



UNIVERSITY OF  
CAMBRIDGE

Imagining the future of library services at University of Cambridge.



## Research findings and concepts for future library services at the University of Cambridge

User-centred design research conducted by Cambridge  
University Library and Futurelib between 2012-14

## 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. The programme is funded by the University Library, managed by Andy Priestner and led by Sue Mehrer, Deputy Librarian, Cambridge University Library.

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# 1. INTRODUCTION

Since 2012 Cambridge University Library has been actively involved in user-centred design research. Between October 2012 and May 2014, a team led by the Head of Innovation at Cambridge University Library, conducted a significant programme of ethnographic research. The research programme included:

- guerilla interviews with 112 students about their use of library spaces, services and resources;
- diary studies with 25 'freshers' (1<sup>st</sup> year undergraduates) over an 8 week period to explore their study behaviour;
- contextual interviews with 25 2<sup>nd</sup> and 3<sup>rd</sup> year undergraduates, focusing on study behaviour and use of library services;
- shadowing of 10 academics to understand their day-to-day lives, specifically their publishing, research and technology-based activities;
- contextual interviews with 25 academics focusing on their research activities, academic writing and publishing behaviour.

The large amount of contextual ethnographic data gathered during this initial research period formed the basis of the Futurelib Programme which started in August 2014. The vision for Futurelib was that it would actively analyse all of this data and continue to gather more in order to create and test a range of 'near future' library products and services, thereby turning user experience insights into action. Modern Human Design Ltd were appointed to support Futurelib by conducting this analysis in conjunction with a project team comprised of volunteer library staff. The original research data was augmented by 30 additional interviews with internal and external 'library experts' conducted by Modern Human in the Autumn of 2014. Each interview ranged from 60 to 90 minutes and focused on the role of libraries, the role of the librarian, perceptions of libraries by library users and how libraries might change in the future. Experts interviewed included:

- University of Cambridge academics: 4 from STEM disciplines and 5 from Arts, Humanities and Social Sciences (AHSS)
- A number of external experts and thought leaders including Library Directors of research intensive Universities

- University of Cambridge library staff: 3 from Cambridge colleges, 3 from STEM department and faculty libraries, 5 from AHSS department and faculty libraries and 3 from the main University Library

Over an intensive 12-week period all of the data from the initial and supplementary research phases underwent a large scale meta-analysis in order to explore and identify emerging themes and patterns, ultimately formulating 12 potential concepts to test (detailed later in this document).

Several guiding principles and objectives informed these concepts, which provided and opportunity to:

- re-conceptualise the library's role in relation to physical and printed resources;
- expose the hidden abundance of library spaces, services and expertise in the Cambridge system;
- leverage the proliferation of potential library touchpoints within the research process and support research output;
- position libraries as the curators of digital academic tools and librarians as experts on digital research methods;
- move library services to operating in a way that more closely matches how academics actually do their research and how students actually study.

This report details the original 2012-14 research findings and the subsequent September 2014 expert interviews, as well as the concepts that Modern Human presented to the University Library in December 2014. These concepts kick-started the Futurelib Programme and several of the concepts became specific Futurelib projects, such as 'WhoHas?' and the very successful 'Spacefinder'.

N.B. This research was conducted several years ago now and this report should be read with this in mind. Some suggestions have already been taken up as part of, or beyond, Futurelib within the Cambridge library system. However, we believe that there is still much value and relevance in these findings and potential concepts.

## 2. STUDENT RESEARCH: KEY OBSERVATIONS

### 2.1 Supervisions

Supervisions are central to a student's life at Cambridge. A supervision is a session in which students are taught alone or in groups of two or three in a discussion setting on a weekly basis. Many students organise their whole lives around supervisions and think of their week as running from supervision to supervision. They will usually work every day of the week, but their 'weekend' is typically the two days immediately after the supervision. At some point during those two days they will begin collecting resources for their next essay or supervision activity and consider this the start of their study cycle. Across disciplines, students reported a 3:1 reading to writing ratio; they will typically spend three days reading towards their essay or supervision activity and one day writing or completing the exercises. Students will typically be given a reading list by their supervisor. They will select a subset of this list for their supervision activity, but there is very little information available to help them select the best resources efficiently. There is also stiff competition for these resources.



## 2.2 Workspaces

Every student has preferences in terms of places in which they like to work. These will typically be either their room or a library, although there are also a significant proportion of students who are looking for alternative working spaces. Students who prefer libraries find they are much more focused and effective in this setting, where there are few distractions. They find the change of environment helps them to differentiate work from the rest of their life. Many students will go to the library when they *need* to get something done. For some students going to the library becomes like going to the office every day.

The typical library environment doesn't work well for everyone though. Those that prefer to study in their rooms value the familiarity, quiet and convenience, along with the flexibility of being able to make a hot drink or snack. These students typically only visit libraries to get books and journal articles, or for short periods of time between lectures. The students who find neither their room nor a library preferable are looking for quiet spaces that don't *feel* like libraries and often end up in Junior Common Rooms (JCRs), or find other nooks around their College, Department or Faculty. Students often look for group working spaces in which they can talk and collaborate with others. These types of study session often end up being held in local cafés or spaces in colleges.

### **A variety of workspaces are required to provide for diverse user needs**

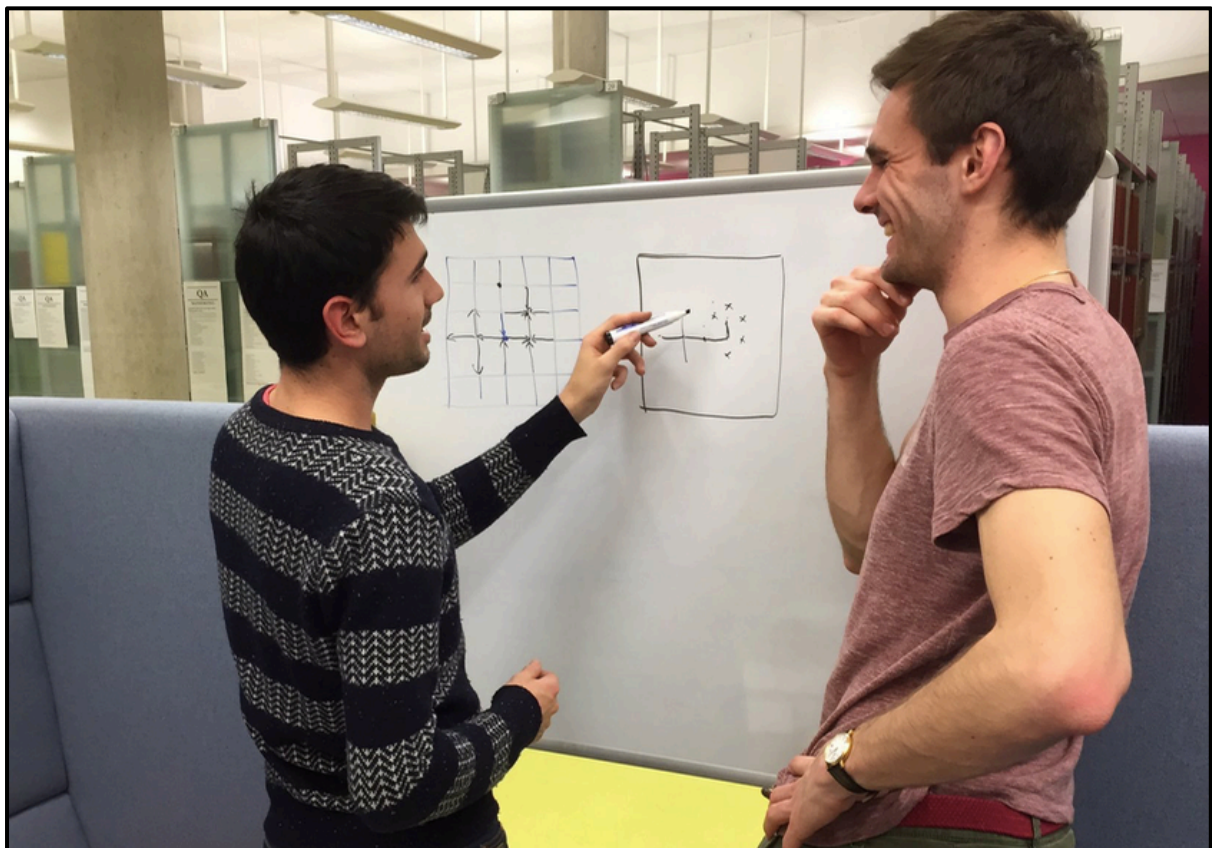
Students have personal preferences with regard to working spaces and also work differently depending on the activities they are involved in, or the discipline which they are studying. Atmosphere, comfort, available resources and convenience are some of the factors students take into consideration when selecting a space in which to work. Silent spaces are highly valued, as are more informal spaces where people can collaborate in groups and work 'alone but together', at a desk or in a more comfortable area with soft furnishings. The relaxing of food and drink policies in libraries was also noted as having an impact on the choice of a library as a study destination. The network of libraries across the University of Cambridge needs to provide spaces to meet these varying needs, and crucially, provide information to help students select the right environments for those needs.

Interviews with library experts validated this finding:

- “I’m an advocate of the libraries all being so different. Students have lots of different options and they play a game when they arrive. They work out what all the different spaces and resources have to offer, then choose which ones suit their needs best.”
- “People will become more concerned about the amount of money they are spending on their education so they will treat being at university more like going to work, rather than having a good time. They will need more professional workspaces which support serious work and focus.”

## Scientists need group workspaces

There can be an assumption that scientists don’t need library spaces because they access everything online, work in labs and don’t read books. The research showed that this is not the case. It became apparent that scientists are in need of spaces in which they can work collaboratively on problems, cross-fertilise ideas and share knowledge. This is an essential part of learning in scientific disciplines. These spaces are not currently provided sufficiently at the University.



Expert opinions on the matter were as follows:

- “The library represents a sense of community for scientists. They work on complicated problems on whiteboards in the library, where senior students, classmates or faculty members pass by, see them struggling and then help them. They struggle to see how they would survive as a faculty without this space where people can come together and work on problems.”
- “There is a huge problem with lack of useful communal space for science students. There is no go-to space in the centre of town for scientists to go between lectures. A lot of students go back to their rooms or colleges, which doesn’t help support their learning.”
- “Just because scientists don’t read as many books doesn’t mean they don’t need a space to use and interact in. They need a space to cross-fertilise and share knowledge, as this is an important part of learning. This is just not available at the moment...”

Supervisors and lecturers in the Natural Sciences suggested that it would be ideal to have a large central space for all science students, which would not necessarily be designated as a library. This space could contain:

- copies of all core textbooks which are available to browse between lectures so that students are not forced to have their own copies with them during the day, or to return to their college rooms to use them;
- print copies of key journals for students to browse and therefore be aware of the latest research in their subject areas;
- areas that encourage the cross-fertilisation of ideas and the sharing of knowledge;
- easy and readily available access to electronic journals and other e-resources;
- and comfortable working areas with free tea and coffee.

The value and importance of library spaces for scientists was also supported by external experts, who recounted their value when they were threatened with closure.

However, disagreement and difference of opinion existed when it came to the value of books in the library space:

- *“... we removed all the collections from the library and made more room for collaborative and pedagogical spaces. We were told that scientists didn’t need a library with physical books on the shelves because they are accessing journals online. They described their needs as community spaces that reinforce the pedagogy of the classroom and the faculty curriculum. However, when we asked students to draw their ideal science space they kept putting the books back in for various reasons: practical reasons like the shelves of books provide privacy and reduce noise, but also symbolic reasons, such as the library being a place you go for serious thinking and learning. They felt that taking the books out and making it look like a coffee shop would not provide the same scholarly gravitas that is attractive to them and reminds them of why they go to a library. When they walk through the doors they want to be reminded that they are in a place of serious work, this is the symbolism that the books provide, and is lost if they are taken away.”*

## 2.3 Social groups

A student’s primary social group is almost always made up of other students at the same college, enrolled in the same course. The individuals in these social groups often work together, discuss their supervisions and lectures, share resources and utilise group tactics to secure the best resources during times of competition. Those who don’t have anyone studying the same course at the same college are at a significant disadvantage when it comes to securing access to library resources, collaborating before supervisions, trading notes or picking up notes and handouts when they have missed a lecture.





Students in Natural Sciences, Maths and Computer Science often study independently while sitting next to other people working on the same or similar problems. They place a lot of importance on this collaboration. When they struggle with their work they are able to get real time support and before supervisions explain things to each other in the form of mini ‘lectures’ and ‘hot-seat’ games (questioning a fellow student as if they were in a supervision before it happens), to help cement their own thinking and get more out of the supervision sessions. Students taking part in our research used places like JCRs, college bars, and libraries, or squeezed groups of people into their rooms. None of these locations were well suited to the activity.

## Facebook groups

Many students establish private Facebook groups in the first few weeks of term. They use these groups to self-organise and to trade information. The Facebook groups are set up by an individual student, but these individuals do not consider themselves the group leader. The groups are usually exclusive to a particular course of study at a particular college, but occasionally their membership extends to students at other colleges with the same Director of Studies. Students see these Facebook groups as a natural thing to do, as Facebook is the

collaborative platform they are most familiar with. They will use the groups to ask questions such as:

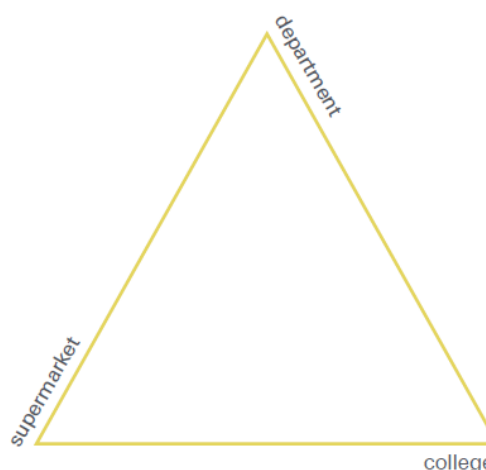
- Can I borrow someone's notes on the lecture I missed yesterday?
- Can I have a look at somebody's essay on a particular topic?

Students regularly reported using the computers in libraries. This is partly because their own laptops will log them in automatically to Facebook and their email and they find that using a library computer without these shortcuts helps them to concentrate and avoid distractions.

## 2.4 The 'Student Triangle'

It was discovered that in Cambridge many students operate within a geographical triangle consisting of 3 points: their department, college, and preferred supermarket. The area between these points is where a student will spend most of their time.

This triangle goes some way to explaining why students who are at a college which is close to their department perceive distances between things as being much farther than they are; their physical worlds are actually quite small. This contrasts with students at colleges like Girton and Murray Edwards (farther away from most department and faculty buildings, and other University services) who typically perceive larger distances as not being as inconvenient. Students resent having to leave their student triangle and will plan visits to locations outside of their triangle specifically. Journeys out of their student triangle may include visits to libraries, handing in work to supervisors at other colleges or departments, and attending supervisions at other colleges. Students often make special and inconvenient trips to libraries to return books and collect new resources. Many will keep books longer than they need, so that they can return the books they currently have on loan and borrow books for the next week in the same trip.



## 2.5 Sub-lending

Sub-lending is a common activity. Students find ways of learning who has the resources they need and then either borrow them for a short period of time or share use of them. This is currently commonly facilitated through Facebook, although sub-lending happened long before Facebook launched and is likely to continue after students move on to other social platforms. As mentioned previously students have been seen to establish private Facebook groups in the first few weeks of term and use them to communicate and trade information. Students will post questions to the group such as:

- Who has...?
- Can I borrow it now?
- Can we share a copy?

### The drawbacks of using Facebook groups for sub-lending

Sub-lending was seen to take place almost exclusively through Facebook groups. Facebook is chosen due to familiarity, rather than because of the suitability of the platform. Using Facebook groups in this way only allows students to borrow from or share resources with people they already know. The use of Facebook also favours well-connected students who are in a college with lots of people studying the same subject. Other students do not experience the same benefits. Libraries do not capture any data about this activity.

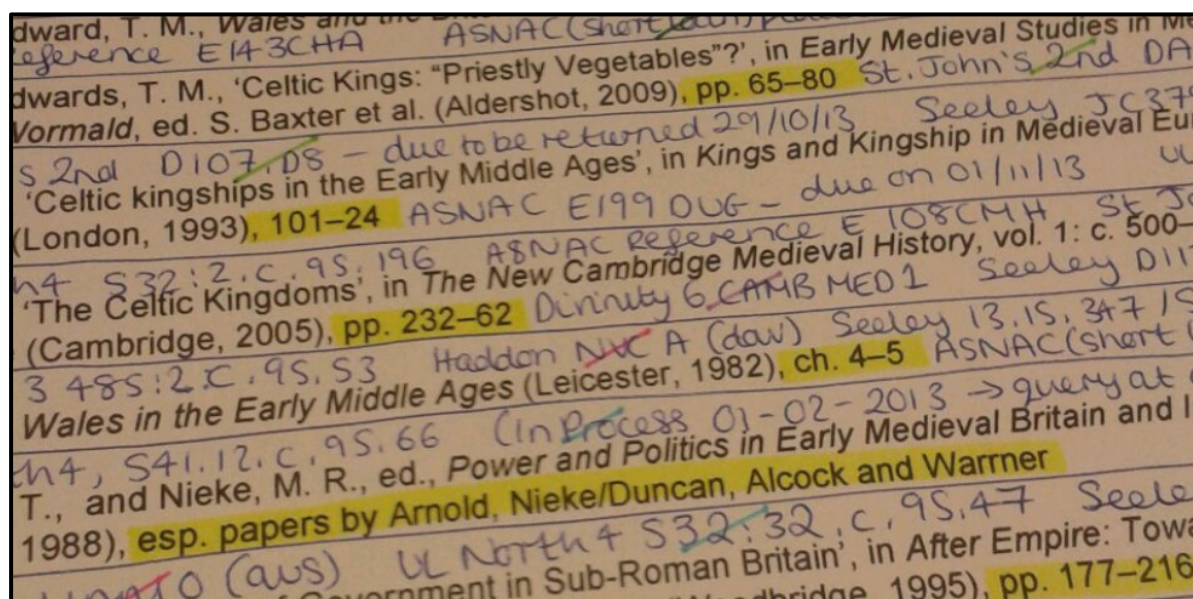
## Recalls

Recalls allow a library user to request a book to be returned to a library by whoever it is currently on loan to. Students described how emotional an experience having an important resource recalled can be. They talked of 'recall wars', where they themselves counter recalled after having a book recalled. Many students said that they actively avoid recalling books because of how it makes people feel.

## 2.6 Competition for resources on reading lists

Supervisors often set the same reading list at the same time, across multiple supervision groups. This leads to intense competition for resources during the short period between the

supervision and following essay deadline (usually a week). For example, 60 music students might be told to read the same book for an essay which is due in 6 days time.



Above: A student's reading list, with annotations showing holdings across the University

During the study, students revealed that they find it stressful when they are not able to source enough of the resources on their reading list in order to be able to write an essay. Some expect better provision of resources, particularly given the fees they pay. This scenario is exacerbated by the way reading lists are prepared, with academics sometimes preparing readings lists the evening before supervisions. Another issue which adds to the problem is that they are not always supplied to library staff.

## 2.7 Students need help adjusting to new ways of working

There is a big academic jump from going to school, and even sixth form college, to studying at Cambridge. At school, students are presented with all the information they need to know; no wider reading is expected. At Cambridge, studying is far more self-led. Teaching provides the basic knowledge and students are then expected to build on this with wider reading and exploration.

Students are expected to complete tasks in much shorter timeframes than they would have been required to at school. At school they would read a text, talk about it in class, be given an essay title, and hand in an essay plan and drafts before the final essay was due. This

process would have happened over several weeks. At Cambridge they are given (or choose) an essay title, receive a reading list and the essay then needs to be handed in within a week. There is usually no interim feedback from faculty. The speed at which students are expected to read is fast and some of them struggle to keep up. During our research, many



students expressed the view that they did not have sufficient time to reflect on what they had learnt. It can take a while for students to get to grips with and adjust to new ways of working and of finding resources. They design their own strategies to cope with both the workload and the style of working, alongside everything else they are dealing with in addition to their studies.

## 2.8 Students create workarounds to counteract a lack of resources

When sufficient resources are not available students become inventive and develop strategies to try to overcome the issue. These strategies have been found to include:

- Using online copies of texts where available, printing them out if they do not want to read from a screen;
- Borrowing a book, using it, and then sub-lending it to other students. The hope is that this behaviour will then be reciprocated;
- Planning with supervision groups in terms of who is going to borrow which books (and from where) so that all the members have some time with each resource;



- Planning very carefully as an individual to ensure that they get to the necessary resources before anyone else;
- Splitting resources on a reading list between a supervision group, sharing notes on reading list books, and running mini 'lectures' with each other based on what they have learnt from a particular resource;
- Using Facebook groups to locate books. Sometimes they get a reply from someone in the same library as they are at the time who has the book; other times students will arrange to meet in person to pass books to one another;
- Using alternative e-resources. This can be problematic as supervisors may criticise that reading list citations have not been used, regardless of whether students have tried to acquire them and have simply been unable to;
- Asking friends to borrow resources for them, usually from a friend's college library. College library loan periods tend to be longer and more flexible than those of department and faculty libraries.

Librarians discussed the reading list issue in interview:

- "Supervision reading lists are like gold dust. We photocopy them out of our students' hands whenever we see them."
- "The format we get reading lists in varies a lot and this causes us a lot of extra work to process."
- "Grr... getting our mits on reading lists! All in all it's a royal nightmare."
- "Students often come and ask us for the reading lists which we don't have."

### 3. ACADEMIC RESEARCH: KEY OBSERVATIONS

#### 3.1 Research vs Teaching Commitments

The roles of academics are complex and diverse. They balance conducting their own research, managing research groups and teaching, as well as their pastoral commitments. Working very long hours or at weekends is common. It is rare for academics to spend any significant amount of time on their own research during term, as they are often too tired to concentrate, so instead they use that time for simpler tasks such as checking and editing references. Despite the necessary trade-off between research and teaching, the majority of participants really cared about their students. These academics put a significant amount of time into preparing for supervisions and lectures, often to the detriment of their own research work.



#### 3.2 Research Groups

Managing a research group has been compared to being the Managing Director of a small company. Academics leading research groups put a lot of time and effort into recruitment, managing researchers, securing funding and managing the requirements of funders. Many



researchers in groups tend to work independently, rather than as part of a team. Individuals working in research groups benefit from sharing resources and from being in close proximity to others in the group. This allows them to bounce ideas off one another and to ask for advice and guidance.

Researchers often share documents using email and tools such as Dropbox when reviewing papers and grant applications of other individuals in their group. Sometimes chasing colleagues to provide feedback on papers in the pre-submission stage can take a lot of time. The cultures within research groups are quite varied; some are extremely competitive while others can be very supportive. Research group members are often geographically dispersed and not all groups meet regularly due to lack of time. Approaches to managing research groups are equally diverse and academics are provided with very little training or advice about how to manage a research group successfully.

### 3.3 Collaborative spaces are needed for researchers

Research groups often consist of individual researchers working on their own projects but in a common area, rather than as collaborative ‘teams’ of researchers. As previously mentioned, individuals in research groups benefit from working in close proximity to other members of their group, sometimes sharing office space. PhD students sometimes (but not always) also share office space and sit near or next to one another. Academics often have their own offices, as they need the space for supervisions and private meetings. However, we observed that they frequently visit the offices of other academics, or interact when they meet in the corridor, at the printer, photocopier or coffee machine, or in the cafeteria. Some research groups have lunch or coffee together on a regular basis to ‘talk science’ and to socialise, particularly groups consisting of younger researchers.

### 3.4 Different academic cultures exist across disciplines

The cultures within academic disciplines can be very different. Physics for example appears to be very open, with papers being shared on the pre-print server arXiv before publication. Physicists will publish in arXiv to ‘mark their territory’, or to indicate that they are working in a particular area. In contrast the Life Sciences seem more secretive; most of the time

nothing is made public until a paper is accepted by a reputable journal. The culture in this discipline is partly based on the need for external funding. Disciplines like particle physics that require large capital investment in equipment tend to have larger research groups and act more collaboratively. Pace has an influence; there are both fast-moving and slow-moving disciplines. The format of scholarly discourse also affects the discipline culture. This can introduce an additional source of pressure for academics, especially when close to a Research Excellence Framework (REF) assessment.



### 3.5 Learning to be an academic

Early career academics are expected to have a lot of skills in order to progress in their careers, but sometimes feel there is a lack of support and guidance in relation to this. These individuals are expected to be confident in various areas including completing grant applications, recruiting, developing and managing PhD students, teaching, tutoring and time management. They are often not prepared for this. There seems to be an expectation that young academics will ask for help when they need it; those who are less vocal and do not look for this assistance can miss out on informal support within their department.

## 3.6 Applying Technology

Academics sometimes struggle to find the right technology to help them with their research. Their needs are very diverse. Some just need to be guided towards appropriate existing commercial software applications, others need complex bespoke software. There are currently no readily available services at the University that help academics apply technology to their research in this way. Both computer officers and the central UIS (University Information Services) provide software and applications to academics, but neither currently provides sufficient help in assisting academics find and apply technology to their individual research needs. Other universities have established 'digital scholarship labs' in order to cater for this.

## 3.7 Academics value services that save them time

Full-time academics have extremely busy schedules. A typical day can involve getting up at 4 or 5 o'clock in the morning to work on research papers, spending an entire day in meetings, lectures, supervisions or managing research teams and then working again late at night and at weekends writing or reviewing papers. As a result, academics have very little time to visit libraries, let alone borrow or return books, or photocopy material. Academics often feel that the people who provide services to them do not always understand their professional context. They compare the role of Principal Investigator to that of a Managing Director in a small company. There is an opportunity for library services to make the lives of full-time academics easier, by helping them to make more effective use of their time.

Testimony from Cambridge academics:

- "Researchers need to be efficient and well organised. Some of them have been given amounts like £1.5m of funding to do their research. This is pretty significant. Their time spent to get the info is as valuable as the information itself and that needs to be realised. For me, the £100 I may pay for a book is nothing compared to the hassle I'd have getting it from the library!"
- "The UL is set up to be efficient for the UL but not the researcher. If I want a copy of a key journal that is not yet digital, I have to go to library, get the journal, hand it to the people behind the desk and ask them to copy it. I then need to pay in cash, which I then have to expense to the department via an expenses system, and then

they tell me to come back in an hour to get my copies. Researchers do not have this time to waste!”

- “We need to have the right model of a scientific researcher, which is equivalent to an MD of a small start-up.”
- “Just getting into the UL is a faff: accessing through barriers then putting everything in a locker then actually finding the material, then getting it copied, etc. It takes a lot of time! We need a fetching, photocopying and UMS service to deliver the photocopies or books directly to our desks. Scan it for me, send me a pdf, check the book out for me and UMS it to me but don’t make me jump through hoops just to do the job you pay me to do!”
- “I am a busy, productive, research-active academic employed full time by the University. I am under a lot of pressure to do research and publish, on top of my other work, and the university libraries do not understand that. Academics like me are often flat out with all kinds of meetings, supervisions and lectures and don’t necessarily have time to go to the library, especially when it closes at 6.45pm, as I often have meetings until that time. The university owes it to full-time academics to make it as easy as possible for them to get what they need to do their research, and should help them as a priority. We are a research university after all.”



## 4. LIBRARY EXPERTS: KEY OBSERVATIONS

### 4.1 Consistency vs. uniqueness

The diversity of libraries, collections and spaces at the University of Cambridge is almost unique. Interviewees felt that this variety should be celebrated and preserved, considering it to be of great benefit to the users of these services: students, researchers and academics. It was recognised that users have options about where they like to work, have an enviable amount of resources available to them and are able to choose libraries to suit their needs and preferences. However, it was also understood that navigating this variety of services, resources and spaces is not made easy for people. It was clear that all types of users can struggle with this, often ending up with less than their ideal solution.

### 4.2 The role of college libraries within the Cambridge library ecosystem

College libraries are independent and administratively separate from the central University system. However, they play an important role in the delivery of library services and are a key part of the library experience of many people at the University, particularly students. Experts interviewed believed that it should be possible for students from each college to search for resources, work spaces, services and expertise from a single point of access. This in no way impinges on the independence of college libraries.

### 4.3 Evidence-based librarianship

More information about users and their behaviour would help librarians to make decisions about services and resources. Many librarians expressed a desire to move towards evidence-based librarianship. This approach involves testing whether initiatives work, then proving why in a rigorous way. Working in this way would echo trends currently happening elsewhere in service design. Evidence based service design involves having a sophisticated set of service metrics that can be used to understand user behaviour and to identify behavioural trends, usage patterns and user profiles. These can then be applied to decisions about existing and future services. The lack of management data is a particular issue in the Cambridge library network. There is no single, consistent view of the user and data is either

not captured, or not available to those involved in making decisions regarding service provision. This is a situation that could be improved. Service metrics provide evidence, justification and rationale for changes that librarians will need to make in order to anticipate, identify and then cater for and exceed future user needs.



- “Understanding trends, patterns and behaviours is important. Commercial companies put a lot of effort into understanding us, our habits, our behaviour and the things we like. We need to start doing the same in libraries and collect information that can inform our direction.”
- “We need to get away from anecdotal decision-making and be more informed about our decisions. It’s not necessarily about saying ‘these are the only 6 books in the library that are used so these are the only ones we will keep’. It’s more about not making decisions because one person with power shouts loudly about something.”
- We know what’s borrowed and circulated, but not much about what’s used inside the library, shelving statistics, etc. It is just assumed that 90% of our print material is never used!”

## 4.4 Digital Scholarship

More and more scholarly material is being ‘born digital’. This provides a challenge for libraries: how will they collect, curate and provide meaningful access to born digital material? It also provides an opportunity: how could they be involved in assisting in the creation of such material? This challenge will require new skills, but also has the opportunity

to have a positive influence and add to the roles considered part of traditional librarianship. There are an increasing number of digital scholarship labs appearing in universities around the world. These are aimed at supporting scholars with their work in the digital environment and are staffed by people with specialised skills in a wide range of areas. These areas of expertise can include geo-spatial data, statistics, computer algorithms, data visualisation and so on. It is important to note that the needs of those working in the sciences and humanities are very different, and that these specialist services should be aware of this. In addition to supporting research output, it is also believed that libraries need to become more involved with researcher profiling and the management of online reputation within universities.

One interviewee described the services at an external institution:

- *“We saw students coming to the library and asking for help in accessing specific data sets - census data or statistical data of some sort, we would help them rent it, pay for it, license it, acquire it, whatever. Then they would ask for help to work with it so we recruited statistical experts to be available to help them and teach them the basics of the statistical packages. Then, students would ask for help to explain their findings so we created a data visualisation team to be on hand. These science services became more about giving students tools that enabled them to use the information they were getting, not just helping them to find the information in the first place. Co-locating the relevant skills together and providing them as a coherent service made it a lot easier for the students to achieve what they needed to achieve.”*

## 5. OTHER OBSERVATIONS

### 5.1 Integrating digital and physical services

The experts interviewed supported the view that the digital revolution is a great opportunity for library experiences to be built around users, rather than resources. One of the challenges facing research libraries is to transfer resources out of a digital experience that



restricts usage, into a digital experience that enables user workflows and facilitates more effective use. It is important that digital services form a user focused ecosystem in conjunction with physical services and environments that users interact with, which will in turn help to create a more streamlined service experience for users.

- “We need a system that is dynamic, fluid and uncontrolled, unlike the traditional library system which is hierarchical and structured. I have workarounds for systems and tools that just do not support my needs, for example, I run a SparkleShare server (a bit like Dropbox) that I can upload things to from the department and then look at them at home. This is not uncommon. I have many colleagues who have workarounds of their own.”
- “The problem, not just within sciences, is that instead of building and planning systems for researchers to work within, it would be better to capture information and data from the systems researchers are already using. It’s difficult to get people to change the way they work so fit in with it.”
- “We need to make it easier for people to use e-resources. Part of the answer to this is open content and infrastructure that supports open tools that allow people to bring things together. The lack of availability of content and open tools is the main problem. Lots of money needs to be invested in building tools but people won’t be clambering for the tools until the content is available. Meanwhile, if the tools to make using the content easier aren’t available then the uptake of online content will be slow. It’s a real chicken and egg problem!”

## 5.2 Paths of least resistance

People will often take the path of least resistance, particularly with tasks where the value to the individual is perceived as minimal, for example updating webpages or adopting 'new' services such as the DSpace institutional repository (now called Apollo). The case for using services needs to be aligned to a meaningful proposition for the user and supported by a frictionless adoption experience.

### 5.3 Service discovery is a problem across Cambridge libraries

Students and academics are unaware of the full extent of library services at the University. For many, their view of library services is limited to borrowing books and the provision of quiet study spaces. Libraries have to address this service discovery problem in a way that takes into account that some potential users may never set foot inside a physical library.

Equally, many people are using library services such as e-journals without realising that it is libraries that are the service provider. It is difficult for academics (particularly scientists) to appreciate the value of a library when library services are provided anonymously. Both the service discovery issues and the correct attribution of value to electronic resources need to be addressed if libraries are to demonstrate increased value to the institution.



### 5.4 Digital resources augment the physical collection

The general opinion from library experts is that the disappearance of print will depend on the functionality of the digital object, the ability to interact with it and the ability to reconstruct it in meaningful ways. While methods for doing this remain relatively unsophisticated it is believed that print will remain in heavy use. At the same time however, there are an increasing number of students using their phones or tablets for reading. There are also situations where students use both physical and digital versions of the same

resource at the same time. With the current state of e-books it is increasingly clear that physical copies and e-books are different propositions and satisfy different needs. The current generation of e-books will not replace printed books, but they are being used increasingly to augment the physical experience of reading from print. The focus for research libraries should therefore be to add value and create meaningful interactions between the print collection and the digital collection.

## 5.5 Using e-books alongside the physical copy

Students use electronic and physical copies of the same text alongside each other. They position their laptop far away from them and the book closer to them. They then reach for the keyboard, over the book, searching for topics or references within the text, and find the relevant place in the physical copy.

- *“I’ve looked at the e-book, now can I borrow the print copy?”* feels like one of the most frequently heard statements we hear. I believe access to e-resources is actually improving the discoverability and use of print.”

## 5.6 Students struggle to find and use digital resources

Many students do not appreciate the extent of the University’s digital collection, and also do not always understand how to access digital resources. The research uncovered a range of problems, from access to resources being blocked by a paywall, to people not being able to find digital resources that were held by the University. Librarians revealed during the research that some students panic about not being able to get hold of a print copy of a particular resource, as they are not always aware that digital copies are available. It is arguable that digital resources such as e-journals and e-books are not suitably integrated into the library experience. They are neither intuitively found nor easily used once discovered.

## 5.7 There is a need to improve discoverability of e-resources

There is an education and awareness issue related to accessing e-resources. Not all students are aware they can access online content from their rooms (where WiFi is available) and when they run into problems in terms of accessing content they often don't understand why. The digital collection therefore needs to be more discoverable in the context of their existing searching behaviour.



There are currently few opportunities for library users to be serendipitously exposed to digital resources. Students are not sufficiently exposed to digital library services during interactions with physical library services and environments. They have to be explicitly looking for them in LibrarySearch or other digital environments. This leads to them being less likely to discover e-resources as part of their natural and intuitive searching behaviour.

## 5.8 Google should be integrated into the library experience

Interviews show that academics place a lot of importance on being able to effectively search for resources. Relevance of information and being able to search very specifically is a key part of their work. They describe the LibrarySearch catalogue as inadequate for this purpose. This is either because it lacks the functionality they need, performs inadequately or because they cannot use the functionality. They often resort to using Google or online

bibliographies created by external organisations, which have more specific and intuitive search tools.

No library search vendor can hope to match the investment in the search technology of Google. In fact, on a sales call with the University, one vendor admitted that their development strategy was to copy Google, but admitted that it takes them 18-24 months to implement new Google features into their platform. University libraries should therefore embrace Google and find ways to integrate it into the library experience.

## 5.9 Searching needs to yield more precise results

The following comments on searching, and specifically Cambridge's library catalogue, were taken from the expert interviews:

- "The UL e-resources catalogue is rubbish at precise searches, because there is no subject categorisation. There is such an avalanche of resources coming in that it all has to be automated. Academic publishers' websites are also rubbish. We need to be able to search for a resource using multiple filters at the same time, for example, century, subject, timeframe, etc."
- "There is a lot of respect for the Cambridge library catalogue, but it's not publicly searchable on Google which could make it easier to use and subsequently be the best solution."
- "Most people come through Google anyway, so make the library catalogue available on Google! It's quicker to Google because it takes so many clicks to get to the resource you want via LibrarySearch. I always Google before using LibrarySearch."

## 5.10 Students and academics could be making better use of technology to support their research

There is a general assumption that because students are younger, they are more aware of the various resources, mobile apps, web applications, software and websites which they could use to assist with their work. The research with students and academics revealed that this is not necessarily the case. Students and academics are both often unaware of the right

tools and apps available that could help them with their work. The findings suggest that undergraduate students do not necessarily have a better grasp of available technology than others. They are often unaware of tools such as Evernote and Dropbox, as well as other applications and services that could help them with their studies. Equally, many academics are unaware of common research tools such as Mendeley, Zotero and EndNote, consumer tools like iPhoto, and graphing and plotting tools like plot.ly.

The University Information Services (UIS) provides IT systems and IT infrastructure, but no-one within the University is helping students and academics get the most out of consumer technology such as web applications and mobile apps. Many academics and students are unaware of technology which could help them gather, categorise and process their research data. There is an opportunity for libraries to provide support in this area and help researchers to work more effectively.





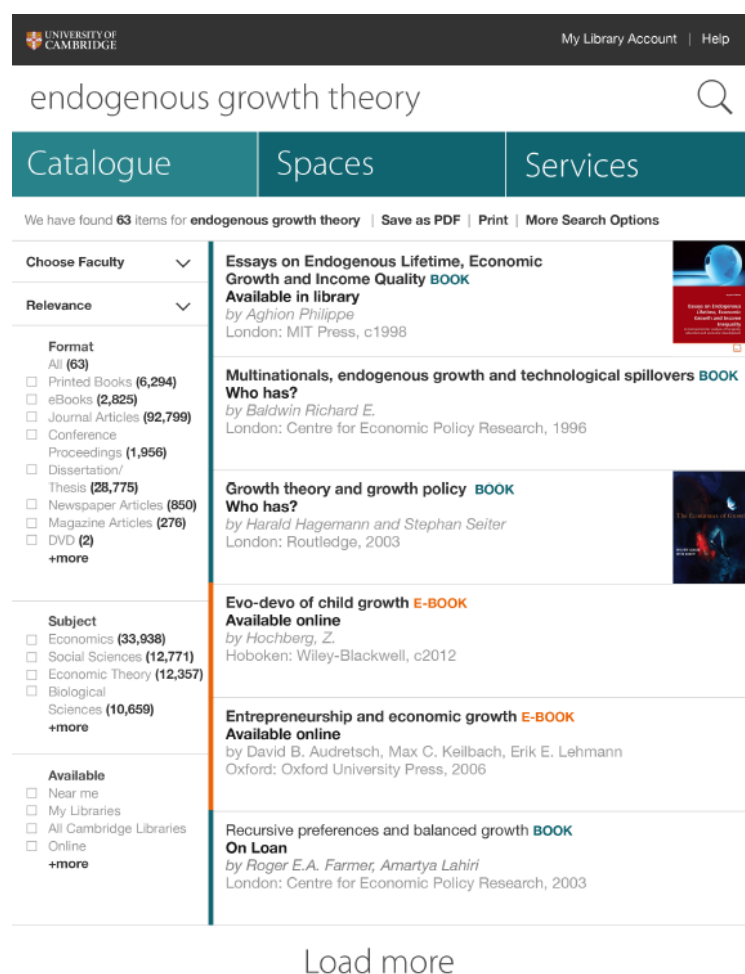
## 6. POTENTIAL CONCEPTS AND IDEAS FOR FUTURE SERVICE DESIGN

The following concepts were all derived from the research phase and subsequent idea generation sessions, and were presented by Modern Human for consideration to Cambridge University Library's senior management and the Futurelib Project Board and Team.

N.B. The visuals used below to illustrate concepts were speculative mock-ups not intended to imply final design or functionality.

### 01: 'Found': a universal library search

Found would search for material such as printed books, e-books, printed journals, e-journals and other resources. It would also search for study and working spaces, along with library services and expertise. It would be a universal search designed to find anything in libraries. The user would be able to click on a search result and either be directed to the location of a printed resource or linked straight to the digital resource, whether that were an e-book or an e-journal. The service would address the difficulty that people have in finding digital resources, whilst capitalising on the growth of the digital catalogue. It would also address the service discovery issue; services and expertise would be easily discovered using Found.

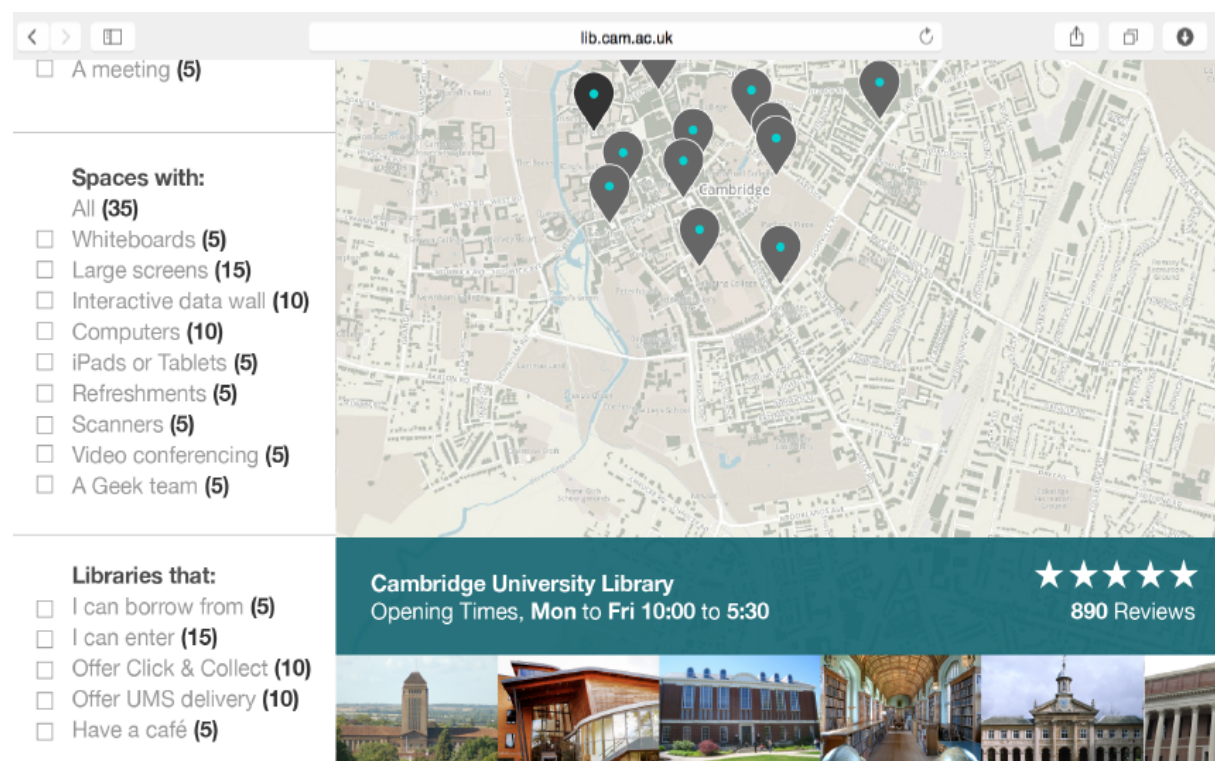




## Benefits

For the user: Found would provide a single starting place for all library resources and services, including printed books, printed journals, e-books, e-journals, places to work, expertise and services. The faceted search interface in Found would be fast and intuitive; it would make discovering things easier. Found would be designed primarily for touch screens and would use responsive design to automatically adjust to the screen it is being viewed on. It would be smartphone and tablet compatible, taking into account the user's current location (when available) and their borrowing rights in order to prioritise the resources most relevant to them.

For the library: Found would help to address the service discovery issue by giving users a single place to search for all library resources, spaces, services and expertise. Found would link users directly through to electronic resources, making sure that they were routed to the electronic resources provided by the library, and would make better use of the extensive digital catalogue.



## 02: The 'Found' Toolbar

Google is the natural place to start searching for resources, and individuals (including researchers and students) will often perform a Google search before visiting the library. This toolbar acknowledges that this behaviour exists and does not attempt to supplant it. When someone with the Found Toolbar searches in Google, it would add links to Google search results for any items in those results that are available within the Cambridge library system. It would also add links to any references to books, e-books, journals and e-journals. A user could then click that link or button to be taken to the catalogue record of printed material, or directly to the relevant e-book or e-journal. Cambridge academics, researchers and students would need to download the Found Toolbar. They could do so from the new University of Cambridge Appstore (see concept 4). It could be made available for most common browsers (Chrome, Firefox, Safari, etc).

### Benefits

For the user: The Found Toolbar would enable a user to access library resources when found through a Google search. The Found Toolbar would integrate into a user's browser and would require no changes to their searching behaviour. The Found Toolbar would augment the familiar Google Search Results page to include access options provided by Cambridge libraries.

For the library: The Found Toolbar would maximise the use of Cambridge physical and digital resources by making access intuitive when a user searches through Google.

## 03: 'Stacked' - The Cambridge Libraries App

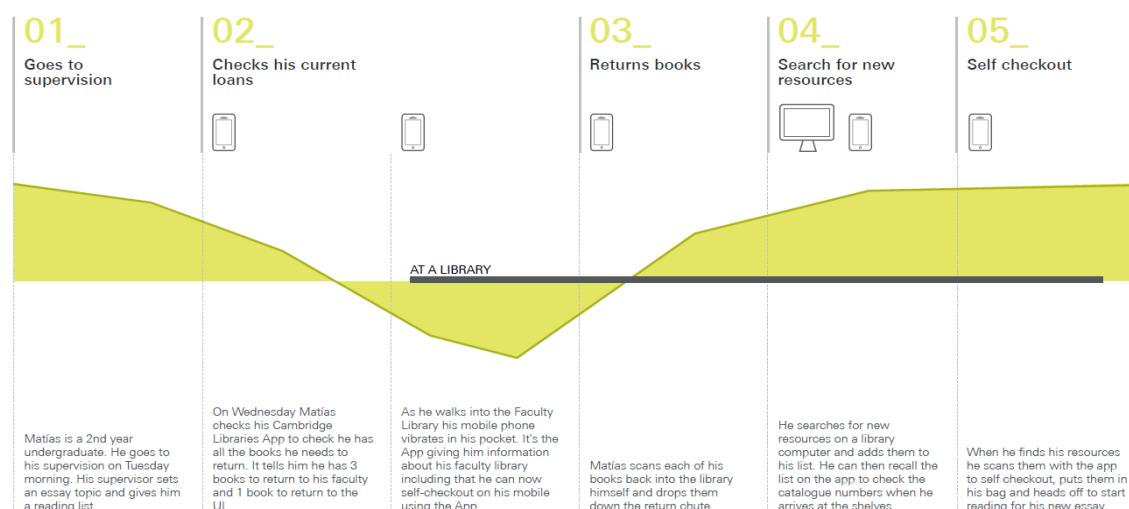
Stacked would be a new smartphone and tablet app, used to access library services when people are away from their computers. Smartphone usage figures show that people use their smartphones as much when they are at home as when they are not, so we would expect people to use an app of this nature from various locations: their college room, when they are in a library, from a lecture theatre or while they are on the street. Stacked would allow users to search for library resources and places to work. It would provide search

results tailored to the screen size of their device, and use the location awareness of the device to deliver the most convenient results for the user. The app would allow people to manage their library account, telling them what resources they have out on loan and the return dates of these. It would enable them to renew the resources (where possible) and provide access to services such as WhoHas? (Concept 5) and Click&Collect (part of Concept 10) depending on the level of the user's account. The app would also feature a barcode reader, to enable the self-checkout of resources at participating libraries.

## Benefits

To the user: Stacked would provide access to library services from any location, without the need for a desktop computer. It would be location aware, personalised and would take into account a user's borrowing rights to help find the resources nearest to them, and those they had the ability to access. Stacked would also help users locate resources within the library building without having to note down shelfmarks, and would in some cases enable people to check-out and check-in resources themselves. Stacked would help members of the University to find spaces to work in based on their individual needs.

To the library: Stacked would expose services that library users may not be aware of by making them available through mobile devices and platforms, facilitating quick and intuitive access. Library staff could use a variant of the app to check-out and check-in resources for library users when away from a staff terminal. This would free staff up from being anchored to desks.



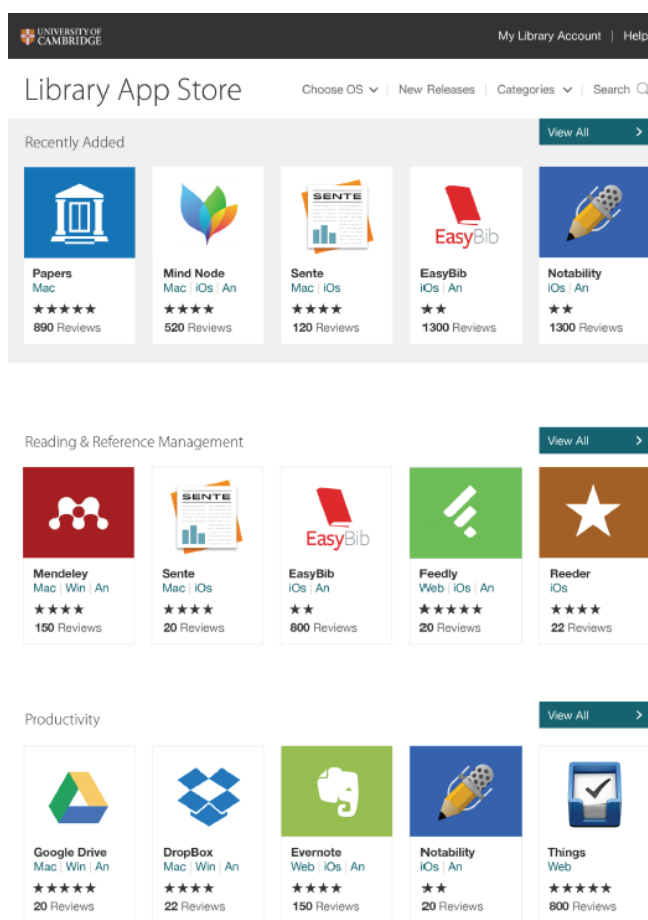
**Above: a user journey map illustrating how a student might use Stacked.**

## 04: 'Appd' - The University of Cambridge app store

Appd would be a new app store 'window' tailored to the needs of Cambridge academics, researchers and students. The range of content would be a little wider than that of a typical app store as it would include web applications, software for Windows and Mac, along with apps for iOS, Android and Windows Phone. It would include web applications, software and apps published by the University, along with the most appropriate apps from external developers. Stacked, the new Cambridge Libraries App would sit alongside Evernote, DropBox and Google Docs. Appd would be curated by librarians, however academics, researchers and students would all be able to suggest apps for inclusion. Users of Appd would also be encouraged to provide ratings and reviews of items already present in the service. The description of items within Appd would be tailored to the particular audience, in order to help academics, researchers and students choose the best apps for them. When deciding to download software or apps, a user would be taken to the relevant website or app store for their platform, rather than downloading directly from Appd itself.

### Benefits

To the user: Appd would enable users to find web applications, software and apps suited to a particular area of work or study, within a list curated by subject experts. They would also be able to see reviews and comments about how other people are using particular web applications, software and apps in their field. Users could find apps for all of their platforms in a single location. They could be confident in the fact that the web applications, software and apps were legitimate and safe to install.



To the library: Appd would attempt to satisfy an unmet, latent need, i.e. that there are lots of lists of web applications, software and apps for academics, researchers and students but that there is no 'one stop shop' for these. Appd would help users find the right technology for their particular need and academic discipline. It would also demonstrate that libraries understand technology and can help academics and researchers in applying the appropriate technology to their discipline.

## 05: 'WhoHas?'- A peer-to-peer sub-lending service

WhoHas would facilitate the sub-lending of printed resources, turning the existing 'black market' into a service mediated by libraries and library staff. It would be named after the common phrase used on Facebook to initiate sub-lending with other members of the Facebook group. Those interactions almost always start with: 'Who has...?' If an item was out on loan users would be able to request a transfer from the person who had borrowed it. The request would then be sent to their Cambridge Libraries App. If they did not use the App, they would be emailed a link. The two people could then agree to transfer it from one another, or they could find a way to share the resource. WhoHas would be embedded within other library channels, there would be no need for a specific WhoHas app or website; the service would appear as an option for all users from the catalogue and from the Libraries App. The option to use WhoHas would appear for every item currently out on loan. WhoHas would need to be a voluntary system in order for it to work effectively, so users would have to register for the WhoHas service. Registration would be an altruistic action, so it would be a good idea to reward this in some way, for example with indefinite loans.

### Benefits

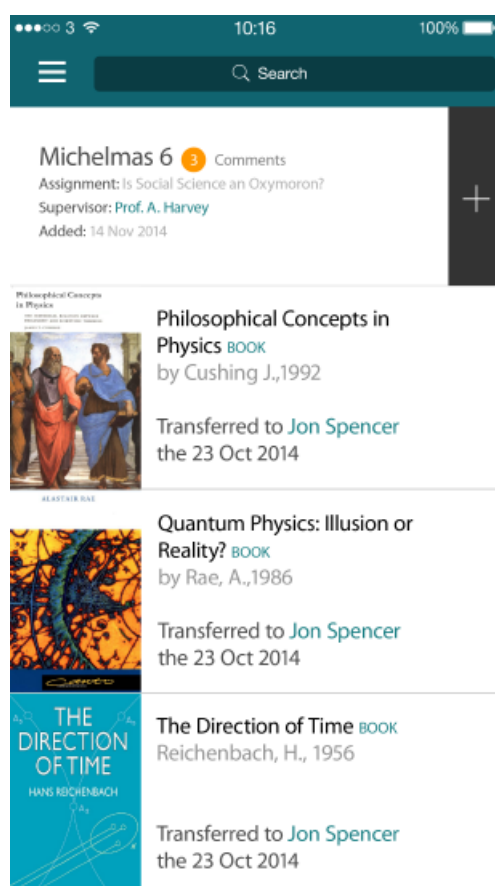
To the user: WhoHas would enable a user to get the resource they need without having to recall it from another user. The service would not be dependent on the number of people someone knows and would therefore not favour students in colleges with lots of people studying the same subject. WhoHas would reinforce the sense of belonging to the academic community, enable that community to self-organise and may also increase the sharing of ideas.

To the library: WhoHas would lead to less work for librarians in terms of managing recalls and fines. This time could then be spent on higher value interactions with library users. It would also lead to more efficient circulation of printed library assets; instead of books sitting in a student's room until the return date they could be used by other people. WhoHas would leverage existing behaviour and satisfy a need not currently being met by the library system.

(N.B. WhoHas was piloted in early 2015. The full report of that project is available here: <http://www.lib.cam.ac.uk/research/futurelib-innovation-programme/whohas>)

## 06: 'Study Magnet': Crowdsourced reading lists

Study Magnet would be a reading list app which would be designed to help students to prioritise their reading, and assist them in choosing material from a reading list that would be geared towards their essay or supervision activity. A student would enter their supervision and reading list, either title-by-title or by copying and pasting from an email or other document. Study Magnet would parse the list, recognising the individual titles. The student would then be able to confirm the results or adjust accordingly. Their reading list would be augmented with data from Study Magnet; the app would tell them how other students had tagged each title, and how many other people had used each resource for similar supervision topics. Study Magnet would then tell students where they could find each



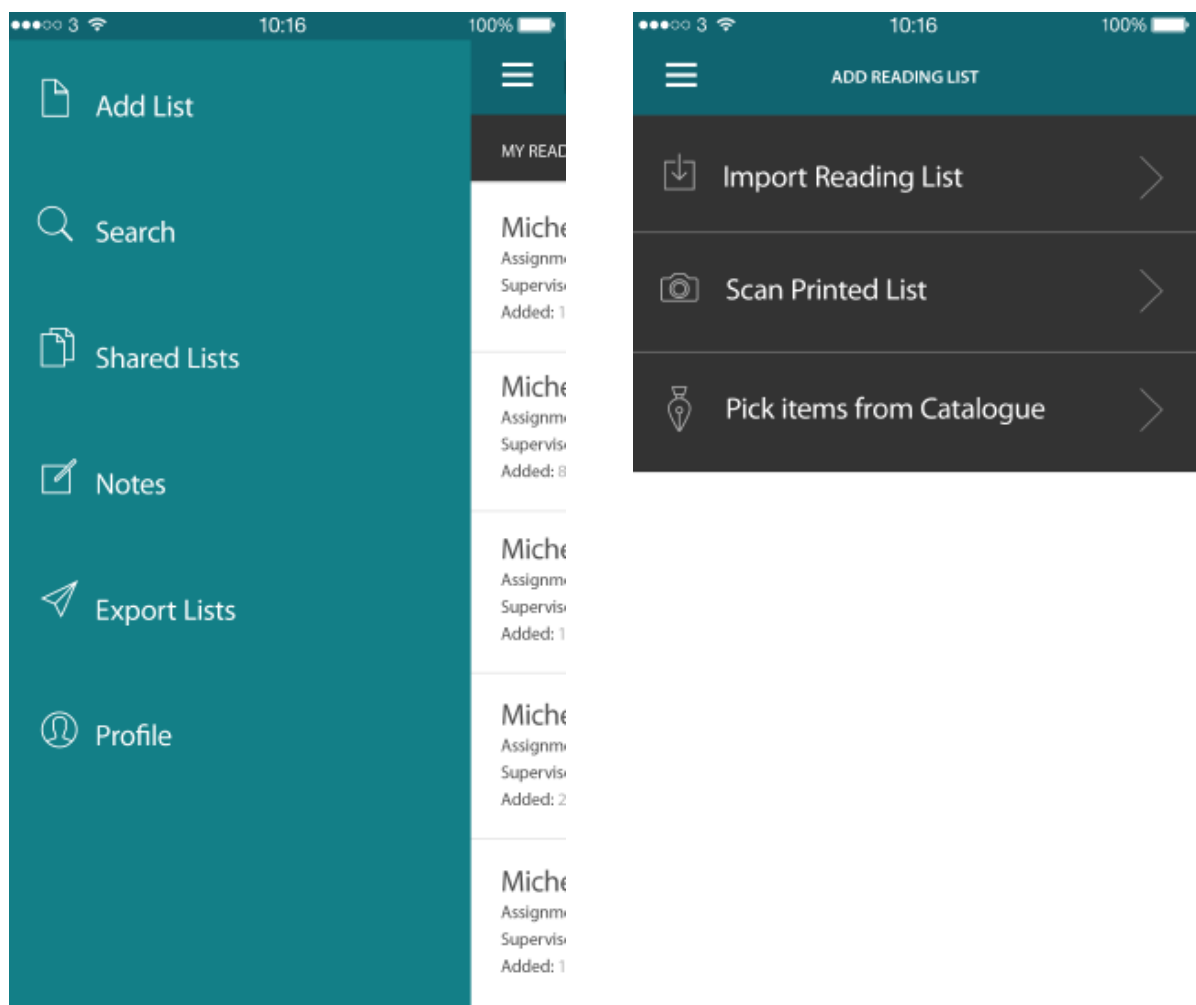
physical resource and electronic alternatives when titles were unavailable. Students would mark each resource they had read and used in Study Magnet. The software would use this information to build their bibliography for them, which they could then transfer into their essay.

## Benefits:

To the user: Study Magnet would help students to quickly find all of the resources on a reading list and would suggest electronic alternatives in situations where print resources were unavailable. Study Magnet would help a student to prioritise their reading and find the most helpful sections of books and other resources. Study Magnet would help a student keep track of the titles they had read, while also building their bibliography and reference list.

To the library:

Study Magnet would collect anonymous data about the titles on reading lists. This would help librarians to understand the demand for specific resources and plan accordingly. Study Magnet would assist library users in finding electronic resources when print was unavailable, thereby helping to maximise the use of digital collections.





## 07: CollabSpaces, FlexiSpaces and Digital Detox Zones

CollabSpaces would be working spaces for between 4 and 12 people, with the provision of large whiteboards, an oval table, and a simple stationery pack such as sticky notes and board markers. They would be spaces where students or researchers could work together for short periods of time (less than a day). In order to successfully manage CollabSpaces there would need to be a combination of bookable and walk-up spaces. This could be achieved in a number of ways. Certain user groups could be given first choice of reserving the CollabSpaces, or it could potentially be decided that the spaces could only be booked by Cambridge researchers. CollabSpaces could stand alone in groups of between 3 - 8 spaces, or could be dispersed between libraries and other buildings. We would suggest that there should be at least one group of CollabSpaces in each of the 3 University hubs: one on the Sidgwick Site, one on the West Cambridge Site and one in the centre of Cambridge. CollabSpaces would all be listed on Spacefinder (see Concept 8) so that they could be found and booked easily.

FlexiSpaces would be open-plan multipurpose spaces that could be reconfigured by users. They would be intentionally designated as spaces that are not intended to be quiet. Alongside supporting work activity they could be used as a home for services such as hiring tablet devices or host training sessions. This would deliberately create footfall and a certain level of background noise. Our research has shown that this white noise, similar to the sound of conversations in a café, can help some people to concentrate. FlexiSpaces would require desks and tables on wheels so that they could be easily configured. Mobile whiteboards would be introduced to the spaces to serve two functions: to allow people to work collaboratively, and to provide noise screens that would help to dampen the noise in the space. The acoustics of FlexiSpaces would have to be carefully considered; bad acoustics could create a very noisy environment that would not be suitable for working. Soft furnishings and screens could both be used to influence how noise travels.

Digital Detox Zones would be areas intentionally designed without WIFI. During our research students mentioned that such areas can be useful to remove distractions such as email, Facebook and WhatsApp. At certain times of the year and for certain types of activity WiFi

free zones are very popular for this reason. Digital Detox Zones would be clearly labelled as such and a deliberate attempt would be made to reduce wireless network and mobile phone signals. People could use Digital Detox Zones to aid their concentration, therefore they would also be designated as quiet spaces. Users of the spaces would be discouraged from using mobile devices. There are existing areas in many University buildings that suffer from poor wireless connectivity, these spaces are natural candidates for the installation of Digital Detox Zones. The zones would be clearly signposted, and listed in Spacefinder.



## Benefits:

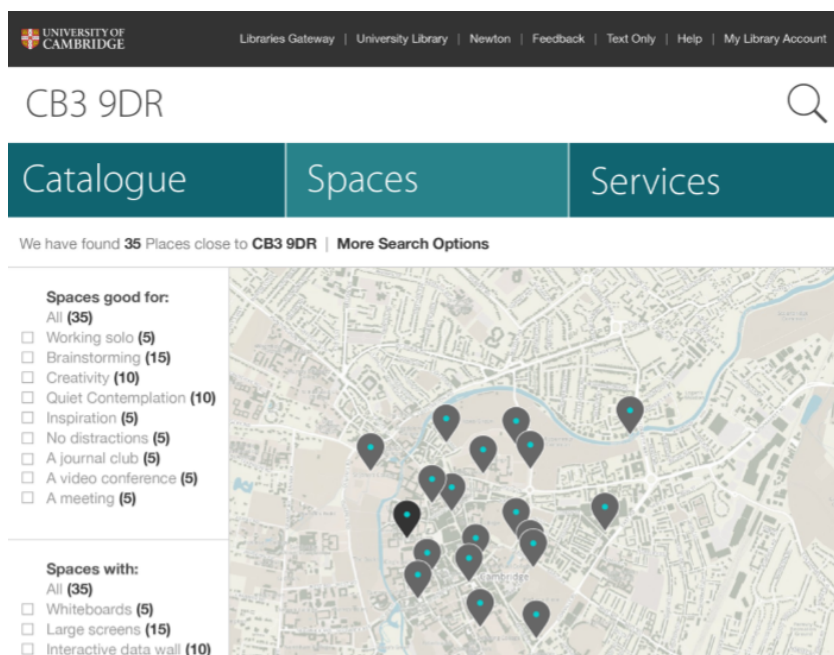
To the user: Research with students indicated that different people need different types of working environments. CollabSpaces, FlexiSpaces and Digital Detox Zones have been deliberately conceived as a set of environments to meet those needs. Academic research and interviews with experts indicated that researchers across disciplines would also welcome spaces that they could use for different types of work. It can be very motivating for individuals to see other people working, both within and outside of their academic discipline and the likelihood of someone crossing paths with other people studying or researching would also be increased.

To the library: A wider variety of working spaces would attract a wider variety of users to library buildings. This would allow for the potential to promote other library services. By providing more collaborative spaces the library would facilitate the academic community in working together, helping to demonstrate the value of libraries within the institution.

## 08: Spacefinder

Spacefinder would take the form of a search service that would enable users to find different types of spaces in which to work and study. It would list all CollabSpaces, FlexiSpaces and Digital Detox Zones across the University, as well as more traditional library spaces. Users would be encouraged to review spaces by selecting the purposes that they feel those spaces were best suited to. For example, a user might be asked if a working space is good for working alone, brainstorming, creativity, quiet contemplation, inspiration or group work.

Where possible Spacefinder would use an individual's current location to suggest the most appropriate available spaces nearby. Search filters would allow the user to adjust their



search until they found the perfect space for them. Spacefinder would only suggest spaces that a user had access to, for example, college libraries and other college spaces would only be shown to members of that college.

### Benefits

To the user: Spacefinder would help people to navigate the rich variety of working spaces in Cambridge and intuitively find the perfect space for a particular study or work activity.

To the library: Spacefinder would help to communicate that different library spaces exist and to maximise their usage. Spacefinder could also potentially allow academics and researchers to book CollabSpaces.

(N.B. Spacefinder was piloted in 2015-16. The full report of that project is available here: <http://www.lib.cam.ac.uk/research/futurelib-innovation-programme/spacefinder>)

## 09: Free-Range Library Staff

The Cambridge University Libraries App, Stacked, would allow students, researchers and academics to check out their own resources and check them back into the library when finished with. A variant of Stacked could enable library staff to provide assistance away from the desk. Anyone working in a Cambridge library could carry a smartphone loaded with the app. This would enable them to scan a reader's University card, then scan the resources they wanted to check out of the library. This would allow library staff to go to users around the library to provide help, not unlike staff at the Apple Store. Staff could be given a t-shirt to wear, or a brightly coloured staff lanyard, to easily identify them to library users.



### Benefits:

To the user: In large libraries, Free-Range Library Staff would be easier to locate. Instead of walking to a help desk, someone in need of help would be more likely to find a member of staff nearby.

To the library: This service would help to remove the physical barrier between library users and library staff. The ability to issue resources from a mobile device would increase efficiency in terms of the circulation of print resources.

## 10: VIP Services

Cambridge academics are under a lot of pressure and have incredibly busy schedules. It is therefore difficult for them to make use of physical library services. THE VIP Services concept is based on a tiered service model that in some areas provides more comprehensive services to members of faculty than to undergraduate students. The concepts outlined in this document are intended to encourage students to self-serve by providing intuitive, efficient experiences. Despite this emphasis on self-service, we believe that in many cases the concepts would improve their experience of libraries. Encouraging students to self-serve would mean that more resources would be available to satisfy more complex user needs. This would open up the possibility of providing value-added services to researchers and academics. Those services could include access for postgraduate research students and early career researchers to 'click and collect' or allow tenured faculty to have physical library resources delivered through the UMS (University Mail System). This would also include providing tenured Faculty with a named library account manager who would be able to help them get the most from library services.

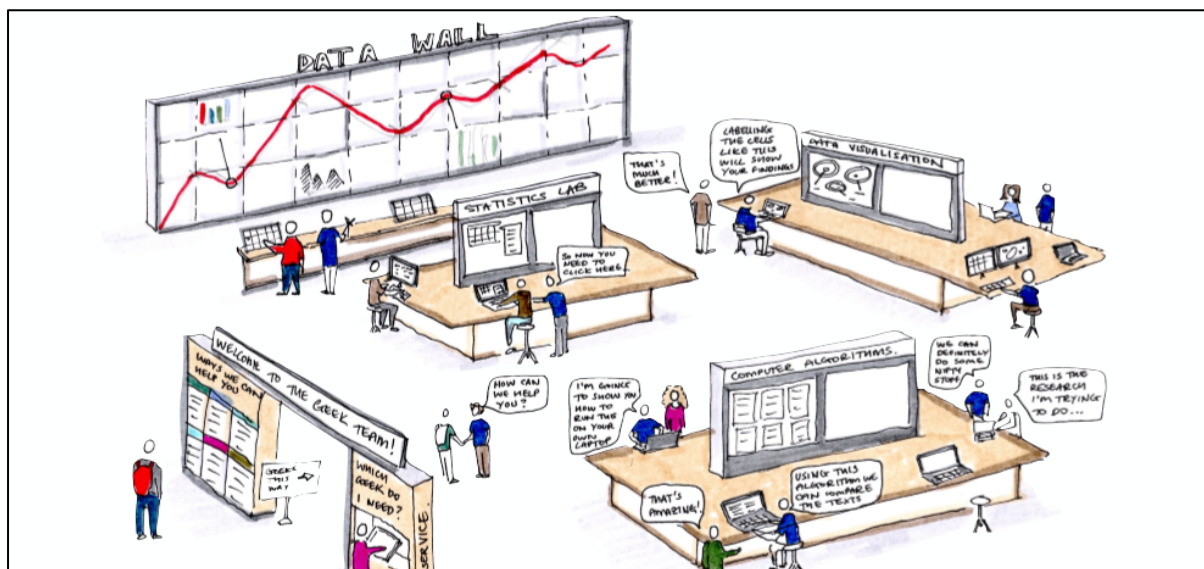
### Benefits

To the user: Each member of Faculty would be provided with a named library account manager, who would help them get the most out of library services. Their account manager would help to tailor library services to their needs. Click&Collect and UMS Delivery would provide physical resources quickly and conveniently. They would remove the need for trips to the library to find and borrow resources, allowing academics more time to fulfil their other commitments.

To the library: Library account managers would develop a relationship with the academic they were supporting, and a deeper understanding of the roles and challenges of academics at the University. Account managers would be well placed to identify opportunities for new library services. Account managers would help the library to continuously demonstrate value to faculty members. Providing Click&Collect and UMS Delivery would show that libraries understand the busy lives of academics and are actively working to reduce the burden.

## 11: The Geek Team

The Geek Team would make up a Digital Scholarship Lab that would support individuals across disciplines, completing projects in both AHSS and STEM subjects. The cross-disciplinary nature of the team is important; it would help them bring learning directly from one project to bear on another. The Geek Team would not be subject experts, as their skills would lie elsewhere. Their skills would be tailored to specific needs recognised within the institution, but the teams would almost certainly include expert technologists, data analysts, statisticians and data visualisers. The Geek Team would work on a variety of different sized projects and engage with University members on a project-by-project basis. Co-locating the team together would be vitally important to providing a coherent service and would make it easier for academics and researchers to access their services.



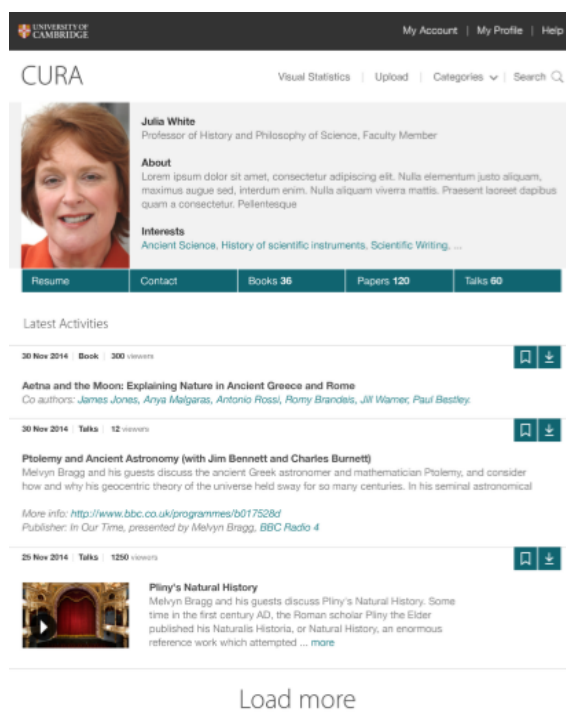
### Benefits

To the user: The Geek Team would provide a central source of skills to support research. They would provide a way of developing software or algorithms and accessing statistical, data analysis and data visualisation skills cost-effectively.

To the library: The Geek Team would support the creation of digital material, diversifying the library's role from its traditional one based around curation and consumption.

## 12: CURA - Cambridge University Research Archive

In addition to supporting research output, libraries need to become more involved with researcher profiling and the management of online reputation and expertise within universities. Our concept for CURA supports this involvement. It also supports the Research Councils UK (RCUK) requirement for author-accepted manuscripts to be deposited in an institutional or subject repository for the Research Excellence Framework (REF) assessment in 2020. CURA would ensure that authors are compliant with RCUK policy and that their papers are fully eligible for the next REF. CURA would build on the mediated deposit service already provided by the University Library. Compliance with funder requirements for Open Access is essential but insufficient. The Institutional Repository should also raise the profile of Cambridge academics and their work. CURA would integrate with systems like ORCID and services like Academia.edu, Figshare and GitHub so that academics could upload their work and supporting materials in a single place, and have them accessed through the repository.



### Benefits

To the user: CURA would ensure REF eligibility and increase the visibility of an academic through their profile and their work. CURA would integrate where possible with existing platforms in order to make maintaining an academic profile and contributing work efficient, and to reduce the number of places an academic needs to visit.

To the library: The library is the natural home of our proposed Research Archive. Managing the Research Archive will become an important responsibility central to University goals.

(N.B. CURA was explored under the project name 'North Star' in 2015-16. Information here: <http://www.lib.cam.ac.uk/research/futurelib-innovation-programme/north-star>)



## 7. WHAT HAPPENED NEXT?

Initial efforts of the emergent Futurelib Programme focused on exploring and validating (through testing, iterating and prototyping) - Concepts 5 (WhoHas?) and 8 (Spacefinder) through projects supported by Modern Human. Later in 2015 and early 2016 Concept 12 (CURA) was explored under a new project name: North Star, while elements of Concept 7 fed into a wider library space prototyping project entitled Protolib. Details of these projects together with links to project reports can be found on the Futurelib website:

<http://www.lib.cam.ac.uk/research/futurelib-innovation-programme>

At the time of writing the Futurelib Programme is still going strong, with a project exploring embedded librarianship having just begun and a second space prototyping project 'Protolib II' beginning next month.

Futurelib Programme

Cambridge University Library

September 2016

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Twitter: <http://twitter.com/futurelib>

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