

Journey into the user experience: creating a library website that's not for librarians

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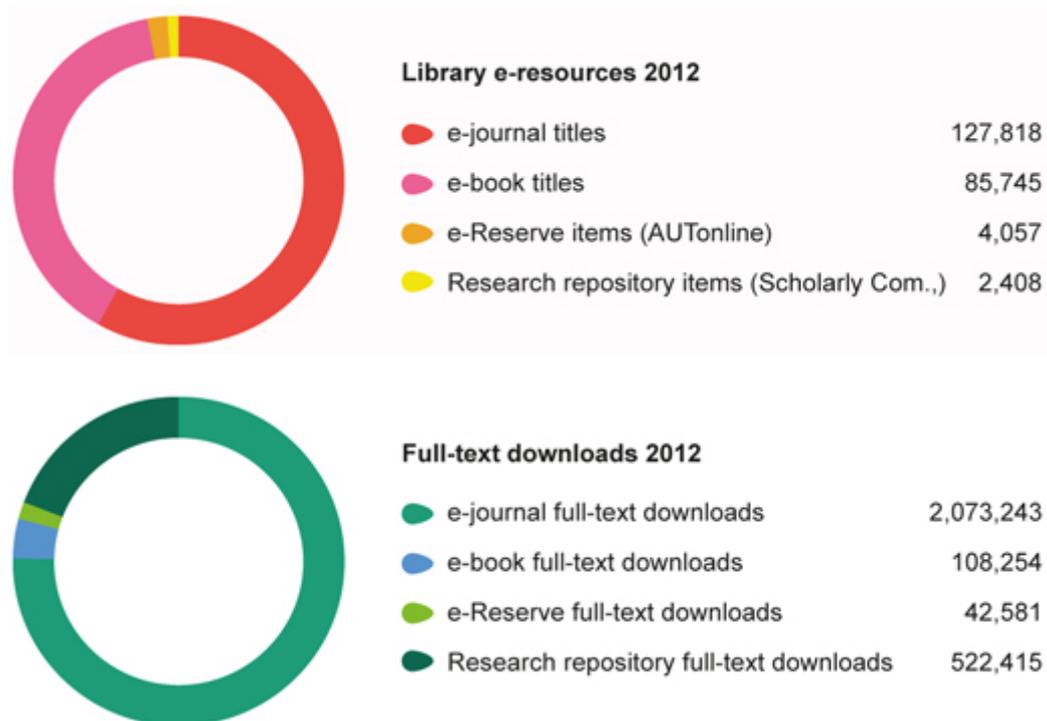
Abstract

Auckland University of Technology Library started work on a major redevelopment of its website in 2012. The problem was that the website content, as is the case for many library websites, had been written by librarians with almost no user input. The challenge was to redesign the website, rethinking our entire focus and placing the user at the centre of the process. This is the story of a journey of transformational change based on our user-centric approach. We believe we have achieved what we set out to do and created a website that's built not for librarians but for users.

Context

Auckland University of Technology (AUT), the newest New Zealand university, was established in 2000, built upon a one hundred year pre-university history. Since 2000, the University has grown dramatically: in 2012, there were 26,787 students (19,117 EFTs) and 2,106 FTE staff; and for the first time, the University was included in the top 500 of the QS world university rankings. Figure 1 illustrates how the Library has kept pace with the growth in demand for resources. The high use of the Library website shows it to be a critical service for our users.

Figure 1: Library e-resources and online usage statistics 2012



The University takes pride in its distinctive student-centred approach to tertiary education. One of its key strategic priorities is to support and improve academic success at all levels and for all groups of students. Two recent and significant campus developments with students foremost in mind are the completion of a large new student precinct on the City Campus and the ongoing development of our third campus, the AUT South Campus.

Library management strongly supports the University's student-centred approach to education. In 2012, the University Librarian initiated an on-going project, 'Library of the Future', to shape and guide our strategic direction using a user-centred ethos. A 'user-centric' focus was now to underpin the majority of our work. In April 2012 when we reviewed client survey feedback on the website, it reinforced the need for a user-centred redesign to achieve greater effectiveness.

Prior to 2010, the Library website was hosted at the University without the benefits of a true Content Management System (CMS). AUT Marketing looked to remedy that situation and a revised website was created by Library staff, using the templates

provided, which conformed to the look, feel, functionality and branding of the AUT website. The use of the AUT website template limited the ability of the Library to provide a Library site best suited for academic library users. For example, the choice of colour, the number of columns and the number of links in each column was specified by the template.

Two significant enhancements to the website were the introduction of the Summon discovery search box in February 2011, and the launch of a separate mobile interface in February 2012. The website was working well but users were raising issues, such as 'it took me 20 minutes to find an article through the library website' and 'learning how to use the library website for the nth time'.

A key internal driver in the redesign of the website was that it should incorporate a much stronger user focus in keeping with our user-centric imperative.

External drivers

The (whirl)winds of technology change

The face of tertiary education is changing rapidly. However, whether or not our institutions take up massive open online courses (MOOCs), or expand more extensively into distance education and online courses, students will still need access to e-resources via their library websites. Ever-evolving innovative technologies, such as tablets and other devices brought in by users, have tremendous appeal for students who want to be able to easily connect to and access fulltext resources via their mobile equipment, wherever they are and at any time of day: students can no longer be expected to be on campus to learn and study (Anderson, Boyles & Rainie 2012, p. 2-6). Library websites have to keep up with this demand for easy, quick and full access to resources and services and at the same time, be adaptable to future demands.

The key point is that libraries should not be frustrating their users by not listening to them but should respond to what they have to say, and the way they say things. Too often, library websites merely reflect the needs and likes of librarians rather than users.

The shift to user-focused development and user-centred design

Usability testing (and user experience (UX) design in general) has been around as long as the internet, and there is now an evident shift to user-focused development and user-centred design of library-specific websites. Recently librarians have taken up these fields with alacrity, two of the strongest proponents being Matthew Reidsma and Aaron Schmidt, and academic library websites and their users have benefited. There are now good examples of broadly-based academic library website studies (Kasperek, Dorney, Williams & O'Brien 2011) including a recent local example (Howie 2013), and more focused usability studies of academic library websites (George 2005; Becker & Yannota 2013). These studies were a rich source of information and guidance and we were able to incorporate many ideas into our usability testing and user studies.

Establishing the website redevelopment project

In April 2012, the Library Executive considered two papers making the case for a significant update of the library website. Hearne's paper (unpublished, 2012) reviewed the current state of the website, and outlined an opportunity for a major update of the website in collaboration with the AUT Web Centre, with which the Library had developed a strong working relationship. An updated website would take into account the latest research into academic website design and online technologies and most importantly, would reflect our users' needs, wants and likes when using a library website.

Murdoch's paper (unpublished, 2012) concentrated on the issues our website was raising with our users, and how these could be addressed. Our website was bursting at the seams with content. There were too many pages, too many words on each page, and too many links, particularly on the home page. Visually speaking, our website was too busy and the white text on a background colour of deep purple was distracting and not easy to read. As librarians, we thought we knew what our users wanted, but this had not been tested through usability studies.

Library Executive recognised that the website was not working as effectively as it could and approved the establishment of a project group to scope the redevelopment of the website from scratch, incorporating developments in library website best practice, a user-focused design, responsive web design, and the inclusion of more social media.

The remainder of this paper describes the process the project group followed. A visual map of the project work breakdown structure, which details the steps in the process, is provided in Appendix A.

Project objectives, goals and scope

The redevelopment project was initiated with the objective of improving and enhancing user access to and use of Library services and resources via the website. Our goals were to improve the design, layout and overall usability of the website; to upgrade and significantly reduce the content; and to review and adjust the management of the website to improve processes and procedures.

Foremost in our minds was the goal of creating a user-centred website by consulting our users directly, rather than vicariously through our librarians. We intended to achieve this goal through focus groups, interviews, and user surveys. It was also important to be able to accurately measure the use of elements of the website via a selection of online tools and statistics.

What did our users tell us?

We used a wide range of techniques to build up a picture of the wants, needs and feelings of our users, as they related to the existing website. The most significant of these techniques were statistics, online tools, focus groups, interviews and user surveys, and external assessment of the website.

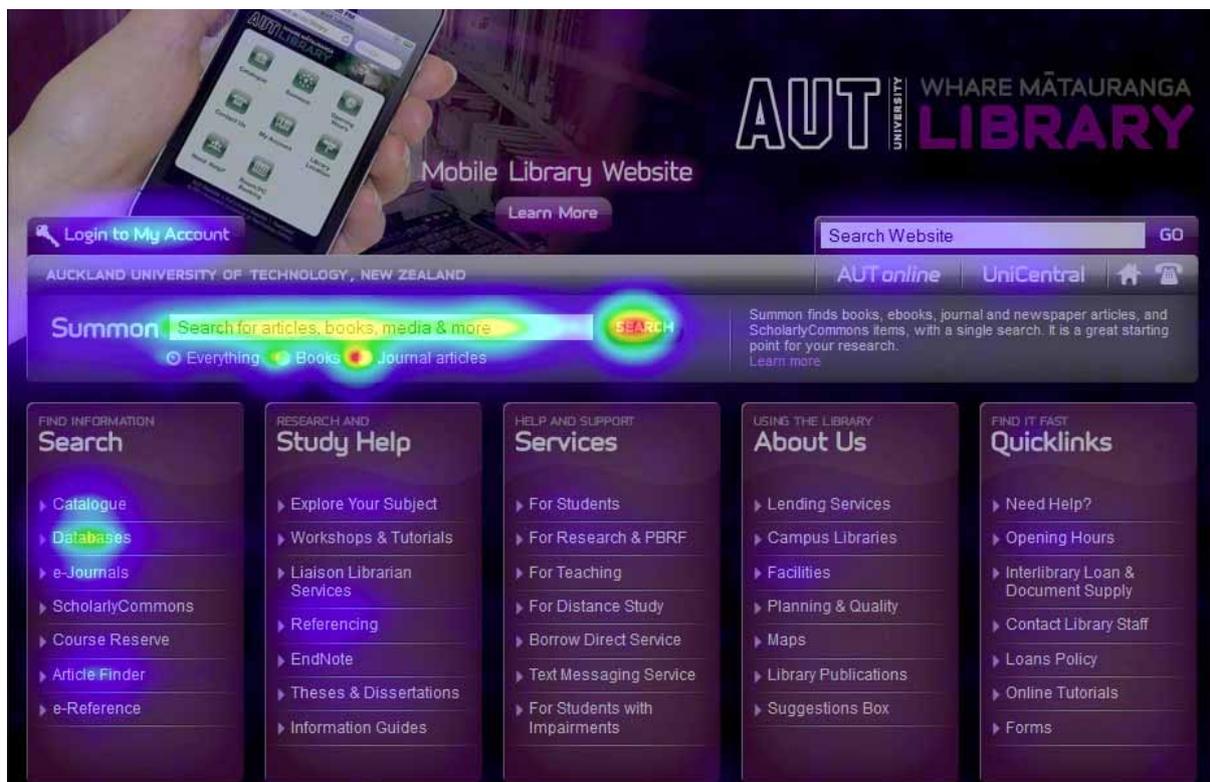
1. Statistics

Our primary source of website statistics was Google Analytics. On a surface level, these indicated high and increasing usage of the website, in theory both good things. However, it is only relatively recently that Analytics has offered the tools to analyse actual user behaviour. One of these tools in particular, the Visitor Flow report, revealed that a significant percentage of users behaved in a manner that indicated that they might be 'lost' on our website. They tended to follow a very circuitous path to get to their eventual goal, appearing to loop back repeatedly to pages they had already visited.

2. Online tools

To gain a deeper understanding of user behaviour, we used the online click analysis and heat mapping service from Reinvigorate. A heatmap is a visual representation of data. Heatmaps are used to display the most frequently clicked areas of a website. Clicks are displayed using the colour spectrum, with red being the most clicked regions and blue the least. The Reinvigorate service tracks clicks on a website, providing an overview of the path that an individual user takes through the site, as well as heatmaps of site usage. The following screenshot shows one month's usage of the existing Library home page, in August 2012. It is clear that the highly used parts of the page were given no prominence over unused parts of the page.

Figure 2: Heatmap of website usage August 2012



3. Focus groups

In response to feedback from a library customer survey that flagged usability and navigability of the website as areas for improvement, the Library ran a number of focus groups with a range of users. The feedback indicated that the Library suffered from many of the problems reported by other libraries (Emde, Currie, Devlin & Graves 2008; Reidsma 2012): a preference for Google and Google Scholar over the Library website, the undesirability of having to dig too far for information, information overload (reported as too many links of questionable relevance) and too much scrolling.

4. Interviews and user surveys

These enabled us to clarify the main purposes for which users visit the Library website. Unsurprisingly, the vast majority are searching for resources, via the catalogue, discovery layer, or specific databases. Users also wanted to know our opening hours, to seek help with referencing and to renew or reserve items. What was surprising was that these were virtually the only things people wanted to do, yet our site offered at least 41 different links on the home page alone. We also asked students for their impressions of the site, in particular for the feelings that it evoked in them. They said: 'scared', 'lost', 'nervous', 'overwhelmed' and 'disorganised'. This was simultaneously difficult to hear and enlightening.

5. External reporting via Influx

We commissioned a UX Shakedown from Influx, a library user experience company. The UX Shakedown is intended to give a clear understanding of the strengths and weaknesses of a website, and provides assistance in assessing whether a full redesign is necessary. Influx assessed our website across a wide range of measures and attributes. We were then provided with a comprehensive and easily interpreted report, which focused on what the site did well and what the site could do better. "If you're not quite sure where to begin with improving your website and aren't ready for usability testing" is one of the key reasons described by Influx for undertaking a UX Shakedown. This described us perfectly, and the report was an excellent way to understand both the weaknesses and strengths of our existing site, from the perspective of the experts in the field.

Responding to the need for a major change

The research outlined above confirmed two of our early suspicions. Firstly, that our website was not meeting the needs of our users. Secondly, that we had come to a point where we could not achieve what we wanted to with incremental changes. We had reached a place that Kathy Sierra (cited in Hart 2010) describes as the "Big Frickin' Wall" (see Figure 3).

Essentially, only revolutionary change would solve the issues that we were facing. This was not an ideal situation as the magnitude of such change is disruptive in itself for website users. However, it was important for us to recognise and respond to the situation. Once we had done that, it was in fact a relief to be able to move forward with a clean slate.

We were also aware that our processes for managing the website would be subject to significant change. At the same time as designing a new site, rewriting content and establishing a user focus at the core of our practice, we also needed to revise the oversight and day-to-day management of the website. The major goal was a focus on users and their needs, to be achieved by building in monthly usability testing, incremental changes to the site in response to the testing, and an appropriate content strategy.

Figure 3: The Big Frickin' Wall (Kathy Sierra cited in Hart 2010)



What did we do?

1. Personas

Once we had completed the initial collection of user feedback, we began to develop personas. Steve Mulder and Ziv Yaar (2007, p. 19) describe a persona as a “realistic character sketch representing one segment of a web site’s target audience”. Defining a small number of personas enabled us to focus on their goals, and most importantly on how the website would work for them, as opposed to how it would look or how it would work technically.

The work to create the personas relied heavily on the research outlined above. The process began with each member of the project team individually creating quick and informal personas on card. These were then organised in a card-sorting exercise by the whole team. The result was five distinct user personas for the Library website.

One of the most interesting outcomes of this process was the discovery that our users were not segmented by traditional academic library ‘patron types’. Many in the Library intuitively expected our personas to be ‘undergraduate students’, ‘postgraduate students’, ‘academic staff’ and so on. In fact, our personas and these categories overlap. This is entirely natural, especially given that a specific real user may fit into various personas depending on their goals, attitudes and behaviours at a particular time.

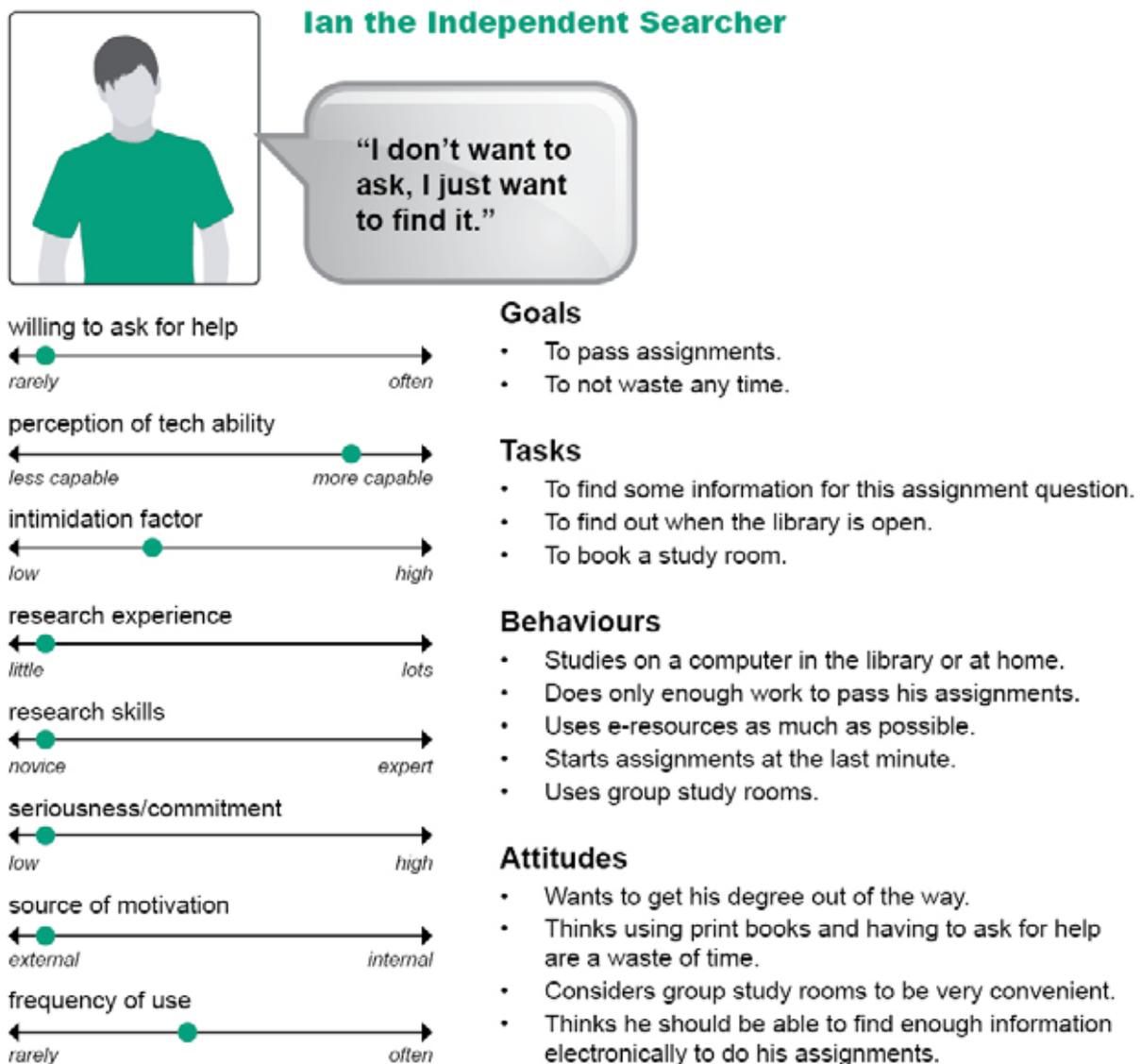
The personas were deliberately brief and to the point. To be effective, personas need to be easily and immediately recalled. They need to become ‘surrogate’ users

for whom a real affinity is developed. The keys to our personas were descriptive names, photos that helped to build a relationship, and a key phrase that summed up the focus of the persona. These were supplemented by bullet point goals, tasks, behaviours and attitudes, and a slider chart that helped demonstrate how each persona differed from the others. Our personas were:

- Ian the Independent Searcher: 'I don't want to ask, I just want to find it'
- Melissa the Motivated Researcher: 'I work hard to be the best I can be'
- Terry the Task Focused Teacher: 'Reliable support for my teaching means a lot to me'
- David the Disadvantaged Learner: 'Studying isn't easy but with the right support I can do well'
- Stacy the Studious Studier: 'I really want to do well and get the help I need'

Ian (see Figure 4) and Melissa were our primary personas, those with the most important goals to be addressed by the Library website.

Figure 4: Persona: Ian the independent searcher



An important secondary use of the personas was to dramatically reinforce the concepts 'the user is not like me' and 'you are not your users' to Library staff. These became catchphrases for the project group and were a deliberate attempt to change the way the Library as a whole thought about our website. The personas became a focus for how different our users are to ourselves as librarians.

2. Scenarios

Flowing directly from the development of the personas was our work on scenarios. "A scenario is a short story about a specific user with a specific goal" (U.S. Department of Health and Human Services 2012, p.1). Scenarios take the one-dimensional personas and put them into action. Working in small groups, the team worked on creating scenarios for each persona's goals. Later the whole group assembled and refined the scenarios until they accurately represented the ideal journeys that the personas would take through the Library website. It is important to note that these were 'ideal' journeys at this stage. Limitations of many types would be imposed on the site as the project progressed, but at that point, we were designing for the best possible experience.

Our scenarios focused upon what the user did and how they did it, as well as why they did it and their feelings. This further encouraged the empathy and understanding begun with the personas, extending it beyond the persona itself and into the associated decisions, emotions and perceptions.

Where the scenarios were an exercise in creative story writing, the next step, extracting site requirements from those scenarios, was more like detailed technical writing. Site requirements were drawn from the scenarios, and indicated the specific content and features needed in the site to meet users' goals. These in turn were used to guide decisions made in the various stages of site design.

Site design and content

Mockups and information architecture

We split into two groups to work on initial site mockups, with the goal of encouraging more creativity through wider input into the process. Throughout the process of site design and content development, we stressed the need to use what we had learnt up to this point and to keep it top of mind. The focus of our initial mockups was the layout, navigation and functionality of the site. It was not about graphic design as in colours, images, typography, cascading style sheets (CSS) gradients and the like. At this point, we developed the core navigation and architecture of the site, the essential layout of the home page and content pages, and the functionality behind many of the site elements. These were defined both in mockups (created using the Balsamiq collaborative tool, 'Mockups'), and in site maps and a content registry.

Design brief

Concurrently the group worked on a design brief, which illustrated broad design goals to the University's Web Centre. In this phase of the project, we were working to a very fluid request from the University Web Centre. Effectively we were told to

'specify to the point to which we felt comfortable'. The design brief included a list of words intended to direct the design towards our desired 'personality' for the site. These included 'simple', 'fresh', 'friendly', 'credible' and 'inviting'. We suggested a colour palette that reflected and enhanced the personality. We did considerable work on colour theory and the psychology of colour, sought input from the Disability Resources Office, and tested our conclusions with Library users.

Content

A key content focus was to involve the content owners (Library staff) throughout the process. We undertook a full review of all existing content. Work on personas, scenarios and site requirements enabled us to identify content that was no longer required, and to identify content, which by its length, complexity or 'Library-speak', would prevent users from achieving their goals.

As we developed new content, the aim was two-fold: firstly for individuals to take ownership of their content, and secondly for those individuals to begin to understand our content goals and the reasoning behind those goals. We used an iterative process where the content team and content owner worked together to refine a draft for each page. This worked extremely well in building up a wide base of Library staff members who 'got it'.

Our general content goals were informed by the work of experts in the field such as Steve Krug (2006) and Erin Kissane (2011). The key concepts were that content should be simple, concise, clear and user-centred. We are currently working towards a comprehensive content strategy and the work done on content earlier in the project has been a driver for the adoption of new workflows and procedures.

Final site design: working with an external designer

An exciting and daunting opportunity unexpectedly arose when the project was invited to work with the University's brand agency Consortium on concept and digital design. The team's work on the site design up to this point was reviewed by the University's Director of Marketing and Communications, the Manager of the University Web Centre and a team from Consortium. We were taken well out of our comfort zone by this process, but were positively reinforced in the direction we were heading.

Working with Consortium opened up new opportunities for us. Their expertise and experience in graphic design, typography, and website design in general enabled us to move away from a mindset where we were essentially copying what we felt were current exemplars of good academic library website design. Consortium, who shared our goal of being guided by users, introduced us to the idea of moving from responsive design to adaptive design, creating a richer and more pleasing experience for all users. They also stressed the benefits of cohesive and elegant design – as they put it, 'beautiful and functional is better than ugly and functional'.

We conducted layout and navigation testing at this time using an online tool called PlainFrame, which let us remotely test alternative navigation schemas and layouts. The results of this testing allowed us to make reasonably significant edits to the

information architecture: we added an extra top-level menu and moved certain items between menus.

We had indicated in our initial project plan that the project team lacked the necessary expertise in concept and graphic design. However, although an extra expense, the time and money spent on working with an external designer was worth it.

Site build and initial usability testing

The AUT University Web Centre completed the build of the new Library website in late September 2013 after 3 months work. During this process, members of the project group were closely involved both with monitoring and testing. Full functional testing followed the loading of content, at which point the site was released to all Library staff for further testing, familiarisation and to enable preparation of teaching and promotional material.

The first full hands-on usability testing of the new site was conducted in October with staff and students. We will be following Steve Krug's outline on conducting usability testing (2006, pp. 131-159), for this and future testing. Krug is an acknowledged expert, and one aspect he addresses is the necessity for usability testing not to be a burden on those conducting it. Our reality as a Library is that those who will be involved in usability testing have other jobs and responsibilities. The Library is committed to making regular usability testing part of core business, and Krug's approach of paring testing down to the essentials is ideal.

The response to usability testing was encouraging and also revealing. Testers were excited by the new site, while at the same time our observations of their task behaviour led us to make a number of small changes in wording, navigation and design. We have also scheduled one significant change to the home page design with the Web Centre for early 2014 as a result of usability testing. We will be moving our 'quick links' from the bottom right of the page, to a central location under the search box. Users were unanimous in their preference for this position when shown paper mockups.

The new site was successfully launched in November. We chose to launch in the break after the completion of Semester 2 final examinations, the quietest time of the year for the Library. This minimised the impact of any launch issues, and provided the opportunity to conduct further testing and make changes to the site before the start of Semester 1 2014.

Key features of the new website

Our new website is the culmination of 18 months of challenging, enlightening and often difficult work, which has led us on a journey of transformational change. We believe the three most significant features of the new site, and where it differs markedly from the old site, are its simplicity, conciseness and clarity; the prominence of the search box; and its responsive or adaptive design.

1. Simplicity, conciseness and clarity

A huge achievement has been the stripping away of unnecessary content and links, essentially 'de-librarianising' the Library website. Getting 'buy-in' from Library staff to the idea that 'the user is not like me' was crucial to this.

2. Prominence of the search box

A significant proportion of our website visits are solely for the purpose of searching for resources. Our discovery search now has increased prominence, as it is no longer surrounded by a multitude of text, links and images. Search is always visible – scroll away from it on the home page and it pops into the header. It is also in the header on content pages, and accessible via a prominent search icon (with popup search) on mobile devices.

3. Responsive/adaptive design

Users want to be able to access the site on their smartphones and, most importantly, have full functionality while doing so. The decision to go with adaptive design was driven by the desire to get the best experience on phones, tablets, laptops and desktops, and to minimise the possibility of short-changing one or the other. Our goal is to respond to users by being available where, when and how they choose, without compelling them into our way of working. New Zealanders are rapidly bridging what was a wide gap in smartphone ownership and usage compared with Australia and the United States ('Google releases new insights into mobile trends in NZ' 2013, para. 1). Sixty percent of New Zealanders own a smartphone in 2013 (Carney 2013), and dual- and multi-screen usage is increasingly common. A key part of our website design was ensuring a smooth and consistent experience for users of all devices, and recognising that users switch devices.

What did we learn?

Learning 1: 'The user is not like me'

It was a formidable task to convince library staff that their website might not be performing as it should and that the reason might be that it was designed by, and chiefly for, librarians. The way to convince staff was through evidence, and the evidence that worked was what we were able to learn from our users. Once we had worked through the research, personas and scenarios described above, it became clear that we have no 'Ians', 'Melissas', 'Terrys', 'Davids' or 'Staceys' on staff. In addition virtually none of our users have the background, skills, knowledge and language of our Library staff, and we should not expect them "to become mini-librarians in order to use the library" (Pattern 2012).

Our users, quite simply, are not like us and we are not our users. Once that is demonstrated, it becomes a much easier task to recognise and address issues.

Learning 2: A website is never finished

This project has taught us that our website must be constantly evolving. We need to learn from and respond to our users, and to develop incrementally over time, avoiding the danger of reaching a point where we once again need huge change. This is a basic tenet of user-centred design, but it requires a notable shift in the way we manage the website moving forward. We have therefore committed to monthly usability testing, and to addressing the issues that the testing reveals. We have committed to keeping the site current and fresh, and to reflecting that we are part of the wider University community. Being able to make these decisions relies on the Library recognising the absolute value of the user in informing our practice.

We acknowledge that we will need ongoing support from the University Web Centre to achieve constant incremental improvements. The Web Centre's work is largely project based, with start and end times, and an assumption that once a project is complete it is finished. We are working closely to address this, both via flexibility in design and by giving Library staff wider access to make changes.

Flexibility of design is both an outcome of our work and an advantage. The need to be able to integrate new technologies, and to work effectively with hosted Library solutions, requires this flexibility. If the nature of the Library's practice is to see the website as constantly evolving, it is easier to picture these integrations and to implement them in the future.

Learning 3: Making the participatory and collaborative process work

Remember that people never like being told they are wrong; people genuinely believe they are doing their best. What worked for us was a participatory and collaborative design process involving library staff, our users, and key stakeholders from across the University. The design process was an evolving and iterative one, and we learnt much by simply doing the work. We learnt the importance of recognising and making the most of unexpected opportunities that came our way and came to understand that communication is as important as any other element. Generosity, patience, evidence and humour are essential for the success of a project.

Learning 4: A library web presence is a complex beast

Perhaps the most difficult issue we had to deal with during this project, and the one which is still chiefly unaddressed, was the complexity of the Library's web presence. Unlike many service providers in other industries, our web presence, by the very nature of the services we provide, is a complicated stitching together of various vendor interfaces, including:

- Summon from Serials Solutions, our discovery layer
- The Voyager library catalogue
- LibGuides from Springshare
- Multiple electronic resource platforms
- Our institutional repository using DSpace

When our users access any of these services from our website, they encounter different navigational schemas, layouts and functionality, and the reality is that overcoming this is difficult, if not impossible at the current time. This is similar to the situation where an academic library is assumed to be responsible for external services located within the physical library, such as IT and printing and binding services (an entirely natural assumption for users); and as we address the physical issues we must also address the virtual.

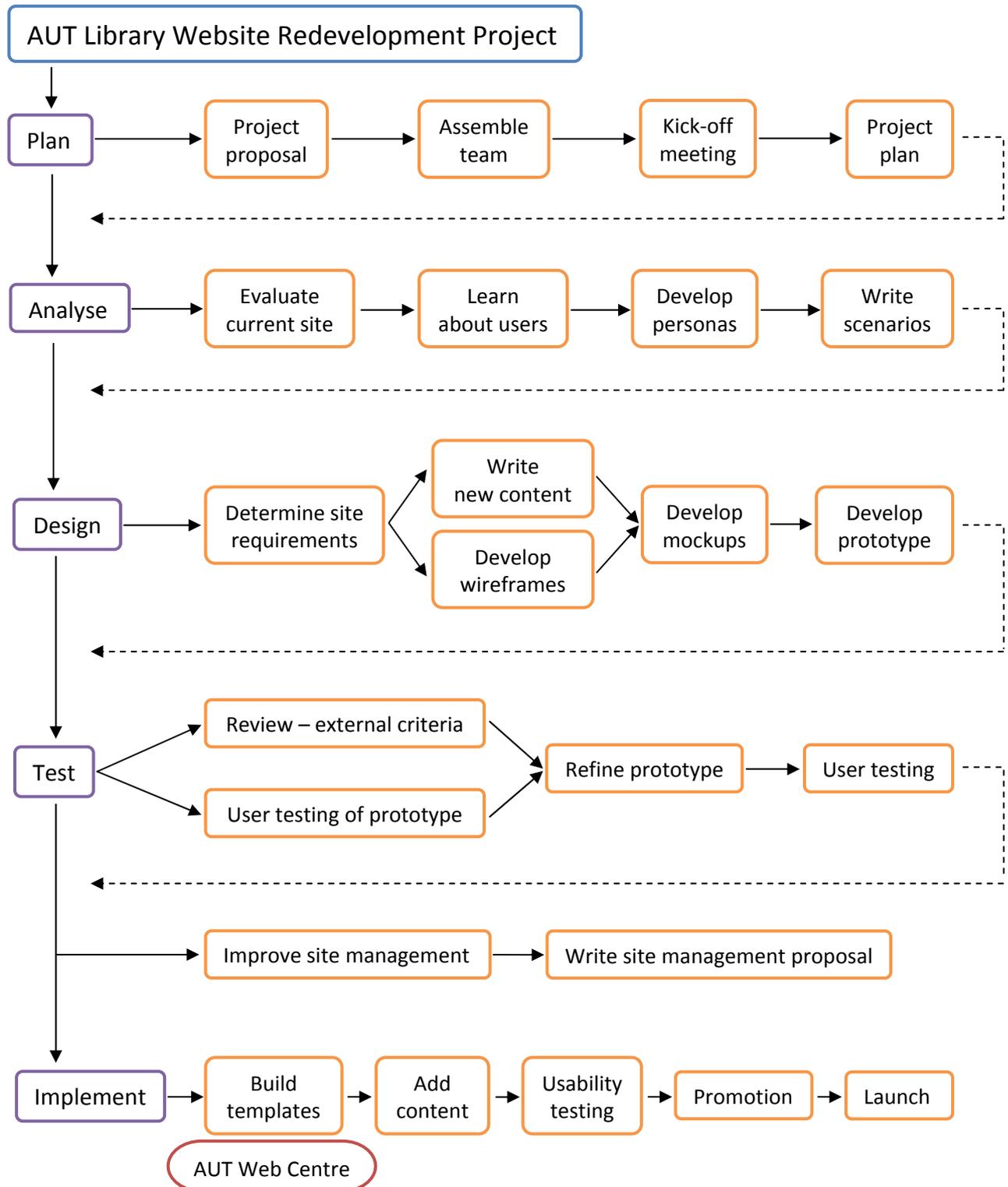
Two key questions need addressing:

- how do we influence vendors of our virtual services to develop more user-centric interfaces?
- what are the technical solutions that may alleviate issues for end-users?

Conclusion

This paper has described the redevelopment of our library website as a collaborative journey with our users. Our main focus was to ensure that the new website presents information resources and services in a simple but professional and inviting way that appeals to our users. We aimed to provide easy access to our resources with a minimum of clicks, and provide full functionality via the mobile devices that are now mainstream and indispensable to the current generation of users. We have integrated user collaboration into our website management procedures and workflows so that we can ensure the website will remain fresh and responsive to their needs into the future. We also have an array of online tools that will assist in this. In the final analysis, we believe we have achieved what we set out to do and created a library website that's built not for librarians, but for users.

Appendix A. Website Redevelopment Project work breakdown structure visual map



Adapted from the “Step-by-Step Visual Map” provided by Usability.gov.

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Consortium (Auckland based communications and brand-building agency): www.consortium.co.nz

Influx (user-centred design for libraries): <http://weareinflux.com/>

Reinvigorate (website heatmaps): www.reinvigorate.net

Usability.gov (US government resource for user experience best practices and guidelines): <http://www.usability.gov/>