

Insights from the Future Libraries
Product Forge Hackathon

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Introduction

Public services need to provide dynamic, proactive and relevant services to respond to the ever-changing needs of their communities. 'Ambition and Opportunity: A Strategy for Public Libraries in Scotland 2015-2020' highlights that despite a continued high level of support for public libraries, there is a need for the library service to continually examine its role and functions, and to be willing to work in different ways if it is to be sustainable and relevant for the whole community in the future.

To address this need, the Carnegie UK Trust in partnership with the Scottish Library and Information Council hosted Scotland's first public libraries focused hackathon, the 'Future Libraries Product Forge' in October 2016. The hackathon was the first to access open data from the public library sector in Scotland¹. The theme of the hackathon was 'reimagining the role and functions of the public library' and its aims were to:

- Raise awareness of digital innovation within library service delivery.
- Generate enthusiasm for alternative approaches to digital service design and project delivery.
- Provide participants with opportunities to start new library-focused digital ventures.

The Future Libraries Hackathon produced a number of positive outputs. The learnings from the hackathon are not confined to the libraries sector alone. We intend this guide to provide relevant information for library services but also for other public sector services.

Hackathons provide an alternative – but realistic and cost-effective – approach to generating disruptive ideas and initiating projects. Yet information on public sector-focused

hackathons is limited. The purpose of this report is to:

- Share an overview and learnings from the Future Libraries Hackathon.
- Demonstrate the value of hackathons for the wider public sector.
- Encourage more public libraries and public service providers to use open data.
- Provide practical guidance for hosting a hackathon.

To view a short summary video of the Future Libraries Product Forge search <http://bit.ly/2oahrCI>



¹ Open data is s non-personal and non-commercial data, which is accessible to anyone, via the internet, free of restriction on use.



What is a Hackathon? Hackathons, Hacks and Jams

There is no set definition or structure to a hackathon (or 'hack' for short), but there is broad agreement that it involves **the bringing together of a groups of individuals with a cross section of skills, to focus on a particular theme or challenge and produce a new solution within a concentrated period of time.** This solution may be a completely new product or the reworking of existing resources into a more efficient process or tool.

Hackathons originated to find technological solutions to problems. Hacks involved teams of developers, engineers and front-end designers creating a working product, prototype or piece of code. More recently, hackathons have had a much broader focus, bringing entrepreneurs, creatives and marketers into project teams. If the outcome of the Hack is a series of ideas rather than a working prototype, it may also be referred to as a 'Jam'.

"At SLIC, the idea of a hackathon was really exciting. Our aim was to harness the skills, experience and insights of the tech community in order to reimagine existing library services, and scope out services fit for the future. We were also keen to explore potential uses for our existing data sets, and to promote the benefits of open data across public libraries."

Gillian Daly, Head of Policy & Projects,
Scottish Library and Information Council

Future Libraries Hackathon: what we did

The Future Libraries Hackathon ran over four days in October 2016. The hack was facilitated by Product Forge, an Edinburgh based enterprise specialising in running hackathons that tackle challenging social issues.

Teams were supported by a group of mentors with a variety of relevant backgrounds including technology development, project management and the library sector. In total, over 70 individuals were involved with the hackathon.

DAY ONE: *Introductions and idea generation*

Teams were formed to include a cross section of skills including design, development and entrepreneurial thinking. Most participants did not know each other prior to the hack. A briefing paper was produced for participants, a Q&A session was held for participants to quiz SLIC and CUKT and open data sets² were made available.

- 2 Two data sets were provided by the Library Service of South Lanarkshire: aggregated monthly book issues and the stock catalogue. This data made it possible to identify patterns that facilitated better understanding of book issuing trends, popular titles and fed into the ideas generation of Hackathon teams. The data sets used during the Future Libraries Hackathon are freely available to view and download from the Product Forge page on the Urban Tide portal productforge.io/data.



DAY TWO: Library experts

Library experts from nine different local authority areas across Scotland joined participants. The experts took part in workshops on topics including open data and agile storyboarding. The experts were invaluable to the development of ideas into products, as they provided detailed insight into the specific challenges facing the library sector.



DAY THREE: Gathering feedback

Participants visited Edinburgh Central Library to get feedback on their ideas from library staff and users. This gave teams a much clearer understanding of their potential target markets and allowed the participants to appreciate the environment and context in which their products would be used. The CUKT and SLIC team undertook library user consultation to understand how the general public would like libraries to develop in the future. The results showed that 32% of those in the library that day wanted a greater range of services whilst 11% focused on the retention of library staff³.

³ For the full results of the survey visit <http://www.carnegieuktrust.org.uk/project/future-libraries-hackathon/>



DAY FOUR: Judging

On the last day, teams were given support to develop six-minute long presentations and prepare for the Q&A that formed part of the judging process. The judging panel was made up of representatives from the Carnegie UK Trust, SLIC and the technology sector. In total, seven teams pitched a diverse selection of products including several working prototypes. Cash prizes were not advertised, but were awarded to the top two teams.



After the hack: Development

All teams were offered continued mentoring support to develop their products. At the time of writing, two products were still in development. Future updates can be found by searching **#FutureLibPF** on Twitter or visiting www.carnegieuktrust.org.uk/project/future-libraries-hackathon

“I love a hack: the new teams, the rapid ideas, the energy and the bean bag naps! The Future Libraries Hackathon provided all of this as well as a space for people to experiment, design and build new ideas in an inspiring environment. It was great to be a part of the weekend and to see so many young people utilising their creative energy in such a productive way.”

Steven Russell, Co-Design Officer,
Young Scot, #FutureLibPF Mentor



Future Libraries Hackathon: outputs and outcomes

The Products

The following are a selection of the products and ideas created at the Future Libraries Hackathon⁴.

Library Go (Winner)

A gamified app to encourage young adults to become library users through a rewards-based system.

The Library Go team approached the task by analysing why they themselves were not library users and researching what apps were the most popular for their age group (18-22 yrs). The team identified that gamifying activities within the library, such as checking out a book or attending an event in exchange for meaningful rewards would be a sustainable and easily manageable tool for libraries to attract new library users.

Storing Stories (Runner Up)

A digital tool for collecting user stories and qualitative data about library impact on users.

From consulting with their library mentors, the Storing Stories team identified that despite the fact library staff have access to a breadth of quantitative data, they lack user-friendly tools to collect and process qualitative data quickly. Library staff have limited options to understand and prove the impact of the library and specific initiatives. The Storing Stories team created a graphical app where users select images rather than text to summarise impact, also allowing geographical mapping of impact.

Lamplighter

A digital platform that creates and signposts online educational resources and facilitates face to face study groups and peer to peer learning.

The Lamplighter team understood the power of library staff in facilitating events but also the effectiveness of bringing people together to learn. Their platform 'Lamplighter' allows users to search for online courses and join up with other learners and study together within library spaces to encourage higher completion rates and better engagement with the courses.

SpaceBook

A hotdesk booking tool for library users with a service manager interface.

The SpaceBook team drew upon their own experiences of difficulties in finding desk space, to create their product. The app allows users to book space, and to understand the environment of that space, by listing floor plans, photos and additional information such as plug points.

⁴ For the full list please visit www.carnegieuktrust.org.uk/blog/what-the-hackathon-teams-created

The Learning: what can the Public Sector gain from a Hackathon?

Whilst the tangible prototypes and ideas are highly valuable outputs of a hackathon, there are a number of broader insights to be gained.

- Flexibility
- Cross-Team Working
- Dedication

Flexibility

The key premise of a hackathon or similar activity is that it is run over a very condensed period of time. Teams have just a few hours to form, generate ideas, prototype and present.

This approach encourages working in an 'agile' way. Prototyping creates a strong focus on continual user feedback, an approach adopted by mainly tech-based companies and start-ups. The aim is to deliver a minimum viable product (MVP),

the absolute basics a product needs to perform its intended function. This allows teams to gain reactions from user groups as quickly as possible. These products do not have to be perfect or without problems when they are launched. They allow for ideas to be tested, to understand what works and importantly, what does not, without requiring high levels of investment.



Cross-Team Working

The hackathon methodology also strongly emphasises the need for small multi-disciplinary teams involving creative, technical and business-minded individuals focussed on a single project. This allows for multiple perspectives and approaches to be drawn upon for efficient delivery of projects and to work through challenges. It also strongly encourages participants to create teams with others who they have not previously worked with and do not know. This enables a diverse range of ideas to emerge, and allows individuals a greater freedom to contribute fully, uninhibited by ongoing relationships.

Dedication

One of the most striking behaviours noted throughout many hackathons, is the dedication and commitment that teams display. This is not just in terms of physical hours, (many participants work late into the night), but, in working tirelessly on a theme many were unfamiliar with – for no tangible prize.

In the Future Libraries Hackathon, the cash prize was only announced minutes before the winner, so for the majority of the weekend, teams were simply working towards the goal of producing the best product, not for a specific monetary incentive. The lack of prize did not diminish the level of effort with which teams approached the task.

In addition, hackathons demonstrate the value in an unconventional user group assessing a problem.

“I really feel as if I’ve made a difference and helped focus on what is important to us in libraries... it has been quite exciting.”

Systems and Support Librarian,
Stirling Council, #FutureLibPF Mentor

Young people are one of the least engaged age groups with public libraries. The majority of participants at the Future Libraries Hackathon were students and therefore familiar with their university library, however, many were not aware of the range of facilities that Scotland’s public libraries have to offer. As a result, the hackathon not only engaged a previously disengaged audience, but allowed for a different perspective of ideas, several of the products focusing on solving the needs of younger audiences.

Flexibility, dedication and teamwork allow for the creation of a very positive environment. Giving a group of people a challenge within a hackathon environment allows for a wide range of ideas to be generated, free from many of the constraints in everyday work.

Whilst not all ideas developed in a hackathon are possible to implement, they kick start new conversations. Understanding the basic needs of service users is at the heart of these conversations.

“We expected the main outputs of the weekend to be ideas. We were amazed by the number and the quality of working prototypes created over the course of the event. The involvement of service users in the design process was invaluable; teams were very responsive and grateful for their input.”

Gina Wilson, Carnegie UK Trust



Sector Engagement

Hackathons provide a novel and engaging format with which to connect with libraries and many other aspects of the public sector.

- Expert participation
- Offsite involvement
- Engagement with national strategy or policy
- The opportunities of open data
- Online traction

Expert participation

The most direct way to involve individuals in a hackathon is to invite them to participate in the event. Alternatively, they can be very effective as an expert mentor to deliver workshops on specific topics, support teams to shape their products or simply offer guidance and insight into the day to day workings of the sector. This is useful for the teams as it provides them invaluable context, but also gives sector staff a chance to reflect on their challenges and expose them to an alternative approach to solving problems.

Offsite involvement

Where appropriate, teams can go and visit relevant buildings or areas of work. This provides further physical context which teams may not be familiar with. It allows teams the opportunity to gather primary user feedback from their target market who can give a fresh perspective on their ideas. Furthermore, it gives the host organisation ample opportunity to collect responses from the general public and engage a wider group of staff who may not have been able to attend the hackathon.

“The participants gained so much knowledge and understanding of libraries and what challenges we face – it was amazing to hear them talk about it. This alone means the event was worth doing: it created library advocates in a slice of a generation that may not use public libraries or may not have known much about us previously.”

Aude Charillon, Information Officer,
Newcastle Libraries. #FutureLibPF Mentor



Engagement with national strategy or policy

Hackathons also provide an excellent opportunity to share policy, strategies and sector reports with a wider audience. These documents are perfect materials for providing teams with initial knowledge, context and priority areas to build on. The National Strategy for Public Libraries was a key starting point for many of the teams and allowed them to couch their product ideas in evidence.

The opportunities of open data

The potential for open data is vast. An Independent Review of Public Sector Information published in 2013 cited an overall value of public sector information of around £6.8bn a year to the UK economy in terms of direct economic and wider social benefit⁵.

This wide social benefit is delivered through enabling:

- **Choice:** Open data enables the development of innovative products which public service providers would not have the time or resources to create in house, giving the public access to range social and economic benefits.
- **Employment:** Data can be utilised by anyone, enabling new businesses to be created, and generating new employment opportunities.
- **Accountability:** As the data is publically owned, it is regarded as a civic responsibility to ensure that publicly-driven data is shared to the best of organisations' abilities. This also serves to increase transparency and engagement with the sector.

5 *Shakespeare Review*; online 2012 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/198752/13-744-shakespeare-review-of-public-sector-information.pdf [accessed March 2017]

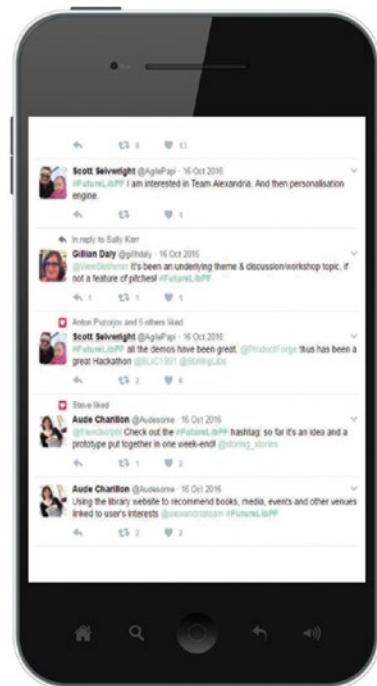




Online traction

Due to the nature of the event, hackathons also lend themselves well to creating rich online content. One of the most effective tools is an event hashtag. The Future Libraries hackathon used the hashtag #FutureLibPF and resulted in over 1,100 tweets by more than 200 different users, gaining over 2 million impressions (appearance on different feeds). This presence spread well beyond the attendees at the event and allowed the themes to be seen and discussed by a much wider virtual audience.

Alternatively, hackathons also provide a great opportunity for engaging photo and video content. Free online design tools allow for a range of media such as collages, GIFs, infographics or quotes to be created easily and quickly.



Practical Guidance for hosting a hackathon

This guide has been written from the perspective of a hackathon sponsor. We have identified some key questions to consider if you would like to run a hackathon. If you plan to involve a facilitator, they may be able to assist you in answering some of these questions.



Theme

The first questions help you identify why you wish to run a hackathon and what you want to get out of it. These questions will help to shape the scope and overall theme of your event.

Why do you want to run a hackathon? Are you interested in finding a solution to a particular problem, or general innovation within the sector?

Are there specific outputs that you want to produce? Is your aim to create prototype products that could potentially be taken to market? To rethink an existing process? To test an alternative methodology or approach?

If you want to address a specific question, how can you ensure it is of interest to a wide range of people?

Facilitation

Hiring a facilitation company or delivery partner may be a time and cost saving resource to deliver your hack.

Do you have the resources in terms of time, expertise or networks to run a hackathon in-house? You'll need to provide wifi access and staff who are confident to support people using IT. If you make data available, you should have someone present who can answer questions about it.

Have you assessed options for external facilitation? There are a number of organisations, in both the private and third sector, who are trained and experienced in running hackathons and can provide invaluable assistance in developing and executing a hackathon. Input from external companies can vary from simply providing logistics such as organising the venue, catering and recruitment, to being fully integrated in the planning, hosting and delivery of the event. Organisations such as Product Forge are fully involved in the delivery of the event from inception.

“The Future Libraries hack brought together people from a range of backgrounds, with a real mix of skills. Teams asked good questions, challenged assumptions, and resented new ideas. It was inspiring to see what they could come up with given just a few days to develop their work.”

Jamie McHale, Director, Telco,
#FutureLibPF Lead Mentor



Costs of a facilitation company can range, depending on the size, length of the event, from around £1,500 for a 24-hour event and their level of input to £10,000 for a four-day format. (This fee can be split across a number of supporting organisations in order to lower costs.) Facilitation companies can vary in their focus, expertise, expense and level of involvement, so getting a variety of quotes will allow you to understand which format is the most suitable for your particular event.

If you have chosen to use a facilitator, have you had an initial conversation to ensure that both parties have clear agreement on the focus and aim of the event and each organisations role and input expectations?

Do you have a communication agreement in place that suits both parties? The public sector may require longer timelines, more detailed plans or updates than new technology companies, so outlining expectations is an important step.

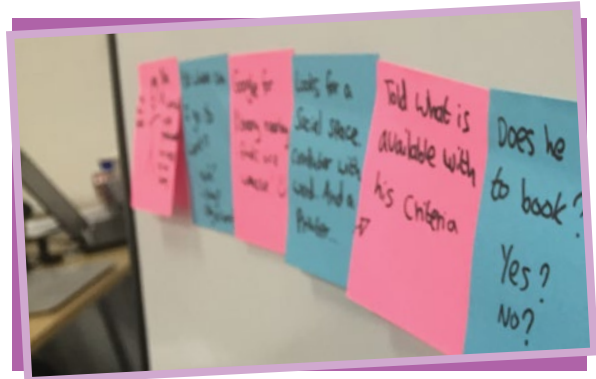
Event Delivery Logistics

Once you have decided on a theme and whether or not you will be using a facilitator, next you need to assess who to invite, when to host the hack and for how long, find a suitable location and develop a detailed agenda.

Who

Participants

- Who will be useful to recruit to attend your event? Which groups may be relevant or interested in your theme? Whilst hackathons are usually attended by students, individuals of any background can provide a variety of skills valuable to a hackathon.
- How many participants will you need to sign up to make the event viable?
- Will your event be free to attend or carry a charge? Charging a small fee reduces drop outs, but consider offering subsidised or free places to make it accessible to all groups.
- What are the best ways in which to reach your target audience? Social media, through networks, in-person promotion?
- What PR can you generate to increase sign-ups and interest in your event?



Mentors

- What type of mentors do you think would be useful for your event? Technically skilled, entrepreneurs, sector experts? Specify what level of time commitment you expect – the full event or drop-in sessions such as idea generation, specific workshop delivery or presentation reviews?

Judges

- Who can you invite to judge? This will depend on the theme and judging criteria you have set. Who will be able to ask meaningful questions or offer meaningful progression for the products? Are there judges that would attract lots of participants to attend? Who from the sector would want to be involved and see the results?

When

What date suits your participants, are there times of the year that should be avoided, for example exam times for students or bank holiday weekends?

What is the appropriate length for your hackathon? Will 24 hours be enough or would 48 or 72 be more effective? Hackathons of different lengths require slightly different considerations and longer events would need more resource investment.



Where

Will your location get the best out of the participants? Will it be a nice environment to spend a long period of time? A hackathon venue is not just about providing a space to work, it includes ensuring that you are able to develop a positive and creative environment for your participants. Does it have lots of natural light, windows that can open, break-out spaces, lots of plugs, 24-hour access and security?

Is there a location relevant to your theme? Or a venue from which you can easily access your user groups or relevant resources?

What

The specific format of your event may be determined by the time period, but you may also wish to consider additional activities such as workshops, market research, user feedback or social activities.

Do you want a structured programme of events or would you prefer an introductory session and then allow participants to use their time as they please?

How will you introduce participants to your theme and challenge? Will you prepare an introductory presentation? If so, what is the key information that needs to be communicated?

