tasked with investigating and defining a problem and will craft a solution to that problem. Problem domains may be suggested by external sponsors, the instructor, or the student teams. Projects are meant to touch on at least two of the sub-disciplines of human-centered design: user research, ideation, prototyping, implementation, and evaluation.

What is Talks.UW?

Talks.uw is a proposed online calendar platform that shows all talks happening around UW campus. In addition to the main calendar it offers advanced search functionality, with info accessible by title, speaker, series, department, theme or any combination of these parameters. Talks.uw makes finding or communicating speaker events a lot easier. It is designed to incorporate the current system of email lists, with subscription links to relevant lists. It expands on the current system by featured content, list and calendar views and Google Maps integration. UW netID verification makes the system as secure as any other UW site. Future updates include a talks.uw calendar plugin for department websites, and the opportunity to download individual talks to your personal calendar. By creating greater visibility of all talks happening on campus, talks.uw hopes to cultivate the exchange of ideas both on campus and within UW's wider community.

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As part of my capstone project, I researched how talks are currently communicated at the University of Washington. I met with all parties involved and designed and developed an appropriate, user-centered solution. The document before you is my final report, divided in three parts.

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Study Overview

Based on preliminary meetings with UW staff members and student advisory council, I outlined the following goals and research questions. I also conducted an expert heuristic review on talks.cam (University of Cambridge), which served as a baseline to identify the areas of focus for the first user interviews.

Goals

1. Investigate talk attendance, audience diversity and people's motivations for attending talks.
2. Evaluate the use and effectiveness of current methods
3. Better understand and quantify the desired features for a new dedicated system
4. Provide actionable recommendations for such a system.

Research Questions

1. How often are talks attended?
2. In what capacity are talks typically attended? (Voluntary?)
3. How familiar are people with talks happening inside/outside their department?
4. What media are typically used to find out about talks? Which is the primary medium?
5. What are the ways in which this experience can be improved?

Research (Milestone 1)

Process Blog

- De Couck, K. 2014. *Planning*, available from: <http://koendecouck.com/?p=4152>
- De Couck, K. 2014. *Moving beyond interviews*, available from: <http://koendecouck.com/?p=4164>
- De Couck, K. 2014. *Reflection on doing surveys*, available from: <http://koendecouck.com/?p=4178>
- De Couck, K. 2014. *Reporting on UX research*, available from: <http://koendecouck.com/?p=4188>

Presentation

- <http://students.washington.edu/kdecouck/research-presentation.pdf>

Interviews

Methods

I conducted twelve individual, semi-structured interviews at the University of Washington. Interviewees were all graduates or staff members (N = 12): master students (n = 6), PhD (n = 4) and teaching staff members (n = 2). Their professional backgrounds included human-centered design and engineering (HCDE), Computer science (CSE), Information management (iSchool), Mechanical Engineering, Biomedicine and Physics.

The purpose of these interviews was to explore current user practice and needs. Each interview was structured around my five research questions, with significant space for user stories. Users were encouraged to share past experiences and formulate some ideas on desirable alternatives. Finally, users were shown talks.cam (an existing system) and asked for their opinion while they explored the site.

Findings

As expected, user practice and needs varied depending on the user's professional status. Master student reported less overall engagement in attending talks, except when there was a direct relation with classes and course requirements. PhD students and staff commented more towards spontaneous engagement, nearly all of which limited however to within their department.

Department emails were consistently named by all interviewees as their primary way to stay informed of interesting talks happening on campus. This communication over email however was seldom coordinated, with most interviewees complaining of information overload:

"I receive a large number of updates on other department's seminars a few times a week. It would be great if students and faculty could receive a mass digest of talks of interest instead of receiving multiple emails." – A. (Department of Biomedicine)

All interviewees were positive and interested in the idea of a dedicated talks platform. Different interviewees stressed different aspects of such a platform. One interviewee remarked how he was more likely to attend a talk if he knew free food would be provided. Two other interviewees remarked on their habit to check whether a video stream is available, so they can watch the talk at their leisure and avoid a special trip to campus. Most of the user needs however diverged on just a few core aspects: what, when, where. In addition some background would generally be requested about the speaker himself, the organizer or the talk series in which the talk was featured.

Half of all participants also mentioned key words, as quick way to judge interest and relevance of a talk.

All users expressed a desire for more control over the talk announcements they get exposed to. This issue again referred to information overload. User suggestions included digests or filters to limit the amount of email. One user compared a proposed talks platform to already existing calendars (i.e. the UW event calendar). When asked why she didn't like those calendars, she voiced how for her user control is a highly valued aspect, used in avoiding information overload:

"I don't want things cluttering my schedule. I will create a calendar event myself if I'm interested in attending a talk. I don't like how many of the existing calendars force all of that unwanted content on me. There's no option to filter it, so I don't use it"

- E. (Human Centered Design and Engineering)

Interviewees' reactions ranged from cautious interest to direct outward enthusiasm. Staff members in particular commented on the need for such a system. A number of interviewees spontaneously followed up on the interview by emailing thoughts, suggestions and questions about when a talks.uw system could conceivably be tried out.

"It is unbelievable that this University does not have a centralized, searchable, calendar of all talks on campus [...] Not only is it difficult to find out what is going on in other departments, it is hard to inform them of an interesting talk by a guest of mine. It is crazy!"

– M. (Department of Physics)

Survey

Methods

Based on these user interviews, a survey was created directed to all graduates and staff on campus. Respondents were contacted over email, forwarded by graduate advisors and department administrators. These survey questions were meant to provide a more representative view on research questions (Appendix 1). A campus wide, representative sample was obtained (N = 182). From this sample 5 respondents were excluded who identified themselves as undergraduate students (2 juniors, 3 seniors). The remaining respondents were master students (n = 40), PhD's (n = 67), teaching staff (n = 34) or staff support members (n = 36). Sample representativeness can be judged from the distribution by college in appendix 2.

Findings

In line with the interview results, there seems to be a large spread amongst people's attendance to talks. Interviewed master students reported a lower attendance than PhD or faculty ($t = 3.5$, $p < .001$). Most people attend a talk one or two times per week (Fig. 1).

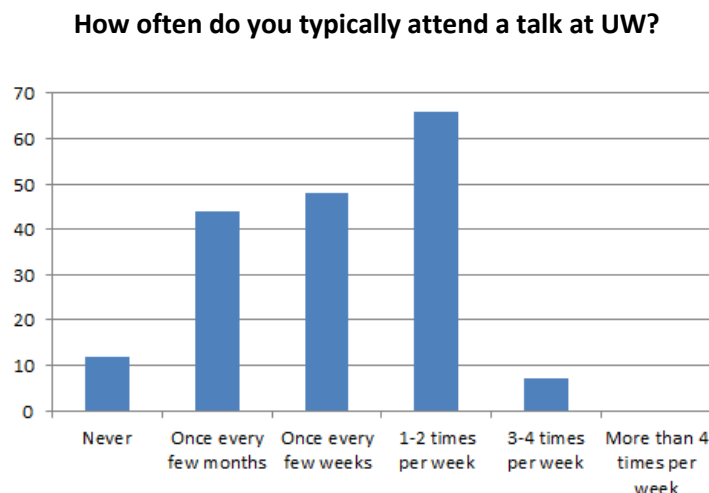


Figure 1. Self-reported talk attendance

We also measured users' motivation for attending. UW members are sincerely interested in intellectual debate. In line with user interviews, a majority of people indicate they love exploring interesting talks that make them re-think their own professional practice or enhance their work. Many of them regularly attend talks.

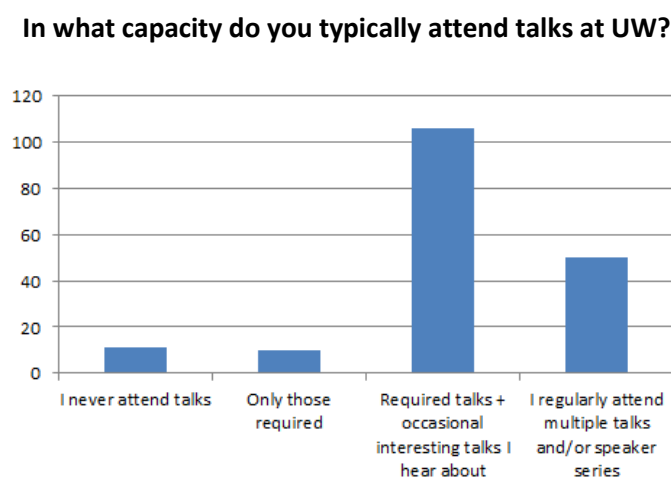
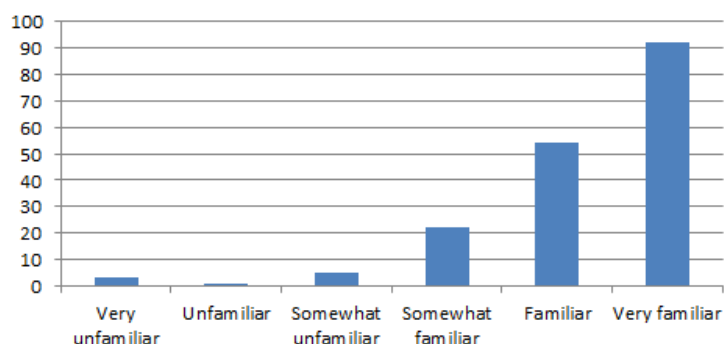


Figure 2. Self-reported user motivation

However, many respondents experience difficulty of keeping track what happens on campus, or getting the word out about limited time opportunities from their own department. As seen from figure 3, communication within the department is very efficient with most people very familiar with

upcoming talks. That picture shift drastically when asked about talks happening at different departments.

How familiar are you with the regular talk series organized inside your own department?



How familiar are you with the regular talk series organized outside your own department?

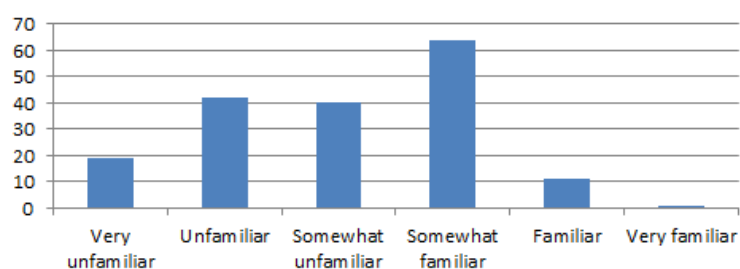


Figure 3. Familiarity with talks within the department (top) and outside the department (bottom)

The next part of the survey concentrated on investigating the means people used to stay informed about talks. As expected, department emails were the predominant source of information across all colleges. The next source of information was either emails by individual faculty members or word of mouth. Notice how less than 10% of respondents take notice of the university existing efforts, UW calendar or the recent Whole U initiative (Fig 4).

I was interested to see both what media respondents were aware of (and might sporadically use), and the respective dominance of one medium over another. Notice how drastically the results change depending on how the question is phrased. Figure 4 represents every means people use.

How do you usually find out about talks happening at UW?

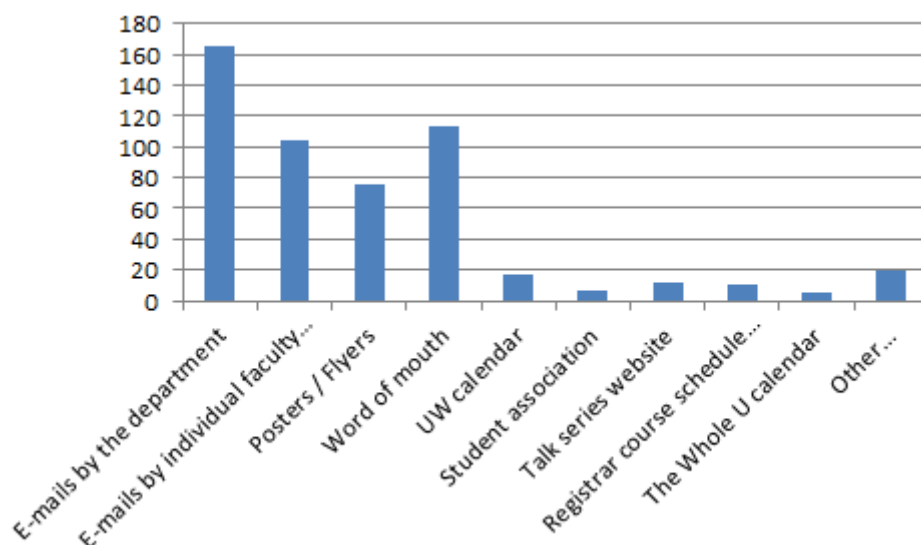


Figure 4. Communication about talks at the University of Washington (all media)

Department emails are clearly the most important source, with significant contributions from individual emails, posters, flyers and word of mouth. However when we ask people about their primary means of finding this information, this picture looks somewhat different (Fig. 5):

How do you usually find out about talks happening at UW?

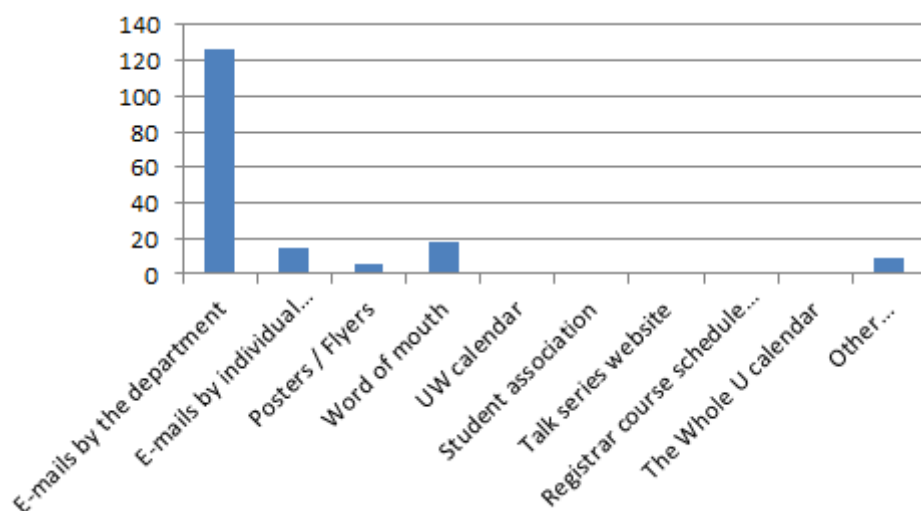


Figure 5. Communication about talks at the University of Washington (primary medium)

Finally I was interested to get feedback on the different features suggested by users during the initial exploratory interviews. More specifically, I wanted to know which deserved priority in the following design and development stage of the project. Users were provided with six featured which had to be ranked in order of importance. Essential functionality such as communicating topic, place and time was deliberately left out. This was done because users were expected to rank those highest anyway,

and human comparative judgment becomes less accurate when dealing with longer ranking lists. The six features, rated by users in order of decreasing importance were:

1. Key words
2. Speaker Biography
3. Organizer
4. Information on the talk series
5. Free food provided
6. Videostreaming availability

User rankings varied significantly, with varying levels of agreement depending on each feature.

Therefore, I also investigated the distribution for each feature separately. While some features such as 'videostreaming availability' are clearly low priority items, other features such as 'information on the talk series' were split with some users ranking at as very important or not important at all (Appendix 3). These levels of agreement are important to keep in mind during the following design phase, when asking for individual feedback.

Design (Milestone 2)

Process Blog

- De Couck, K. 2014. *Early designs*, available from: <http://koendecouck.com/?p=4237>
- De Couck, K. 2014. *Final design*, available from: <http://koendecouck.com/?p=4242>

Presentation

- <http://students.washington.edu/kdecouck/design-presentation.pdf>

Methods

I performed rapid iterative testing on several low fidelity prototypes. This step of the capstone process was meant to explore different possible user interfaces that meet the user's expectations and needs. I used a technique called paper prototyping, which involves creating rough, even hand-sketched, drawings of an interface to use as models of a design.

Paper prototypes have the benefit of saving time and money. It allows you to rapidly respond to user suggestions by easy modification of the design, making it very useful as an early design tool. Another benefit of paper prototyping is that users feel more comfortable being critical of the mock up because it doesn't have a polished look yet.

Design 1

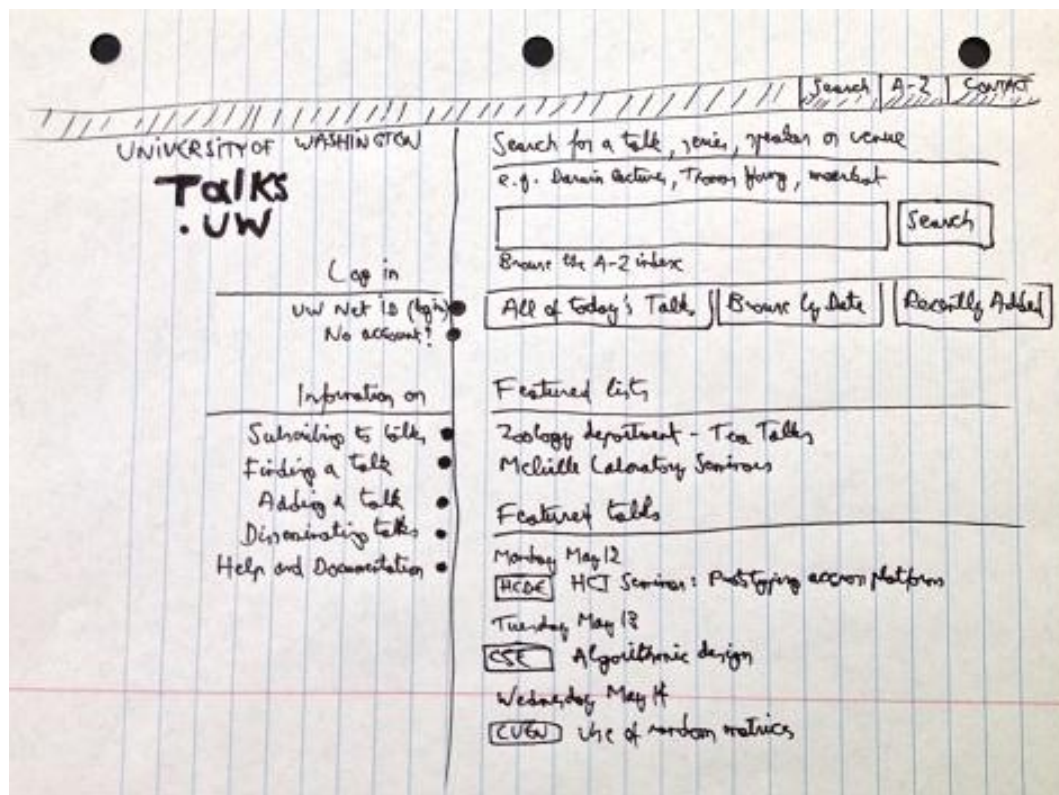


Figure 6. The first iteration prototype. This design is heavily based on the talks.cam model, as used by the University of Cambridge.

- Prominent logo
- Accessible search bar
- Featured content

There are two navigational items: a side menu on the left, and secondary menu on top. I showed it to users and refined the design based on their feedback.

Design 2



Figure 7. The second iteration

The second iteration eliminates the side menu in favor of just a top menu structure. I also researched the house style of my client (the University of Washington) and adjusted the design accordingly.

- two top menu's (one of which required by the house style)
- institution logo, in addition to the product name
- Dual search functionality (either by clicking 'search events' or the prominent green button')
- copyright footer

Design 3

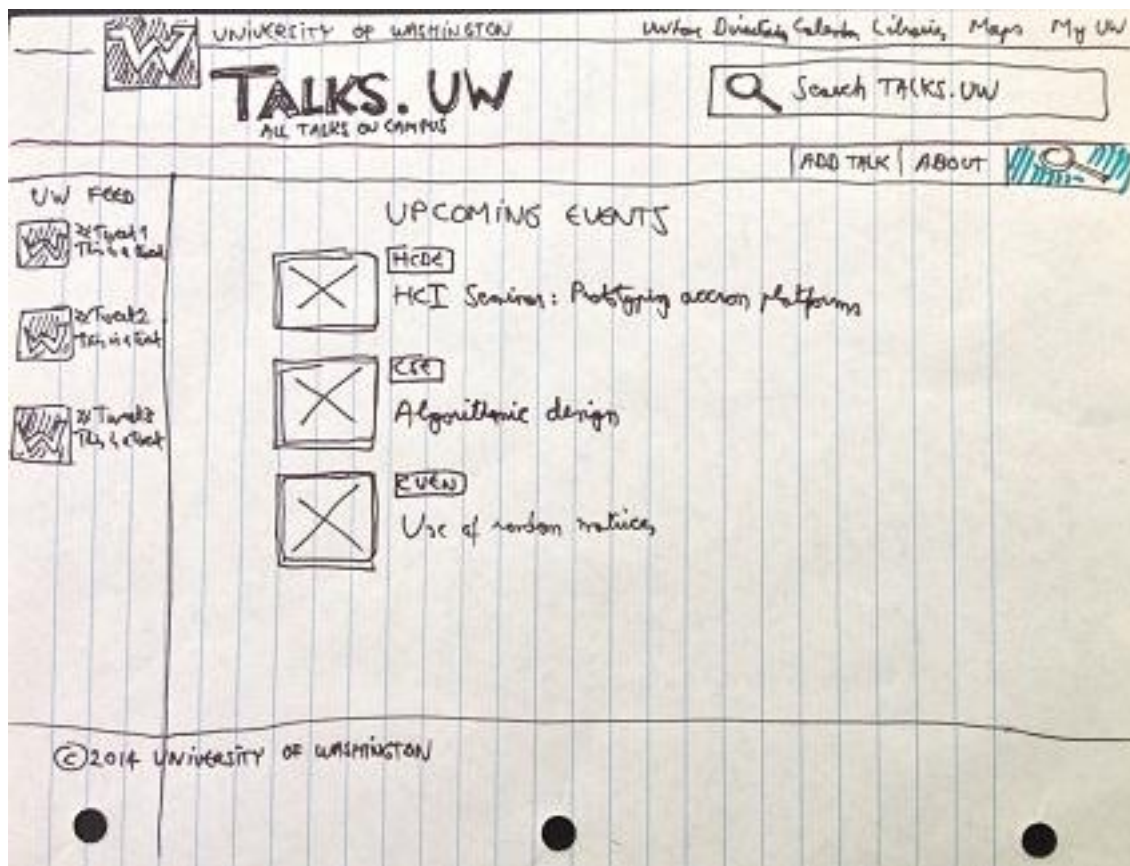


Figure 8. The third iteration

The third iteration changes the landing page to once again show featured content. The search fields corners are again straight in accordance to the other elements on the page. The real estate space on the left is put to better use by hosting the client's twitter feed. A twitter feed integrates nicely with this product, which after all aims to depict an active, vibrant community.

Design 4

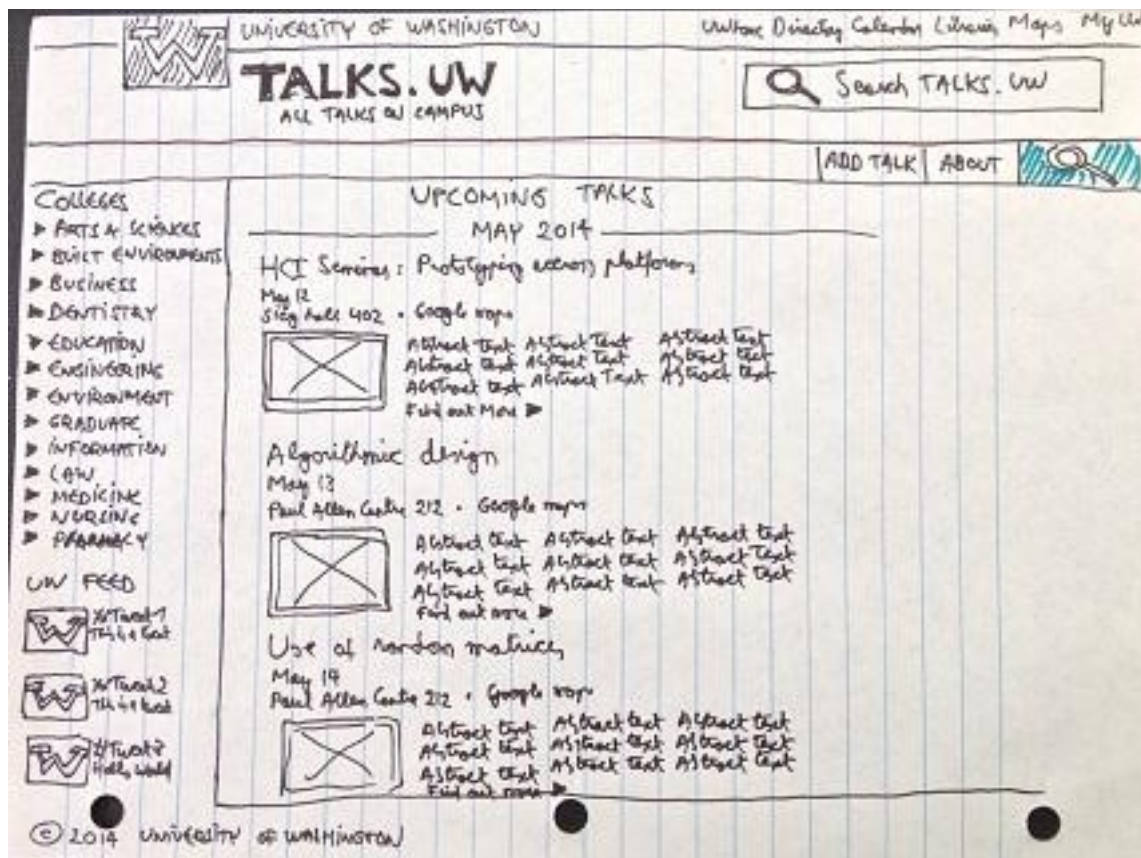


Figure 9. Final iteration before moving to high fidelity online prototype.

The final iteration introduced the college sidebar, allowing users to quickly limit their search to specific departments. It also provides users another means for exploring potential fields of interests; many users are unaware of all what departments exist within a college. This alternative path also allows users to search on something other than key words. It aids in visualizing the UW college structure that hosts the talks into one consistent entity.

Low fidelity prototyping was then followed by the development of a **high-fidelity online prototype**. Because of the time constraint associated with this project, I decided to forgo dedicated high fidelity prototyping tools and use early development builds instead. The advantage was that I was able to quickly correct problems as they developed, with those changes carrying over in the final product itself (instead of just a demo).

Development (Milestone 3)

Process Blog

- De Couck, K. 2014. *Red gem of developers*, available from: <http://koendecouck.com/?p=4222>
- De Couck, K. 2014. *Development after seven days*, available from: <http://koendecouck.com/?p=4250>

Presentation

- <http://students.washington.edu/kdecouck/>
- <http://students.washington.edu/kdecouck/talks.uw.zip> (repository file)

Notable features

- Search by topic, department, date
- Interactive department calendars
- Show events as list/ per month
- Google maps integration
- UW NetID login for staff
- Animated menu's with UW house style and fade-out effects.
- Responsive design (desktop, tablet and smartphone compatible)



Figure 10. The talks.UW landing page (as of May 2014).

The current version of Talks.UW is 1.0, which is available from the UW student webserver: <http://students.washington.edu/kdecouck/>

Preliminary Usability testing

Goals

I designed and conducted a task-oriented, formative usability study of Talks.UW. My goals for this study were threefold: to investigate the user experience associated with finding a talk of interest; to uncover obstacles that might prevent or inhibit users from finding and acting on this information; and to note evidence-based indications for more features in the future.

Methods

I tested two participants (one master student, one PhD) from two different colleges. I conducted one on-site tests in the University of Washington's Odegaard Library and natural setting test in the participant's office environment. Both participants performed a series of four tasks. I collected data on time-on-task, perceived difficulty and task success rate, along with open-ended feedback via think-aloud protocol. Usability testing was restricted by the capstone timeline: a larger sample or more extensive testing was not feasible.

Findings

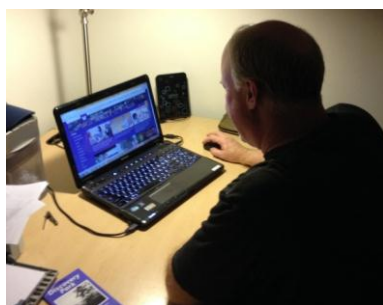


Figure 11. Post-development usability testing

Both users noted high satisfaction with the product, stating that they were 'very likely' to use the platform in the future. They were also 'very likely' to recommend it to colleagues and friends.

One of the remaining obstacles include the featured content on the landing page, which detracts attention from the search functionality. Users also were confused by the double search bars (one as part of the header, the other as expandable content). Even though both search bars accomplish the same result, users felt uncertain that they were using it 'the right way'. Both users also commented on the large amount of scrolling, caused by the relatively large text spacing. This is especially true for tablet and smartphone devices. This is a known issue that was being looked into at the time of the project deadline.

One feature that users felt was missing, was information on video streaming availability (even though survey results had shown that to be a low priority to users). This will likely be included in future versions, along with the ability to download talks to users' own google or apple calendar.

Poster

Process Blog

- Presenting through poster: <http://koendecouck.com/?p=4261>



Figure 11. The talks.UW poster presented at the HCDE Open House poster session (June 2014). This self-made poster details the user-centered process and final product.

Limitations

In closing, the author would like to point out a number of real limitations that shaped the flow of the project. Building a new system for a community of tens of thousands is a huge undertaking. The following are some of the restrictions I ran into while working:

- **Manpower = 1 man.**

This meant that there was limited opportunity to meet with partners (as every hour spent in a meeting meant one less hour of development time). One person also does not have the same abilities as a full development team. Development goes a lot slower when you can only work on one issue at a time... And like any student, I had other courses, readings and class projects to attend to.

- **Time = 9 weeks**

The MS Capstone has a strict 9 week deadline (10, if you count promotion of the project). This capped the amount of time I could spend on research, design and development to about three weeks each. Three weeks is an extremely short turnaround, especially for development work. I believe to have resolved all bugs that I was aware of though.

- **Resources = None**

Talks.UW was developed with no university funding or sponsor support at all. That means the user research budget was not only low, it was non-existent. Without developer access to the official university server, talks.UW was made to work for the common UW student server. Even then, the lack of root access precluded the implementation of many of the more advanced features (such as plug-in functionality for department websites). The choice to still go ahead under these restrictions was made to prove that the platform worked in a UW server environment. It did however mean occasional improvising and macgyvering a solution.

Despite the pressure that this project entailed, I thoroughly enjoyed the challenge. There is a strong reward to making something out of nothing, with nothing but your bare hands, and still end up with a professional quality product. I cherished this opportunity to give back to my university. If UW officials were to decide to follow up on this system, I would be more than happy to lend my support.

Acknowledgements

The author would like to thank everyone who participated in the study and development of this project. My gratitude goes out to all interviewees for giving me their valued time and insight, as well as to all the graduate advisors on campus for helping me reach out to the members of their departments. I'd like to thank prof. Andrew Davidson for his guidance, and teaching assistant Judith Yaaqoubi. It was so nice to hear someone enjoyed my project blog posts.

I also like to thank Lauren Updyke from the university's Whole U initiative for meeting and discussing project implementation with me. Finally, I received a great deal of support from Greg Nelson and the Engineering student advisory council, as well as the office of the Dean.

References

- [1] University of Cambridge. Talk.cam. Available from: <http://talks.cam.ac.uk/> [Accessed June 10, 2014]
- [2] Stanford University. Stanford Event Calendar. Available from: <http://events.stanford.edu/byCategory/2/> [Accessed June 10, 2014]
- [3] UC San Diego . UC San Diego News Centre. Available from: <https://calendar.ucsd.edu/SearchResult.asp?ResultType=Lectures/Seminars> [Accessed June 10, 2014]
- [4] University of Washington, Introducing the Whole UI. Available from: <https://www.youtube.com/watch?v=dJn9Opyo-3M/> [Accessed June 10, 2014]

Appendix 1 - Survey

1. I'm currently registered as a

- ☐ Undergraduate student (Freshman)
- ☐ Undergraduate student (Sophomore)
- ☐ Undergraduate student (Junior)
- ☐ Undergraduate student (Senior)
- ☐ Master student
- ☐ PhD student
- ☐ University staff (non-teaching)
- ☐ University staff (teaching)

2. Affiliated to the college/school of...

- ☐ Arts & Sciences
- ☐ Built environments
- ☐ Business
- ☐ Dentistry
- ☐ Education
- ☐ Engineering
- ☐ Environment
- ☐ Graduate
- ☐ Information
- ☐ Law
- ☐ Medicine
- ☐ Nursing
- ☐ Pharmacy
- ☐ Public Affairs
- ☐ Public Health
- ☐ Social work

3. How often do you typically attend a talk at UW? (Talk = A presentation by a researcher on his/her work)

Never	Once every few months	Once every few weeks	1-2 times per week	3-4 times per week	More than 4 times per week
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4. In what capacity do you typically attend talks at UW?

I never attend talks	Only those required by my program/department	Required talks + occasional interesting talks I hear about	I regularly attend multiple talks and/or speaker series
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5. How familiar are you with the regular talk series organised inside your own department?

Very unfamiliar	Unfamiliar	Somewhat unfamiliar	Somewhat familiar	Familiar	Very familiar
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6. How familiar are you with the regular talk series organised outside your own department?

Very unfamiliar	Unfamiliar	Somewhat unfamiliar	Somewhat familiar	Familiar	Very familiar
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7. How do you usually find out about talks happening at UW?

- ☐ Emails by the department
- ☐ Emails by individual faculty members
- ☐ Word of mouth
- ☐ Posters / Flyers
- ☐ UW calendar
- ☐ The Whole U calendar
- ☐ Talks series website
- ☐ Student association
- ☐ Registrar course schedule website
- ☐ Other...

8. Which is your primary way of finding out about talks at UW? (Check only one)

- ☐ Emails by the department
- ☐ Emails by individual faculty members
- ☐ Word of mouth
- ☐ Posters / Flyers
- ☐ UW calendar
- ☐ The Whole U calendar
- ☐ Talks series website
- ☐ Student association
- ☐ Registrar course schedule website
- ☐ Other...

9. You've found a talk you're interested in. Rank the following features in order of what determines your decision to attend.

- ☐ Free food provided
- ☐ Speaker biography
- ☐ Organizer (department, campus service)
- ☐ Videostreaming availability
- ☐ Key words
- ☐ Information on the talk series

Appendix 2 - Survey sample representation

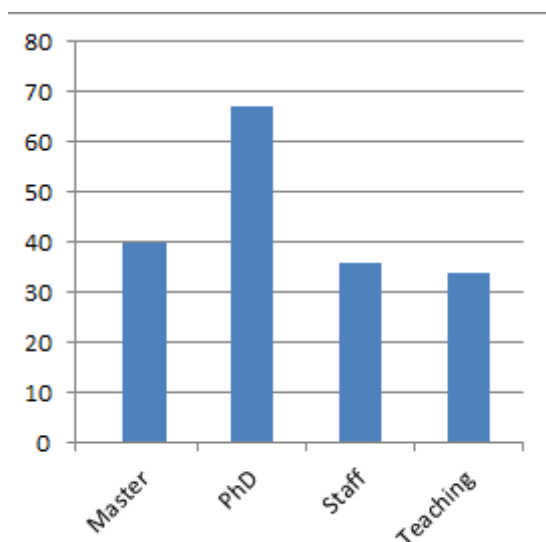


Figure 12. Sample breakdown by current position

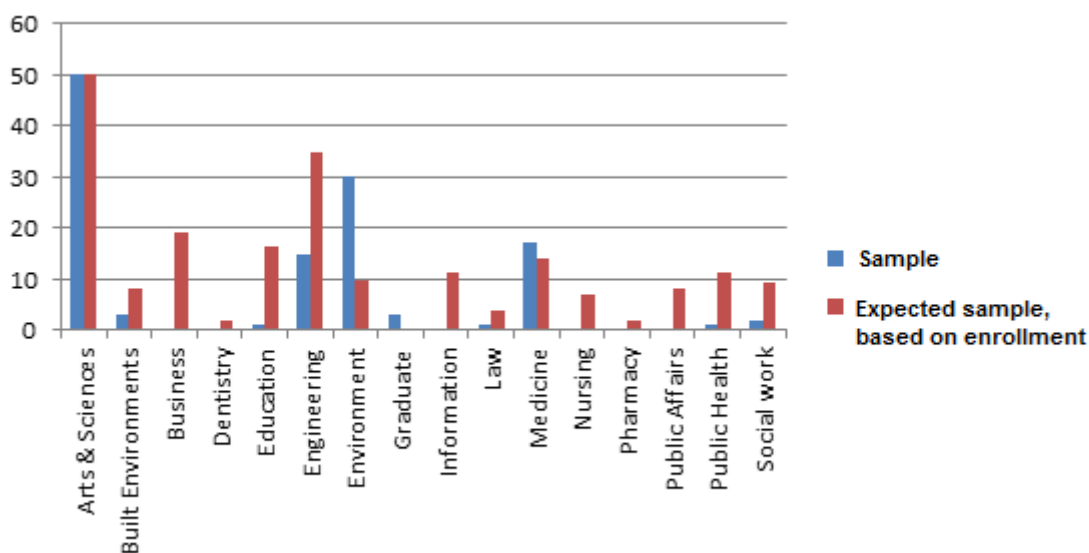


Figure 13. Sample breakdown by college (blue), as compared to an expected distribution based on student enrolment (red). Some differences are to be expected since some colleges chose not to share the survey with students.

Appendix 3 - Feature priority agreement

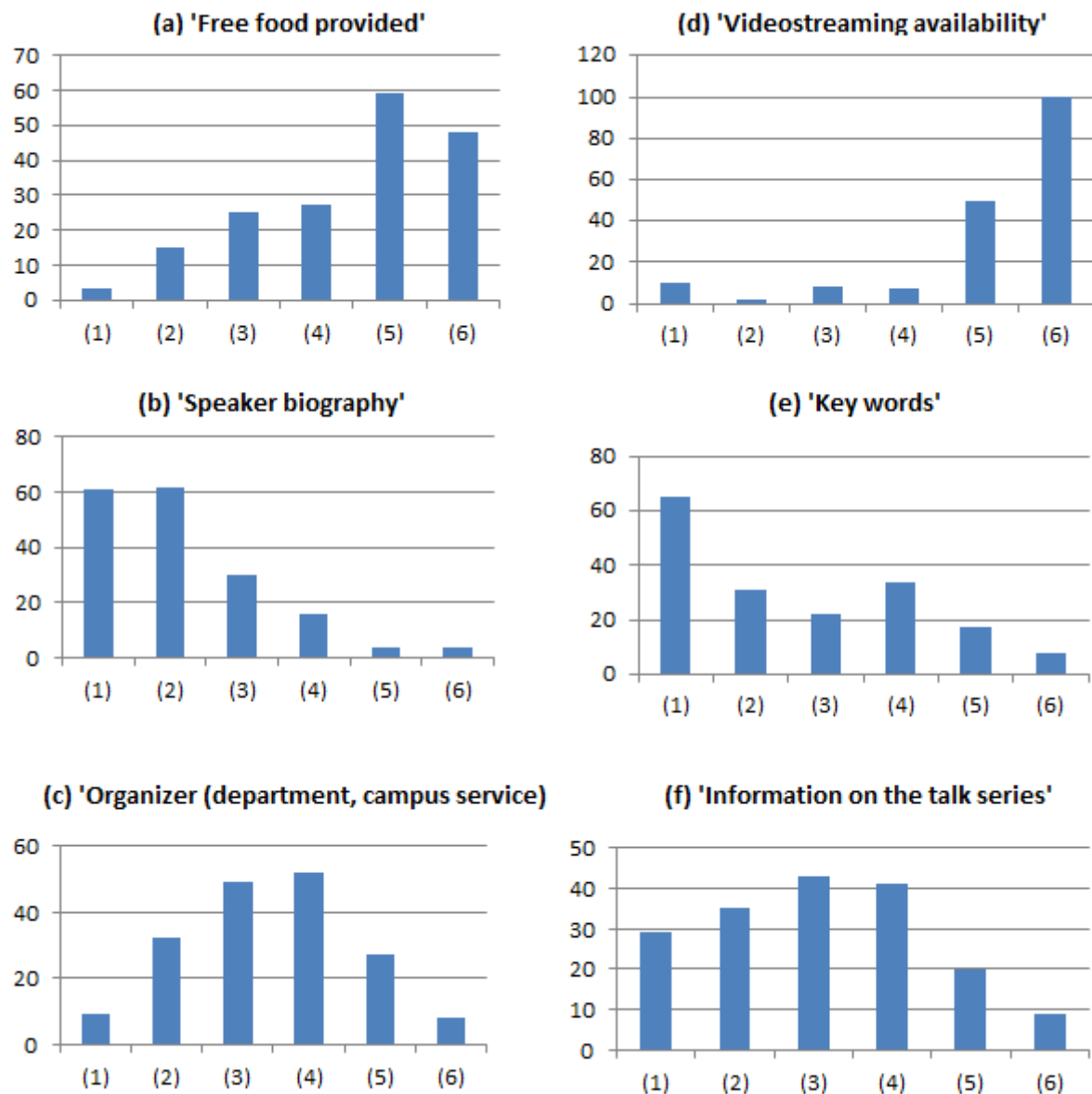


Figure 14. User assigned priority for each feature. Note how some features inspire more agreement than others. This is important to know for the next stages of the design process, when small samples are again being used. Items with low priority agreement are more likely to inspire seemingly contradictory design feedback from users.