Frasan – Research report

Tiree's mobile heritage app

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Executive Summary

Background

As part of the Digital R&D Fund for the Arts in Scotland, An Iodhlann, the museum and historical archives centre on the Inner Hebridean Island of Tiree, was granted money to create an HTML5 app, Frasan. Frasan enabled mobile access to items from An Iodhlann's archives, with the intention of engaging with Tiree's visitor, diaspora, and local communities, while on the island and remotely. The project also had the intention of furthering the aspiration of the An Iodhlann project partners to make Tiree a 'pathfinder digital community', within the broader context of the museums and archives in the digital age, and digital technologies in rural communities.

An Iodhlann was granted £21,300 from the Fund for the development of Frasan, with an additional grant of £1000 from the Tiree Community Development Windfall Trust. The project was funded from June 2012 to March 2013.

The project

The project aimed to 'make the most of archives through digital technology', with sub-objectives being to:

- leverage Tiree's existing local archives to create mobile experiences for island visitors, and geographically indexed information for historic study
- give local historians access to archive data in the field and open up data for local historians, and potentially digital humanities researchers outwith the island
- provide an experience that will attract audiences who might not otherwise engage with the centre
- improve services for existing users by making the archives available outside the centre, when in the field
- create a platform from which to develop future digital projects and installations
- become the first British local museum to 'decentralise' content
- allow An Iodhlann to engage with a younger demographic and increase its revenue stream by attracting funding
- have a symbolic impact demonstrating that far-flung areas can still be at the forefront of digital technology, and that Tiree can be a 'pathfinder digital community'.

The project partners were An Iodhlann itself (led by Dr John Holliday and Janet Bowler, the Chair of An Iodhlann and Archivist respectively), and the tech partners Alan Dix, Professor of Computing Science at the University of Birmingham and Tiree resident, and Mark Vale, a freelance computer programmer based on Tiree, who oversees the island's community broadband network via the company Community Information Technology (CIT).

The project developed from June 2012 to March 2013, with the app being launched in March 2013.

Results

The results of developing Frasan in summary were:

- 1889 downloads in its first year, a figure which surpassed threefold the project partners' expectations
- a c20% uplift of visitor figures to An Iodhlann
- a doubling of visitors to the An Iodhlann website from the previous year
- inspiring the establishment of a crowdsourced collection of Tiree photographs and other objects via a Facebook group, Tiree Memories
- archival and cataloguing practices at An Iodhlann enhanced to include geolocation
- ongoing development of Tiree as a 'pathfinder digital community'

Insights

Insights derived from the development of Frasan relate in particular to technological challenges and solutions; R&D approaches and project management; testing and feedback; and budgeting. The key lessons learned from the project were:

- A hack, or agile R&D approach, enables the quick development of prototypes which facilitate testing and proof of concept. However, the iterative and experimental approach can be challenging from a project management perspective.
- Key questions about the selection and presentation of content require a consideration of the perspective of users, which can be hard to access and market-test.
- Small community networks can bring significant buy-in and engagement to digital projects, but can also be reliant on the unpaid efforts of key individuals, with significant risks to projects if key individuals cannot carry out their work.
- Digital technologies can enable substantial access by and to rural and remote communities, including their heritage.

Future

Future plans relating to Frasan include the development of a new website for An Iodhlann, using the same project team; further marketing and publicity in the summer 2014 season; and thinking around developing revenue streams via further funding applications. The number of archival objects included in Frasan will be doubled, in association with the development of the enriched An Iodhlann website.

1. Background

Frasan (Gaelic for showers or seeds) is a mobile heritage app created by An Iodhlann, the island museum and historical archives centre on Tiree. Tiree is the most westerly of the Inner Hebrides, approximately twelve by three miles in size, and with a population of 653 recorded in the 2011 census, a figure which has decreased from 770 in 2001, a 15% decline.[1] Tiree has a substantial diaspora, and a tourism footfall of c15,000 a year. Many of the visitors are young, and attracted to the island's beaches for water and windsports.

An Iodhlann has a physical base on the largest island community, Scarinish. It is a charity dependent on a staff of local volunteers, and a small bequest to fund it.[2] An Iodhlann estimates that 10% of visitors to the island visit An Iodhlann.[3]

Frasan is based on digitised versions of c300 of the c12,000 items from An Iodhlann's collection of photographs, documents and objects. Some of these items are available online at An Iodhlann's website, but the majority were only available for view at the centre itself. In the app, the digitised objects are connected to short explanatory texts, and geolinked to the main communities on the island, as well as an online database of place names on Tiree.

The app, created in HTML5 in order for it to be used across a variety of devices, presents to the user a front-end with two map versions of Tiree: one being a hand-drawn map of the island; the other, the Ordnance Survey map. The app has integrated GPS tracking, so users can see their location on the island in relation to the digitised versions of the objects. The app can be downloaded onto mobile phones, tablets and computers, with additional content accessible when there is a 3G or Wi-Fi connection. The app does not include sound or video clips (although An Iodhlann has collections of both), due to the large size of such files.

Frasan came about as a project through a range of existing networks and relationships. One of the technology partners, Mark Vale, had already worked with An Iodhlann to support its website. The project itself, while drawing on existing data in digital form (An Iodhlann's catalogue and the Tiree Place Names website), was initially conceived by Professor Alan Dix. It developed from his interests and existing work in the human interface with mobile technology, and the importance of technology 'at the margins'.[4] The project was then conceptualised further with An Iodhlann (the Chair of An Iodhlann, Dr John Holliday and the archivist, Janet Bowler), and was awarded in June 2012 a grant of £21,300, with an additional grant of £1000 from the Tiree Community Development Windfall Trust.[5]

The creation of Frasan was important to An Iodhlann, and to the broader Tiree community, in terms of its 'mobilisation' of objects from the centre's collections. Tiree has a substantial influx of visitors to the island every year, but only a small proportion of them visit An Iodhlann. A number of items from the collections (c500) are available via the centre's website, but the intention of Frasan was to present this information as an app, in which geocoding enabled users to see digitised objects in relation to locations relevant to the object. As many of the visitors to Tiree are interested in the outdoor sports possibilities afforded by the island, the aim was to take objects from the centre outdoors, and to attempt to engage with a younger demographic in particular than the typical visitor to An Iodhlann. The remote access, it was hoped, would therefore enable a greater engagement with An Iodhlann's

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[1] '2011 Census Provides Worrying Results', http://antirisdeach.com/latest-stories/2355/, accessed 22 February 2014.
[2] An Iodhlann, 'Digital R&D Fund for the Arts in Scotland Application', April 2012.
[3] Interview with Alan Dix and John Holliday, March 2013; Interview with John Holliday, 26th November 2012.
[4] Field Notes from conversation with Alan Dix, August 2012; Interview with John Holliday, 26th November 2012; Interview with Alan Dix, January 2013.
[5] 'Six Scottish arts and cultural organisations selected to pioneer digital research and development projects', http://www.nesta.org.uk/news/six-scottish-arts-and-cultural-organisations-selected-pioneer-digital-research-and-development, accessed 22 February 2014. An Iodhlann, 'Digital R&D Fund for the Arts in Scotland Application', April 2012.

holdings, potentially encourage visits to the centre itself, and also create a platform for further digital projects.

More generally, the idea of 'decentralising' content from a local British museum was an innovation that could potentially act as a model for other such collections, as well as providing a model for how small and remote communities may take advantage of digital technologies in a variety of ways. Enabling remote access to archival content, which is data- and geo-linked in a number of ways, also affords possibilities to individuals from the Tiree diaspora and historians to engage with holdings, and to digital humanities scholars engaged in new ways of making collections available and using existing ones in a number of ways in order to produce new knowledge and understandings.

An Iodhlann's development of Frasan occurred within a broader context of museums and archive collections using a range of digital technologies to engage with existing and new audiences. Such developments both increase access and engagement possibilities for audiences, and also contextualise archival objects and collections in new ways. Digital technologies can provide additional and enhanced information about such objects and collections, making linkages between objects and their varying contexts (in An Iodhlann's case, for example, physical location, broader historical contexts, or explanation of place names). This enhanced information can extend the knowledge and engagement around archival objects and collections, reshaping understandings of local, regional and national histories and cultures.[6]

Tiree's rural and remote location also places the development of Frasan in the context of rural digital cultures and economy. The capacity for digital technologies to sustain and build rural communities is being explored via the current Research Councils UK dotrural hub, and in particular the CURIOS project which, like Frasan, is engaged with thinking about and providing tools for digital archives and local heritage to develop digitally.[7]

2. The project

As articulated in the original application, the overall aim of the project was 'making the most of archives through digital technology', with sub-objectives being to:

- leverage Tiree's existing local archives to create mobile experiences for island visitors, and geographically indexed information for historic study
- give local historians access to archive data in the field and open up data for local historians, and potentially digital humanities researchers outwith the island
- provide an experience that will attract audiences who might not otherwise engage with the centre
- improve services for existing users by making the archives available outside the centre, when in the field
- create a platform from which to develop future digital projects and installations
- become the first British local museum to 'decentralise' content
- allow An Iodhlann to engage with a younger demographic and increase its revenue stream by attracting funding
- have a symbolic impact demonstrating that far-flung areas can still be at the forefront of digital technology, and that Tiree can be a 'pathfinder digital community'.[8]

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[6] See G Wayne Clough, *Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age* Washington: Smithsonian Institution, 2013, http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf; Josef Hargrave, 'Museums in the Digital Age', 2013. Available from http://www.arup.com/publications/museums_in_the_digital_age.aspx
[7] http://www.dotrural.ac.uk/; http://curiosproject.abdn.ac.uk/.
[8] An Iodhlann, 'Digital R&D Fund for the Arts in Scotland Application', April 2012. Interview with John Holliday, 26th November 2012.

The principle research question was therefore to gauge the extent to which digital technologies could be used to extend the reach and use of An Iodhlann's archives, both through the app itself, and as a spur to visit the centre.

The project was led by four key individuals. Dr John Holliday (the island GP) is the Chair of An Iodhlann, a voluntary position linked to his interests and expertise in local history. Janet Bowler is An Iodhlann's part-time archivist. The tech partners were Alan Dix, Professor in Computing Science at the University of Birmingham, and Senior Researcher at Talis. He is an expert on Human-Computer interaction (HCI), and also lives on Tiree. Mark Vale is a freelance computer programmer based on Tiree, and is contracted to oversee the island's community broadband network via the company Community Information Technology (CIT). The nature of island life means that networks are small and close: 'on islands, things are different'.[9] John acted as An Iodhlann's project lead; Janet had responsibility for selection of objects and copywriting; Mark covered data processing and integration of the app with the website; and Alan was responsible for developing prototypes and linked data work.[10]

Following notification of funding in May 2012 and the project start date in June 2012, the project initially developed over summer/autumn of 2012 in order to have ready prototype versions of the app for the Tiree Wave Classic and Tiree Tech Wave in October 2012 (the former a long-established windsurfing event which draws participants to Tiree from around the UK; the latter a twice-yearly event co-organised by Alan Dix, bringing together a mix of computer scientists and others interested in the practical, social and philosophical possibilities of digital technologies).

These early prototypes were used to engage and initiate discussions, and suggest what might be possible, using versions that could be rebuilt with relative ease in response to user feedback and testing of the technologies.[11] This was an R&D approach, which could be described as 'perpetual' or 'constant beta'.[12] The app was created in HTML5, an intention from application stage which meant (despite low development costs) the app would be available cross-platform, offline, and as a web-based version for desktop and laptop computers.

In order to develop the content, the archivist selected a small proportion of the large number of items held by An Iodhlann. Ten to twelve items were chosen to represent each of the thirty-one communities, with a mix of objects for each one selected down from approximately 150 items per township (e.g. from different chronological periods, a toy, a photograph of a beached killer whale, pages from a school log book). Some objects, particularly photographs, had already been digitised, but other documents needed to be scanned, and objects had to be photographed. Larger items (books and dissertations) were excluded, as were photographs of individuals because of issues either to do with families not wanting photographs to be included, or indeed feeling excluded if their antecedents were not. Local sensitivities were therefore an important consideration in this process. Additional research was conducted for some items.[13]

For Janet Bowler, writing copy to a length appropriate for a mobile app required an active, trial-and-error learning process. She created copy of various lengths and tested it on smartphone and tablet screens to gauge how long descriptions and contextualisations should be for the platform and the audience. This iterative process of 'editorialising' archival content was done with the potential audience for the app (a younger demographic than that which normally engaged with An Iodhlann) and the platform in mind. However, the project team were aware that the suitability of copy length to

[9] Field Notes from conversation with Alan Dix, August 2012.
[10] Field Notes from conversation with Alan Dix, August 2012.
[11] Field Notes from conversation with Alan Dix, August 2012.
[12] Field Notes from conversation with Alan Dix, August 2012; Interview with Alan Dix and John Holliday, March 2013.
[13] Field Notes from conversation with Janet Bowler, June 2013.

the platform could only be trialled in the summer season of 2013, after the funded project period.[14] As part of this process, the archivist geolocated the chosen objects using a pin on Google maps. This geocoded data was then also entered into the existing An Iodhlann catalogue as part of the metadata record.

The iterative development process was continued through to March 2013, and the formal launch of Frasan during the spring Tiree Tech Wave. A bespoke version of the app was created (including geolocation of accommodation where Tiree Tech Wave participants were staying while on the island). This launch was accompanied by promotion via the revamped An Iodhlann website, print leaflets, and an item in the local newsletter, *An Tirisdeach*.[15] As such, the development of Frasan adhered closely to its project milestones, although further testing and development took place over the main season (May-August) and Tiree Wave Classic in the autumn of 2013, the periods during which most visits to the island are made. An Iodhlann estimated that 500 downloads of the app over this period (summer-early autumn 2013) would prove a successful indicator.[16] In July and August 2013, Frasan was used by the island's Community Access Officer (with a loan of a tablet from An Iodhlann) in his very popular guided walks on Tiree, with the tour groups finding the app an interesting supplement to the physical experience.[17]

3. Results

Frasan was launched to schedule in March 2013, and is now available for visitors and inhabitants of the island. An Iodhlann's estimation of 500 downloads as a success indicator was easily surpassed, with this number being achieved in March and April, the first two months after launch (nb that download figures include multiple devices for the same person, or reloads), as Table 1 indicates. Over the course of the year from March 2013-February 2014, 1889 downloads were recorded.

	Visitors *(Number of unique visitors to the app site N.B. not including visitors via An Iodhlann website)*	Click-Thru *(Number of click-throughs from An Iodhlann Frasan page)*	Downloads *(Number of times the offline app has been downloaded. This includes multiple devices for same person, or reloads)*
Mar-13	238	246	385
Apr-13	408	283	283
May-13	209	99	179
Jun-13	172	77	122
Jul-13	157	88	143
Aug-13	149	67	80
Sep-13	165	43	82
Oct-13	152	60	175
Nov-13	146	40	76
Dec-13	134	28	85
Jan-14	136	29	110
Feb-14	134	44	169

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[14] Frasan launch, An Iodhlann, March 2013; Interview with John Holliday, 26th November 2012; Interview with Alan Dix and John Holliday, March 2013.
[15] '"Frasan" Takes An Iodhlann's Message to a Beach Near You!', *An Tirisdeach*, 15 March 2013, 11.
[16] Interview with John Holliday, 26th November 2012.
[17] Notes from Janet Bowler, February 2014.

Totals	2200	1104	1889

Table 1: Frasan Usage Data Year 1: March 2013-February 2014

Download numbers were particularly high in March 2013 (Tiree Tech Wave and the launch) and the two subsequent months (April and May). October 2013 saw another peak (Tiree Tech Wave and Tiree Wave Classic), as did February 2014. The download figures were much higher than anticipated, and were very pleasing to the project partners. Nonetheless, the partners are aware that downloads concentrate around particular moments at which more targeted and promotional efforts for the app were possible. Given the target audience of summer visitors, the download figures over the summer could have been higher, although it is possible that people were downloading the app remotely before travelling to Tiree (data are not available on the location of downloads). There was some evidence of usage of the app via pings, but these are not particularly conclusive given the variability of information gathered via on and offline versions, and the possibility of figures being heavily skewed by a single user leaving a map open in a browser.[18]

In terms of An Iodhlann's intent to attract more visitors to the museum and archives centre itself, Frasan appears to have had an effect. An Iodhlann saw an uplift of its visitor numbers to the museum and archives from c1000 to c1200 in the 2013 season, meaning an approximate increase of 20%. Additionally, visits to the An Iodhlann website were substantially increased over the course of 2013 from any previous year, with almost twice as many visitors, and twice as many visits as in the previous year (Table 2). Although evidence is not available for which pages were the most visited within the website (it is not constructed in a way that enables the collection of such analytics), the only significant new content on the website is the information about Frasan itself, or directly affected by the development of Frasan (e.g. the map-driven Quick Search mode).[19]

Year	Visitors	Visits	Pages	Hits
2007	5487	10275	66670	152929
2008	6525	11489	65452	147084
2009	6848	11195	58558	129527
2010	4514	6259	57118	111056
2011	5778	9316	42612	97358
2012	7794	15801	69896	116530
2013	13353	28369	92719	144252

Table 2: An Iodhlann website visits 2007-2013

The project, even within its funded period, had an impact on cataloguing practices in the An Iodhlann archives. The geolocation of each of the objects chosen to be in Frasan itself was subsequently taken up as a practice for all of the archival objects, and this principle is now embedded in curatorial and cataloguing processes. As a consequence of this extension of adding geocoded metadata to other objects, the Quick Search mode on the online catalogue also enables searches by either theme (e.g. Crofting, Culture and Education, Emigration) or a map-driven version, enabling searches via community, as the app does.[20] The process of creating Frasan has also initiated the longer-term process of photographing artefacts for online access via the An Iodhlann website.[21]

The working relationship between the four key individuals in the project has been 'cooperative and collaborative', and given the nature of the island community, one which goes beyond a client-supplier or commercial relationship.[22] Throughout the project, An Iodhlann has been particularly mindful of the need to engage its existing stakeholders and particularly the committee of the Tiree and Coll Gaelic

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[18] Notes from Alan Dix, February 2014.
[19] Notes from Mark Vale, February 2014.
[20] Interview with Alan Dix and John Holliday, March 2013.
[21] Notes from Janet Bowler, February 2014.
[22] Interview with Mark Vale, January 2013.

partnership, and its own volunteers, who are predominantly older and not always computer literate, let alone engaged with mobile technologies.

An Iodhlann is aware it has 'a reputation to maintain', and that its aspiration to become a 'pathfinder digital community' needs to be technologically robust, and appealing to its various stakeholders.[23] In subtitling one of the sections in his first blog relating to the creation of Frasan 'The Mouse that Roars', Alan Dix articulated the implications of being the only rural-based project, located in a small and relatively remote location, compared to the other funded projects, which were all located in the urban centres of Edinburgh, Glasgow or Dundee.[24] Indeed, one of the regrets of the project partners was that – apart from Alan – it was difficult for them to attend the 'Nesta community face-to-face meetings' that were part of the Digital R&D Fund, and if they were to undertake the project again they would attempt to overcome 'the disadvantages of peripherality' by a greater level of attendance at the workshops.[25]

In terms of the impact on the partners working on the project, for one of the tech partners, as a freelance computer programmer based on the island, it 'afforded an opportunity' to develop a skillset in a 'very current and busy part of the market', thus enhancing employability.[26] The other tech partner, Alan Dix, went on to employ some of the technologies developed for Frasan in his 'Alan Walks Wales' project. From May-July 2013, he walked around Wales, continuing a process of research and development into how data can be used, linked and enabled for rural and remote communities, and the technologies developed via Frasan shared.[27] This latter activity is connected to the project's objective to demonstrate that 'far-flung areas can still be at the forefront of digital technology', and particularly the aspiration for Tiree to be a 'pathfinder digital community'.

The continuing development and take-up of Frasan itself, the broader digital environment of An Iodhlann and Tiree, and in other remote areas, and the ways in which local heritage can benefit from and engage with digital technologies, is ongoing, with some particular initiatives and actions detailed in section 5. Nonetheless, the project partners identify that Frasan has enabled an increased technological status both for An Iodhlann, alongside new technological skills for the staff.[28]

4. Insights

Technological Challenges and Solutions

An obvious and initial challenge for Frasan was that mobile signals on Tiree are patchy and in some places non-existent. Offline usage was thus inherent to the design from the beginning, with the intention that users download the app onto their devices when they have a 3G or Wi-Fi connection (before arrival, at An Iodhlann, or in their holiday accommodation). The GPS tracking embedded in the app works on the island without a 3G or Wi-Fi connection.

The decision not to create native apps for several different operating systems (e.g. Apple OS, Android), and instead to use HTML5 to create a cross-platform app reduced costs and development time significantly. However, despite HTML5's capacity to deliver a non-native app, there were still

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[23] Interview with John Holliday, 26th November 2012.
[24] Alan Dix, 'Tiree Goes Mobile', http://alandix.com/blog/2012/06/07/tiree-going-mobile/, accessed 22 February 2014.
[25] Notes from Janet Bowler, February 2014.
[26] Interview with Mark Vale, January 2013.
[27] Interview with Alan Dix, January 2013.
[28] Notes from Janet Bowler, February 2014.

technological glitches between operating systems which needed to be resolved (e.g. that it isn't possible to specify areas to be scrollable on Android), and a limit of the size of the app (5MB).[29]

It proved a technological challenge to extract and transform data in the existing An Iodhlann archival catalogue in a way which would automate the generation of the app while at the same time selecting data so that the user was not over-loaded with information or duplicated data. This process was described as turning 'an internal filing system inside-out and showing the world the contents'.[30]

Equally, mapping proved a technological challenge: the tech partner had to create from scratch a system to use geotagged data for a non-standard map offline (the hand-drawn illustration of the island), and take decisions about whether to geocode objects to a point or a larger area (a house, a village, a field, a beach).[31] These challenges were technologically difficult, but the expertise and effort of the tech partners meant the project partners were able to solve them. The intention to create the app via open source ideals, not least so the technologies built could subsequently be used by others, influenced some of the design decisions.[32]

R&D Approaches and Project Management

Project and time management were challenging, given the small team working on Frasan, and that most were undertaking it unpaid and in addition to their normal workload. Individuals were thinly spread, but highly committed.[33] All deadlines were hit, including the launch date in March 2013.

Perhaps more challenging was a range of approaches to work practice. Alan Dix was keen to undertake a true R&D approach, working through test cases 'to try and get something end-to-end done very quickly', as 'communicating a concept is quite hard until you've got something in front of you'.[34] This approach enabled the development of early prototypes for October 2012. This 'hack', or agile R&D, approach, the development of something 'quick and dirty', was at times at odds with more traditional project management.[35] The 'constant beta' process meant, for example, that fields for metadata were not definitively established from the beginning, making the archivist's normal processes necessarily more complex and iterative.[36]

The project partners did express, as mentioned in the previous section, that they wished they had been able to participate more fully in the Nesta workshop process, and were they to start the project again, an attempt to lessen their self-perceived peripherality would be made.

Testing and Feedback

The early prototypes developed did allow for a degree of testing, but this was more a case of technological testing and the iterative process of content creation, rather than gathering widespread feedback from users.[37] Feedback on the selection and presentation from the volume of primary data started to become available in the summer season 2013. This feedback proved to be strongly positive, both from summer visitors, and local users, with photographs proving to be the most popular content.[38]

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[29] Interview with Alan Dix, January 2013. For more on the technical specifications and challenges, see Alan Dix's blogs 'Tiree Going Mobile' http://alandix.com/blog/2012/06/07/tiree-going-mobile/, and 'Offline HTML5, Chrome, and Infinite Regress' http://alandix.com/blog/2012/10/07/offline-html5-chrome-and-infinite-regress/, accessed 22 February 2014.
[30] Interview with Mark Vale, January 2013.
[31] Interview with Alan Dix, November 2012; Interview with Alan Dix, January 2013.
[32] Interview with Mark Vale, January 2013.
[33] Field Notes from conversation with Alan Dix, August 2012.
[34] Interview with Alan Dix, January 2013; Interview with Mark Vale, January 2013.
[35] Interview with Mark Vale, January 2013.
[36] Field Notes from conversation with Alan Dix, August 2012.
[37] Interview with Alan Dix, November 2012.
[38] Notes from Janet Bowler, February 2014.

An Iodhlann's application did suggest that the app might eventually include the potential for social media interaction with users, and crowd-sourcing through the upload of users' photos, as well as some form of integration with the Discover Tiree app, which was being developed over the same period as Frasan.[39] The interest in digital archiving has led to one of the young islanders setting up 'Tiree Memories' on Facebook in February 2014, an active group for 'those with an interest in the history, the people and the culture of the Island of Tiree'. In its first week, the group gained over 500 members, who share and comment regularly on photographs, other documents, and videos, and network virtually.[40] As such, although crowdsourcing of content via the app itself has not happened, the Tiree Memories Facebook group is working extremely effectively to gather and share materials: nearly 200 images were shared within five days.

Budgeting

In terms of budgeting, the Fund's restriction that money could not be used for hardware purchase proved difficult for a very small organisation with very tight budgets. Given the wish to develop the app in HTML5 for a diversity of platforms and operating systems, this meant the project team had to use their own individual equipment, or borrow devices in order to test it.[41] Five more hours of the archivist's time were used on the project than originally budgeted.

Lessons Learned

- A hack, or agile R&D approach, enables the quick development of prototypes which facilitate testing and proof of concept. However, the iterative and experimental approach can be challenging from a project management perspective.
- Key questions about the selection and presentation of content require a consideration of the perspective of users, which can be hard to access and market-test.
- Small community networks can bring significant buy-in and engagement to digital projects, but can also be reliant on the unpaid efforts of key individuals, with significant risks to projects if key individuals cannot carry out their work.
- Digital technologies can enable substantial access by and to rural and remote communities, including their heritage.

5. Future

A range of developments are taking place in specific relation to, and as a result of, Frasan.

A new website for An Iodhlann is in development by the Frasan team. The Tiree Memories Facebook group mentioned in the previous section is a spinoff from Frasan's own work of mobilising An Iodhlann's archives. It is likely – in its crowdsourced, social media collection of historical documents and photographs – that the Facebook group will be able to contribute to An Iodhlann's archival collections. The link between the Tiree Memories group and Frasan is not currently evident on the Facebook site, though, and promoting the app via the group might enable further awareness of the app, and indeed of An Iodhlann, among its members.

The project partners intend to undertake more marketing and publicity of Frasan for the summer 2014 season, and to consider plans for developing revenue streams in terms of further funding applications.

There is an intention to develop for Frasan an interactive map of its archive items in relation to the landscape, to locate items more precisely than to a township, enabling greater value to visitors and

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[39] An Iodhlann, 'Digital R&D Fund for the Arts in Scotland Application', April 2012.
[40] https://www.facebook.com/groups/tireememories/, accessed 28 February 2014.
[41] Interview with Mark Vale, January 2013.

residents. This will be undertaken at the same time as doubling the number of archival items included in the app, in association with the development of the enriched An Iodhlann website.[42]

6. Further resources

Further project information

Frasan is available from http://www.frasan.org.uk, with further information about An Iodhlann available via its website http://www.aniodhlann.org.uk/. The associated website Tiree Place Names is available at http://www.tireeplacenames.org/

The Tiree Memories Facebook Group is available at https://www.facebook.com/groups/tireememories/

Alan Dix's website is http://alandix.com/, with the Tiree Tech Wave at http://tireetechwave.org/.

Details of the Tiree Wave Classic are from http://tireewaveclassic.co.uk/.

Tools and guidance

Anyone interested in developing a similar project is encouraged to visit Alan Dix's website (http://alandix.com/), which includes details of the development process via his blog. Alan offers a free online HCI (Human Computer Interaction) course at http://hcicourse.com/.

The CURIOS project, part of the dotrural hub, is engaged with development knowledge and digital platforms for local heritage: http://curiosproject.abdn.ac.uk/.

Further reading

http://thedigitalmuseum.tumblr.com/ Presentations and interviews on the use of technology in the culture and heritage sector.

http://www.dotrural.ac.uk/ Research Councils UK (RCUK) Digital Economy Hub focusing on the rural digital economy

G Wayne Clough, *Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age* Washington: Smithsonian Institution, 2013, http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf

Josef Hargrave, 'Museums in the Digital Age', 2013. Available from http://www.arup.com/publications/museums_in_the_digital_age.aspx

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[42] Notes from Janet Bowler, February 2014.

Yasmin Khan, 'Museums in the information age: survival of the most digital?', *Guardian Professional,* 6 December 2012, http://www.theguardian.com/culture-professionals-network/culture-professionals-blog/2012/dec/05/museums-adapting-digital-age

http://www.museumsassociation.org/museum-practice/technology-and-digital Digital journal Museum Practice published by the Museums Association, with an issue devoted to Technology and Digital in museums.

http://themuseumofthefuture.com/ Blog by Jasper Visser, focusing on innovation and participation in museums and culture.

http://www.museumsandtheweb.com/ Online space devoted to professionals creating culture, science and heritage on-line.

Other examples

http://www.nationalgalleries.org/arthunter The National Galleries of Scotland ArtHunter app, also created via the Digital R&D Fund, uses gamification techniques to encourage interaction between physical and digital spaces of their galleries, and to make art works and associated content from their collections available in a digital environment.

https://itunes.apple.com/gb/app/bookspotting/id827757271?mt=8 Publishing Scotland's Bookspotting app, also created via the Digital R&D Fund, uses geolocation in order to aid the discoverability of Scottish books.

http://alandix.com/alanwalkswales/ Alan Dix's website focusing on his 2013 walk around the periphery of Wales, 'one thousand miles of poetry, technology and community'.

http://www.ispotnature.org/, a website that encourages the public to explore and engage with nature, and interact with local and global communities developed by the Open Science Laboratory at the Open University

http://www.placebooks.org/ Placebooks, an RCUK project enabling the creation of digital booklets about favourite places.