Futurelib

UNIVERSITY OF CAMBRIDGE

Imagining the future of library services at University of Cambridge.

North Star

Exploring the potential of a new scholarly research gateway at the University of Cambridge

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THE FUTURELIB PROGRAMME

Futurelib is an innovation programme exploring the future role of academic libraries within the University of Cambridge. It employs ethnographic research methods and human-centred design techniques to examine the current user experience (UX) of libraries and draws on the skills of librarians from around the institution to test new service concepts. It is funded by the University Library and regularly supported by design and innovation consultancy Modern Human. The programme is managed by Andy Priestner and led by Sue Mehrer, Deputy Librarian, Cambridge University Library.

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1. Introduction

In 2013-14 Cambridge University Library's design team conducted research with a wide range of academics in different disciplines and at different stages of their careers. There was no intention to test any hypothesis at this stage, but rather to gather as much information as possible about goals, needs and frustrations with a view to considering possible future design interventions that might improve academic experience of the research process. The research techniques employed included:

- 10 x collaborative design workshops
- 10 x 48-hour shadowing sessions
- 34 x contextual depth interviews

The chief output from this research was a 'Publishing Experience Map', which detailed the academic publishing cycle from research genesis to submission and peer review to publication. The map highlighted various points of interaction between the academic and University administration ('touchpoints') that were either failing or conspicuous by their absence. It also identified areas where enhanced support and streamlining could significantly improve the research process and reduce its complexity. A number of academic personas (see example below) were also created, detailing different academic behaviours, attitudes, goals and motivations, with a view to considering the reactions of different types of academics to the publishing process that had been mapped.

When the Futurelib Programme was created in August 2014 this study of academic behaviour was re-examined as part of a meta-analysis of previous University Library user experience research. The result was the proposal for a new research platform, or gateway, that might help to improve the academic research and publishing process. Initially called CURA (the Cambridge University Research Archive), the idea was the new gateway would ensure REF eligibility and increase the visibility of an academic through both their publication profile and their research outputs. It was also proposed that CURA would integrate where possible with existing platforms, including Cambridge's DSpace Open Access repository, in order to make maintaining an academic profile and contributing research outputs a more efficient process, and to reduce the number of places an academic needs to visit.

2. The North Star Project

In 2015 it was decided to revisit the idea through a project that would seek to explore the benefits and features of such a new research gateway in more detail and through further research with academics. By this time the prospective gateway and the scoping project that would evaluate its functions were renamed 'North Star'. The name was chosen to reference the importance of the North Star in navigation and its legendary brightness, with the gateway potentially becoming the navigational tool of choice for academics.

3. Gateway Features

The primary features of the prospective North Star gateway, which would be explored with academics through a new set of depth interviews and the sharing of a prototype version, were agreed to be the following:

- Simplify the publication process for academics
- Promote academics and their research output via a single academic profile
- Act as a shopfront for the University of Cambridge's world-leading research
- Build research collections for a Cambridge journal, department, or research group
- Ensure (as far as they are known) compliance with requirements for the next Research Excellence Framework

4. Project Timeline

In keeping with Futurelib's fast project turnarounds, the North Star project ran for just three months between December 2015 and February 2016 in three distinct stages.

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Stage 1: Scoping (December 2015)

- Project briefing with key University Library personnel, librarians and staff from the University's Research and Communications offices
- Identifying academics from different disciplines for interviews
- Collaboration with Research and Communication offices to shape approach

Stage 2: Interviewing (December 2015 to January 2016)

- 24 interviews with academics from a range of disciplines across the University
- Analysis of testimony gathered (including meta-analysis of previous research conducted with academics in 2013/14 – see next page)
- Identification of a set of needs ahead of further findings and design workshops

Stage 3: Prototyping (February 2016)

- Sharing of the 'North Star prototype' with a subset of the interviewed academics
- Design workshops to explore look/feel and features of the gateway
- Findings workshop to detail academic reactions to the prototype and key gateway features
- Creation of an 'Experience Blueprint' to define how the platform would work for different user groups

5. Methodology

Other than a number of design workshops at which attendees generated ideas for potential gateway features and functions, the chief research method was a series of 'contextual depth interviews' with academics. These interviews were conducted with 21 research active academics in the following disciplines: Medicine (3), Business (3), History (2), English (2), Maths (2), Education (2), Engineering (2), Materials Science (1), Psychology (1), Biology (1), Chemistry (1), Earth Sciences (1). Three key members of the Research and Communications offices were also interviewed.

The interviewees were recruited by the Futurelib Programme Manager in collaboration with departmental and college librarians. Participants were interviewed at their office or a convenient location nearby and each lasted between 60 and 90 minutes. The interviews covered participants' research interests, current work, recent publications, profiles, collaborations and skills sharing. There was also a focus on the use of grey literature, research outputs, research data, academic activities beyond publishing and public awareness of participants' work.

The interviews sought to uncover and understand the unique benefits or advantages that North Star could potentially provide. It was felt that if we arrived at a sufficiently compelling set of features for the gateway then academics would have an intrinsic motivation to use it rather than the extrinsic motivation of compliance. Therefore the overall aim was to align their needs around intrinsic benefits.

Below: a breakdown of what the North Star gateway might need to achieve and include
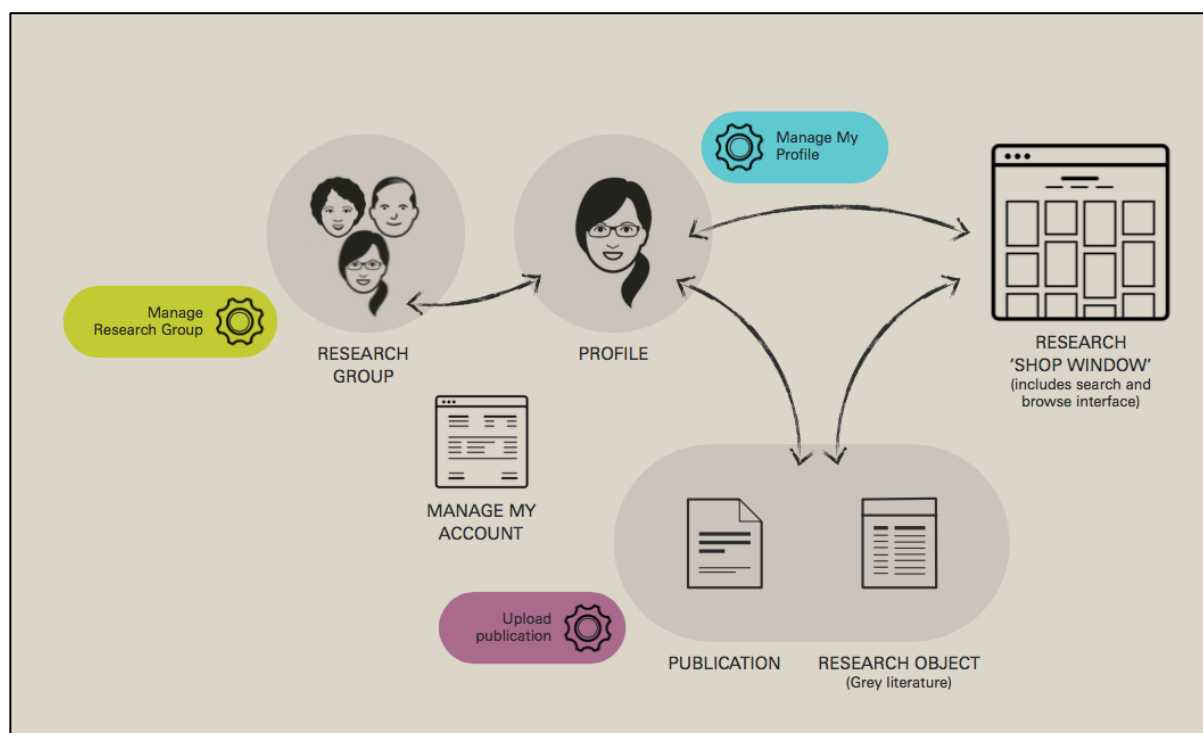
6. Findings

A selection of key themes and findings were derived from the new contextual depth interviews. A key area was the academic journals landscape and publishing behaviour, however there was also a great deal of material relating to more general academic behaviour and research practice.

- Early career researchers pursue higher impact publications in order to build a reputation in their field.
- Personal networks play an important part in which journals academics choose to publish.
- The more senior academics are less worried about impact factor, publishing in specific journals, and reputation in their field. Many choose publications that just work better for them, including OA journals.

- Disciplines such as Mathematics and Physics are more concerned with research data output than peer-reviewed papers.

- Disciplines such as Biology and Chemistry are reluctant to share research outputs before publication. For these disciplines, conferences are about advertising work that has been published rather than sharing ideas.

- In the Arts and Humanities the most valuable medium for the dissemination of research is the single author monograph, however the REF has led to an increased number of academics in these fields publishing in peer-reviewed journals.

- At a macro level, the journal landscape looks very similar between disciplines - the tasks are similar.

- Most people like to see the full publication list on what they consider to be their 'home' online research profile but very few provide this information to other systems.

- Many academics research together and publish separately in their own disciplines.

- Maintaining various publications and profiles is an overhead for academics. Many consider their departmental profile to be the 'official' one even though they might not necessarily be up-to-date.

- Most cross-disciplinary collaboration that takes place is with Cambridge colleagues.

- Education was a microcosm of all disciplines in that academics within this discipline displayed a variety of behaviours from across all the others.

- The activities of PIs (Principal Investigators) are akin to running a small company, hiring the right people, being a mentor, creating the business case etc.

- Academics get more selective about their publication lists as they move along in their career, not necessarily including some of the less important items.

- Most academics didn't know what happens with their papers once they go into the Open Access system.

- In relation to Open Access, those interviewees complying said they were only doing so because they are being told to, not because they understood why they should.

- A University research profile was considered to be of more use to those outside their disciplines as academics felt that they knew everyone in their field. However, they could see its potential for students and the media.

- Most of the academics said they were not interested in the statistics about the paper. However, when they were shown a mock-up of what would be possible, they thought it could be useful when making a case for research impact.

- Photos on research profiles were considered to be very important for networking, especially for following up after conferences.
- Academics felt it was important for them to be able to easily share their research in a legally acceptable way.
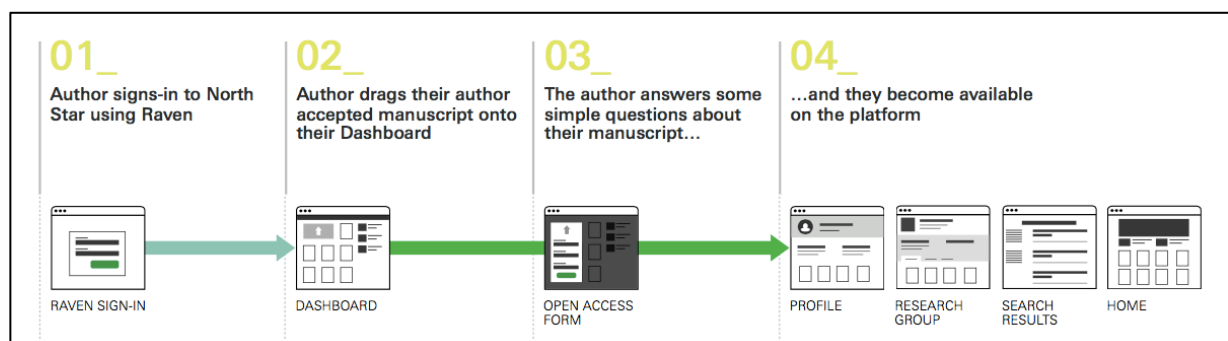
Although there were a lot of differences between the academics interviewed, their needs in relation to the publishing process were, on the whole, very similar. For this reason it was felt that a single gateway could potentially satisfy the needs of all disciplines, even if the different groups ended up using it differently.

7. Prospective functions

When presented with the possibility of a single Cambridge research gateway most academics interviewed agreed that it would need to support the following functions and activity:

- Increase the ease with which they were currently able to share research

- Ensure their publishing and dissemination activities are legally acceptable

- Provide statistics on article views, downloads, and citations their work has received

- Ensure that every interaction is quick and easy

- Decrease levels of stress by reducing administrative overheads.

- Help to make the research process more streamlined and less burdensome

Below: A scenario showing how North Star would help an academic share their latest research paper

01_	02_	03_	04_
Author signs-in to North Star using Raven	Author drags their author accepted manuscript onto their Dashboard	The author answers some simple questions about their manuscript…	…and they become available on the platform
RAVEN SIGN-IN	DASHBOARD	OPEN ACCESS FORM	PROFILE RESEARCH GROUP SEARCH RESULTS HOME

8. The North Star opportunity

It was anticipated that the North Star gateway would serve as a new user front-end for all of Cambridge's existing research systems and platforms: Apollo (the institutional repository, previously called 'DSpace'), Symplectic, the Cambridge Open Access website, and VIVO (or a similar academic profile system). These systems together provide much of the necessary functionality for academics to manage their online profile and research outputs, but the interviews highlighted that together they offer a disjointed user experience. North Star would seek to provide all of the functionality of these disparate platforms in an easy-to-use single interface, providing a simpler and more cohesive user experience. The objective would be that the platform would be compelling and add value, thereby encouraging academics to submit their research voluntarily and move beyond a compliance model. Those academics that still wanted to use all the separate platforms would be welcome to do so, but North Star would provide a more seamless alternative, particularly for academics unfamiliar with all of the different platforms. Another aim of the gateway was that it should make it easier for academics to identify experts in different fields at the University, including potential collaborators. At present, locating academics with particular specialisms can be a difficult process and collaborators often find each other through personal introductions and circuitous routes. This can also be an issue for PhD supervisors, who struggle to find appropriate contacts for their candidates, and for central and departmental communications staff. North Star would seek to unite all of this information in one place.

Below: Screenshot of the North Star prototype

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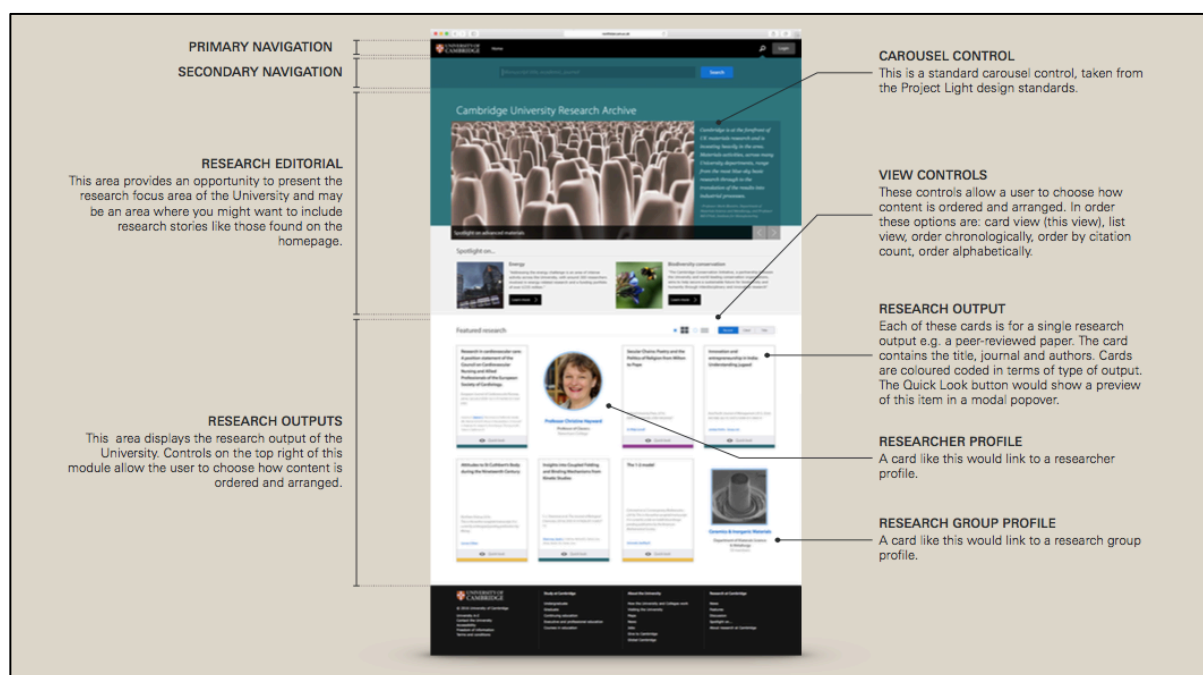
9. Approach

For the project and the gateway itself to be a success it was agreed that the following approaches and components would be required:

- The design and launch of a 'minimum viable product' version of North Star to academic users, before developing new features and advanced elements.
- Developing and designing with academics, not separate from them, ensuring their validation of the gateway.
- Full integration with existing Cambridge research platforms.
- Rewarding users in some way for contributing to the gateway, possibly through gamification or progress bar features.
- Functionality that would allow the creation of a memorable University URL for each academic's profile.
- Promotion throughout the Cambridge community through a variety of channels and methods.
- The continuation of dialogue with, and involvement of, the Research Office, the Communications Office, the University Library (especially its Office of Scholarly Communication), and Departments and Colleges.

Below: an academic profile view from the North Star prototype

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Concept topology: Screenflow

KEY

- Public facing system
- Claiming papers
- Route into system for university staff
- Selecting papers for profile
- Upload papers
- Creating / editing research group profiles

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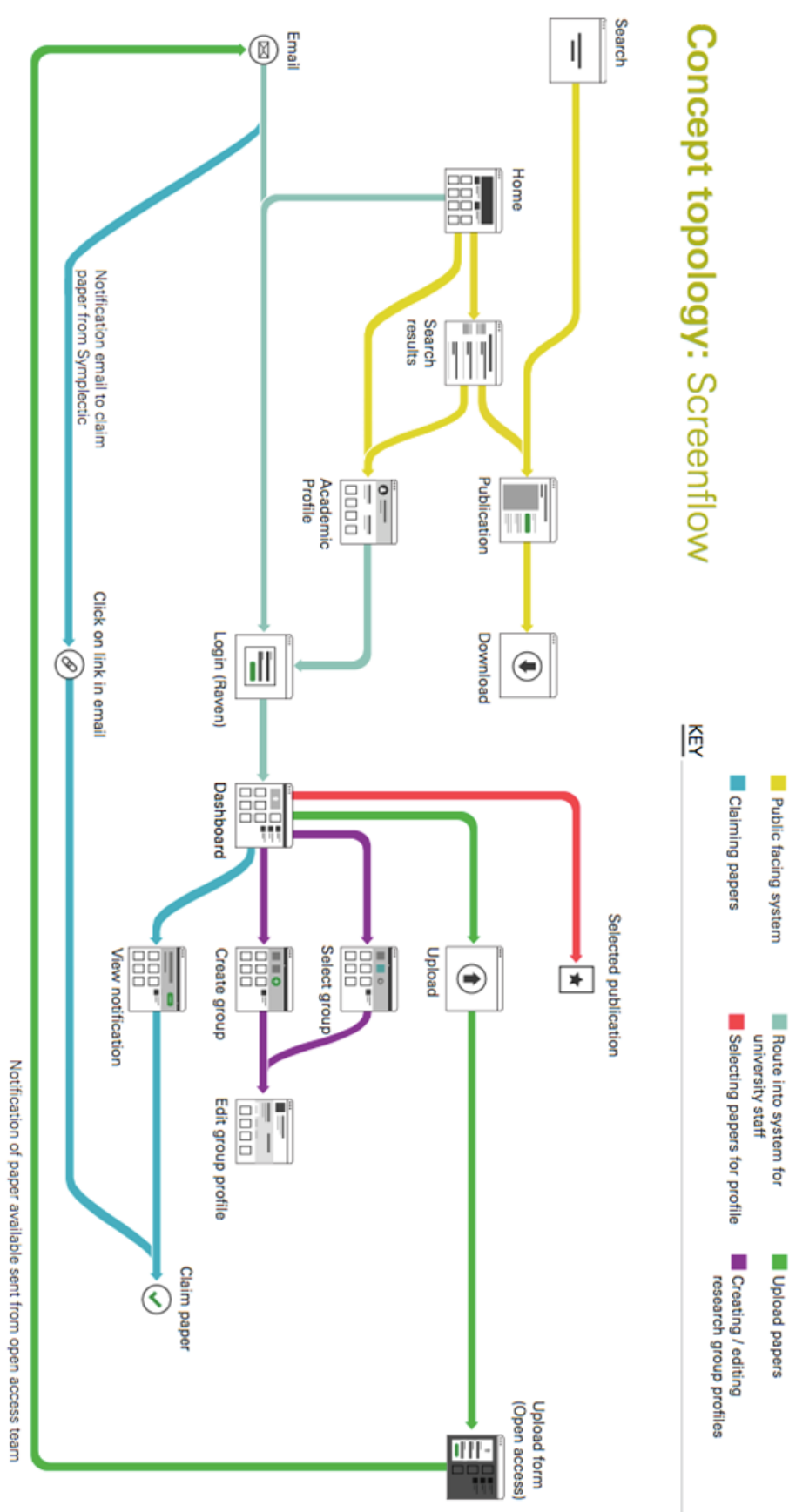
10. Conclusion

Although the research conducted showed that academics and researchers involved in the project were open to the concept, there are no current plans to pursue North Star further. There were concerns around the complexity of the project and the attendant technical requirements of such a significant undertaking. However, the project offered further valuable insight into academic routines and practices and highlighted the need for further investigation into providing streamlined workflows and easy to use platforms supporting the academic publishing process.

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