



Our Mission

The purpose of the 2018-2020 digital roadmap is to outline our approach to using digital and emerging technology to help deliver the Bristol Culture service mission, which is “To inspire people to experience, enjoy and share their cultures and histories, and to understand the diversity and creativity of the world”.

Current digital practice

Digital activity permeates all corners of our organisation. From our operational processes to the preservation and dissemination of information, how we communicate to each other, facilitating public engagement, scientific research and through development of our audiences who write reviews, take selfies, photograph our interpretation panels and much more besides including a growing proportion of “born digital” collections.

Recent trends we have noticed include:

- We have more unique visitors to our main website bristolmuseums.org.uk (1.3 million) than we do foot traffic (1 million through our doors in 2016/17). (Ref 1)
- A gradual change in how our audiences are accessing our services. In 2017 visits from mobile devices made up 46% of visitors online, and this proportion is increasing.
- The Office for National Statistics shows that 83% of UK population has internet access.
- Physical location is no longer the defining factor when we refer to users of our services - our blog has an international audience and through our online shop we send gifts all over the world.
- Digital tools are now embedded throughout our workflows, project management and information recording, having rolled out “Digital by Default” practice across departments.
- It is easier than ever to find an online, often “freemium” service to solve our problems in a short amount of time. This results in a patchwork of solutions that we draw upon in our everyday work.

Digital Transformation

Digital is not just what we do, it is how we do it - we are still realising the transformative effect of online collaboration, sharing documents and repurposing data for new uses. Whilst often difficult to implement, and fraught with technical issues, we have seen the benefits in through an overall reduction in the work required to order stock in our shops, analyse information and provide digital services (ref 2). In order to effectively use our spaces and reach wider audiences, digital activity needs to continue to be at the very core to the work of the Bristol Culture team. Having continued to roll out new technology in 2016-17 we now need to deliver on some of the momentum we have put in place whilst supporting staff in adopting - moving proof of concepts into production, linking up data across teams and realising the benefits of a digital-by-default way of working. With all digitised activity being measurable, ultimately we are looking to use the data we generate operationally to make improvements to process and deliver better value for money. It all comes back to making effective use of data. We are investing energy in visualising cross disciplinary data sources over time to spot patterns and find out how to harness our organisational rhythm. This comes at a challenging time for maintaining and migrating the legacy of past digital projects - we need to keep up with our audiences' use of and expectations for cultural technology, or risk becoming obsolete in an ever more digital-competent age.

Our make mantra for digital projects is..."Make a ruckus!" ...because sometimes the best method is to disrupt the system.

Vision for 2018-2022

(See appendix A for examples of the vision in action.)

User research, audience development & experimentation

Our aim is to make experimentation a key activity for discovering emerging behaviours, trends and technologies that may have an impact on our organisation. We need to identify where are the barriers to access to our services (physical and digital), which audience segments are not attending, who's not engaging with our content and why. Only through trials, data capture and asking our audiences can we understand what are the things we can do to make things better - and we know we haven't got it right yet: Recent research (ref)has identified the arts sector is behind other sectors in our understanding and use of technology. This is an opportunity, building on our existing work, including recent award for Digital R&D for the Arts funding 'The Hidden Museum' (£125,000), to work in partnership (UWE Arts and Cultural Industries department, Watershed, University of Bristol Computer Science department) to deliver academic and practical beneficial outputs.

Our user research programme with focus on the following key areas:

- Use of digital on-site (mobile, kiosk, voice, AI)
- Navigation through space (sensors, segmentation)
- Use of digital services (discovery, information architecture, conversion tracking)
- Audience development for hard to reach and priority segments and non-users

Data & digital infrastructure

Limitations to our infrastructure have wide ranging effects - slow wifi causes problems at conferences, slow network speeds hinder digitisation projects and antiquated technology impedes on the user experience in our galleries. There are also regulatory implications for ageing technology when it comes to data and data protection. We have several bottlenecks to overcome in order to be more resilient in a changing digital landscape. In order to make more with less we will need to think creatively about how to overcome or work around this - tackling joint issues such as massive data storage, security, and network speed. In turn this will allow us to use data more efficiently and more wisely, and to pool skills and resources with our partner organisations.

We'll be developing infrastructure and data improvements in the following areas:

- Automate reporting across platforms, combining operational and marketing data
- Achieve cost effective scalable digital storage and improve the rate of digitisation
- Develop & benchmark standards and procedures in sharing our data about natural science collections
- Google analytics, google data studio
- Data protection and rights management
- Facilities and processes for managing time-based media collections
- Better systems for support tracking and troubleshooting

Digital content & distribution

The future of content centred engagement is an area ripe for exploration and better understanding. From dead sea scrolls to the modern day paperback, and digital books, digital mechanisms now offer new ways to make, share and use 'published' content. We will explore the future of how our collections, text and digital media can be crafted for our audiences now and into the future. We will deliver content across our various digital channels such as blogs, mobile, social and third party platforms including Google Cultural Institute. To fully realise this potential we need to focus in-house, how we manage and store our digital assets. We need to cross contaminate departments and to

actively maintain a digital asset management system across the service to maximise discovery and re-use of content.

In the following key areas:

- Optimisation
- Discovery
- Structured data
- Voice search
- Audio guides

Content examples

- We developed a system to allow visitors to access oral histories on-site to hear stories of people from different cultural backgrounds in our new display at M Shed.
- in 2016 we released The Hidden Museum, and interactive game for on-site visitors, via the app store (<http://www.labs.bristolmuseums.org.uk/category/hidden-museum/>)
- in 2016 we redeveloped our on-site digital platform for interactive museum stories. This is accessible via kiosks across M-Shed and allows visitors to access stories about the collection and about the various themes e.g. "Music of Bristol People". New content added to this system includes a music video for a local band, which can be seen on the kiosk whilst reading about the band.
- In 2017 we built a system for digitally curating exhibitions using long form content and rich multimedia.
- We designed a unique in gallery digital projection to complement our Warrior treasures exhibition, using projection mapping we created atmospheric animal projections on the walls, additionally we recreated a fire-pit in a gallery using a combination of digitally recreated fire and smoke smell to create a multisensory experience.
- Time based media and digital art collection – Bristol is becoming renowned for its collection of video art and have acquired several important pieces (see art curators).
- in 2016/17 we produced a virtual learning experience that allows school children to explore The Red Lodge Museum and The Georgian House Museum in 360degrees. Using a headset/or mobile device this app will allow a teacher to guide a class round the galleries in virtual reality, and to access content produced by curators and learning staff about the objects and stories in each museum.
- We created an online Tour of Chocolate Sites in Bristol (<http://arcq.is/1TbUdU9>) . This gives context to historical images from our collection against historical map of the sites.
- We ran a pilot project with UWE to develop a procedure for adding geographical referencing to our collections data. This will allow us to standardise the way we record geographical data in order to publish more content onto cultural mapping platforms such as Know Your Place. The pilot project resulted in ~1000 objects from the Clifton Downs having georeferences. The result is that these are more discoverable to researchers and can now be exported to be displayed on a map of Bristol.
- We produced a documentary which explains the new discovery of a well under the floor in the Red Lodge Museum and includes some footage of its exploration. The film available online and also in the room containing the well.
- We developed a mobile web-app which allows a school group to navigate through selected objects in the museum and access images and object information.
- In 2016 we catalogued over 2000 archival records from the British Empire & Commonwealth collection, which are now available to browse online for researchers.

- We recorded an audio tour of selected highlights of Bristol museum featuring curators talking about the objects
- In Nov2015-Nov2016 we had 700,000 unique visitors to discoveringbristol.org.uk. This website provides an educational online history of the Bristol port and its people and has a large international audience.
- In 2016 we made improvements to how we digitise object narratives and oral histories – this is a digital resource which links curatorial narrative and community content with the associated museum objects.

Access to digital collections

We understand there is a diverse user base who need access to digital collections including researchers, businesses, and the public. We need to explore how new technology can be used to reinterpret our objects, e.g. IIF image processing, 3D scanning and augmented reality, improving our platforms to deliver learning content to users in their own environment and devices. Technical limitations and legacy software are a barrier to discovery and use of our digital repositories. In order to satisfy these users and develop new audiences for this material, we'll need to rebuild our online collections and archives platforms based on user need and to W3C accessibility standards.

Improvements to collections online will focus on:

- Improving access to the BECC collection
- Providing a means of searching and playing a variety of multimedia including video and oral histories
- Rebuilding a user friendly search interface
- Maximising discovery through a strategic implementation of SEO techniques
- Measuring how audiences discover and engage with online collections.
- Curated tours and pushing content to third party guides and aggregators

Developing staff digital and web literacy skills

In order to function with digital delivery as a service we will increase digital and web literacy skills across the organisation including our volunteers. We will develop our approach to the open badges initiative to enable staff, volunteers and partners to gain recognition for their new digital skills and ensure excellence is rewarded. Job descriptions will evolve to include the requirement to use digital and emerging media technologies including awareness of contributing to social media and blogging. We will actively seek digital skills in future roles at all levels.

Digital skills development will focus on:

- Improved customer relationship management
- Data analysis techniques
- Digital media and content management
- Techniques in digital marketing
Online retail - software & sales analysis
- Search Engine Optimisation

Leadership

We aim to be continually recognised lead in digital culture research for using digital and emerging technology in cultural public spaces. We will build upon our relationship with other experts and work with existing arts partners and less traditional partners such as the BBC, The Watershed, University of Bristol, UWE Arts and Cultural Industries and Central government IT teams such as GDS. Where possible we should have an advisory role for the sector in planning, creating and using digital activity and through contribution to the seminars and workshops of the Museum Computer Group.

We'll focus our leadership work on

- Skills across south west museums
- Data management
- Museum computer group
- To continue to support the sector through our programme knowledge dissemination through blogs and workshops.

Collaboration

We will continue to collaborate with partners to help us learn together and establish long-term strategic partnerships that fosters innovation and shares resources. We will host digital focused events to raise our profile and take a leadership role around digital activity in museums. We will openly share our practice using web tools such as blogs, dashboards and other resources, by sharing code and speaking at local and national events. Sometimes this means just supporting other people's projects who make use of our collections and spaces such as "Tangible memories". We will increase our work with both local universities on 'student as producer' projects to make experimentation and research and development an integral part of the service. The findings can help the community and act a viable model for exploring emerging practice.

Collaborative work will focus on the following areas:

- Working with student developer teams to solve problems and trial new technology
- Cultural partners in Bristol including We are the Curious.
- Benchmarking our digital marketing efforts through joint campaigns with the Bath and Bristol Cultural Destinations Consortia
- Run data science research projects on our data sources

Revenue

Digital activity will be an enabler for us to pursue revenue opportunities both onsite and online. We should ensure that all of our revenue generating activity is discoverable online and that it is as seamless as possible.

- Implement and/or maintain contactless / unattended payments for exhibitions
- To improve our use of paid search / cost per click advertising
- To focus on measuring conversion
- To refine online ticketing systems
- To bring more services online and accept online payments as a preference to phone / in person, for example to fulfil digitization requests or gift/membership subscriptions.

Revenue examples 2015-2017

Ticketing

- Having already introduced online ticketing, we are now in the process of optimising the process in order to understand what drives conversion.
- ePOS retail system and reporting
- We further rolled out our ePOS system to our other sites and for on-site donations. We have begun to develop sales reports to be more strategic about the ordering of stock. The system works on unlimited iPads and has a module to enable an online shop at an affordable price.

Online Shop

- In 2015 we launched an online shop that sells our retail products and is available at <http://shop.bristolmuseums.org.uk/>
- Paid advertising
- We have begun to use Google Adwords to generate traffic to our online shop.

External funding

- We will bid in funding streams that require research and development for digital activity funding to increase our research output and reduce dependency on existing funding pots. For example our successful bid for the Digital R&D for the arts was the start of building our digital capacity. Online giving
- We will explore digital fundraising opportunities with the intention of improving online giving through donations and crowdfunded project appeals. Our 2015-16 exhibition ‘death: the human experience’ launched our ‘text to pay’ service. In 2016 we launched a donations page to encourage one off payments and direct debit.

Digitisation of the collections

We will continue to digitise our museum objects and archival collections. We will begin to develop story driven narratives to widen the appeal of our digital records to existing and new audiences. We will address our digital storage problem and aim to become a National Archives accredited digital repository.

Our online collection will feature heavily in our future digital activity to assist emerging collaboration with the public in its use. We will investigate emerging techniques for improving the speed in which we are able to digitise, label and share our content by collaborating with our technical partners and upgrading our digital infrastructure.

Our future digital activity with online collections will assist emerging forms of collaboration, such as crowdsourcing, in its use.

We will seek funding from HLF to deliver a long-term digital project to digitise (scan and photograph at risk bound volumes) over 60,000 of Bristol’s historic building plans from between 1851 and 1948. The project will assist in the preservation of this valuable and unique Bristol resource, currently at risk due to its fragility and age, and it will also enable the collection to be accessed online for the first time (via BCC’s Know Your Place website and the Bristol Record Office online catalogue). The project marks a fundamental shift in the way that the Council makes its archives publicly available alongside an innovative public engagement plan for the City and beyond.

Digital preservation

Bristol Culture aims to acquire, preserve and make accessible its collections for use by present and future generations. It recognises that the format or medium of records, objects or artwork should not preclude acquisition into Bristol Museums, Galleries and Archives collections. Increasingly records and artwork are being created in digital formats (often described as ‘born digital’). Bristol Culture understands the need to maintain long-term access to digital objects and the economic, reputational and cultural risks of failing to do so. Without active preservation and curation digital objects will not survive. Our key objectives are to ensure that preserved digital content can be located, rendered (opened) and trusted.

Our Digital Principles

We need to offer digital services that will enable us to help deliver our mission. These digital principles act as the foundation for all digital activity.

Users at the heart of what we do

Everything we do must have our users’ needs at the centre of our decision-making and the services we provide. Meeting user needs will ensure we are focused and led by what users are actually doing and are accessible to users and devices.

We applied the user-centred design approach for the development of bristolmuseums.org.uk and continue to refine the information architecture taking in user feedback.

We developed a prototype for on-site mobile digital interpretation following the trend for our visitors to use their own devices in our galleries.

Evaluation

We have more data than ever about our audiences and how they use our services. We must continue to build evaluation into our digital projects and use the data to help guide our plans. Evaluation will allow us to test our assumptions and continuously improve our products and services whilst maintaining value for money at all times.

- How to evaluate success online? by Culture24
- We [recently trialed offline surveys](#) using ipads for evaluation of the Bristol Harbour Festival
- We are aiming to increase the diversity of our audiences and measure this change. During the summer period of 2016 we ran exhibitions at M Shed (The story of Children's Television from 1946 to Today) and at Bristol Museum and Art Gallery (25 Below). In both cases the exhibitions attracted a more diverse audience compared to our baseline audience data. In the case the Children's TV exhibition at M Shed, our visitor survey showed that we increased our two priority audience segments – Modest Means and Striving Families (CACI Acorn) by 100% from 6% to 12%. The exhibition was marketed to families as a part of the wider 'Family Day Out' at M Shed and we had a marketing campaign on local bus routes which went through areas of Bristol with concentrations of our priority segments. We saw similar increases in the diversity of our audiences at the 25 Below exhibition where 23% of attendees to workshops were from BAME ethnic groups (compared to our baseline of 11% across our sites and the Bristol population of 16%).

Digital services

Digital is now fundamental to delivering our mission and needs to seen as being a continuous service rather than an afterthought or a single project. With this implication, all service projects can better consider how digital underpins our activity for the life of the service with the digital approach baked into it. We will move to using digital as a service. We will set standards for all digital delivery, redesign existing services where digital will be beneficial and establish new services, transactions and processes. Using web platforms and channels will allow us to foster engagement with existing and new audiences in a sustainable and responsive way.

- [Our shopify setup for running ePOS in our gift shops](#)
- [Text-to-pay for exhibitions](#)

Build digital skills

Planning, designing and running digital services require a particular set of skills. The service needs to grow its teams' digital literacy in order to run successful services and be ready to exploit new opportunities. A better skilled service will reap rewards for our users and key stakeholders.

Operationally the digital team administer and manage a diverse range of software and hardware solutions, often specialist in nature & business critical from legacy systems to cutting edge technology stacks. We realise there is a challenge in running these systems, whilst simultaneously supporting staff use, developing them and adding content to them, whilst also training and troubleshooting. We need to better define roles and develop in-house training sessions to give front line staff the tools they need and reduce the risk of downtime.

- In 2016 we rolled out a training programme in basic IT literacy based on the skills audit: Excel, Google Docs, museum copyright and digital narratives. Staff enrolled in these courses have already gone on to achieve different roles within our organisation.
- We have enrolled staff across the service in CRM fundamentals ready for onboarding into the CRM system.
- In 2016 we took on a digital apprentice to increase team capacity and develop skills specific to the digital role

- Baseline skills audit, improving awareness of digital, digital literacies, support network, museum computer group, open badges to give recognition for your new skills

Experiment

Digital is constantly evolving and nobody has all of the answers. We need to be prepared to experiment and test our assumptions to keep moving forward. If we use a build, measure and refine loop we set appropriate expectations and can use an established process to be flexible and agile. An area we are exploring is the use of sensors for data collection and engagement.

- The Hidden Museum,
- Minimum viable product
- Lean strategy
- Agile
- Oculus rift

Partnerships

We cannot do everything ourselves. We should seek to partner with peers to reduce risks and accelerate our activities where possible. Through our partnership with the South West Museums Development we will act as a sector leader in developing a process and policy for managing digital collections.to share learning, practice and solutions to the wider sector on the management of digital collections

- In 2016 we hosted 2 digital curation Internships from the University of the West of England, applying digital heritage specialism to the problem of georeferencing
- In 2016 we hosted a skills sharing session with the Oxford Bodleian Libraries to share
- We continue to collaborate with the University of Bristol Computer Science department to run student tech projects, build prototypes and test out ideas.
- Internationally we have been working with our partners (e.g. the smithsonian) in the development of collections and digital asset management systems and practice in order to refine the systems we need to better manage our archives.
- For 2014-15 we had student projects involved with People counter and The Hidden Museum dashboard.
- For 2015-16 we have built a mobile app providing interpretation of our Egypt Gallery.
- For 2016-17 we are developing a web interface to our digital asset management system.

Sustainability

In order to provide value for money we must ensure that our activities are efficient, fit for purpose and aligned with our mission and appropriate business models using technologies that the service is able to sustain for the expected lifetime of use.

- Support contracts, technologies, mission aligned (including revenue considerations)

Open practices

The open movement exists in the public sector to benefit the wider community. We have learnt from others and should pay this back in kind. We should share our triumphs and problems. Where possible we should share our code, resources and practices. Much of this can be made possible by using open technologies and standards by default.

- Team digital labs blog
- BMGA roadmap
- Open data projects

- Culture24 project
- Open standards and code bases on github etc.
- leading on a John Ellerman Foundation project to develop processes for South West museums to share biological data on collections.

We will know we have been successful when:

Having standardised and improved how we collect and share operational data, we develop projects and a way of working that uses data at the outset, using data to improve our service, spot patterns and promoting a data savvy culture amongst colleagues.

We should have evidence that we are meeting the needs of our users: for example using Google Analytics to back up the reasoning behind the information architecture of bristolmuseums.org.uk

How we will measure performance:

We will use specific kpis that tell us how our service is performing based around the mandatory key performance indicators (KPIs) [as defined in the government service manual](#). Having already developed a process for recording and reporting on digital metrics we'll use this as evidence for where we should decommission legacy material and where resource should be put into publishing new content or refining digital products that we already have.

Cost per transaction

We need to become more efficient, and this includes staff time. We designed a metric which calculated that moving to digital workflows from paper based systems has the potential to save 3000 hours of staff time in a year.

User satisfaction

In 2017 we rolled out digital feedback kiosks across our sites. We will continue to use these to measure user satisfaction, additionally where appropriate we'll build the feedback process into the service being provided for online services. We will follow a standard approach across all platforms to be able to cross reference – asking users to pick from set terms (Very satisfied, Satisfied, Neither satisfied nor dissatisfied, Dissatisfied, Very satisfied).

Completion rate

We will set up our analytics to calculate the proportion of users which go through to complete a service including booking tickets for events and purchasing from the online shop. We will also endeavour to experiment with ways to measure completion rate onsite to explore how visitors navigate our space and what services or content they engage with. This will require us to test out new technology involving sensors and improve our use of google analytics.

Take-up

We need to know who is using our services and also who our non-users are. Through continual user research we will carry out projects and surveys to better understand how visitors interact with us online and onsite. We will gather qualitative and quantitative information through observation, direct surveying and through digital analytics.

Policy and progress review and approval:

The Head of Digital reports to the Head of Transformation on a quarterly basis. The digital plan and policy are reviewed annually.

The Team

Digital is already a fundamental part of the service, it contributes to our infrastructure, collections management, visitor experience, communication and revenue. In order to successfully make use of digital within the service we need a multidisciplinary team to use our 8 guiding digital principles and deliver our digital strategy.

The core team needs to:

- understand user needs through research and user testing
- design, build, test, demo and iterate solutions
- Deploy and manage small to large digital platforms
- Support the running of on-site and online digital activity
- Contribute to a digital literacy initiative to ensure a skilled digital workforce.

The core roles we need to deliver our digital plans are:

- Mark Pajak, Head of Digital - responsible for managing all digital projects, performance, and user experience.
- Zak Mensah, Head of Transformation - responsible for a number of teams including Digital led by Mark.
- tech lead (internal and with BCC) and Tahir Khan from IT Services
- User researchers (engagement, evaluation) Fay Curtis and Darren Roberts
- Digital Apprentices: Lacey Trotman, Rowan Whitehouse
 - South West Museum Development, digital theme: Sarah Madden & Victoria Hopton
- Makers (Content interactive designers, content production, digitisation, user testing, developers, designers, content strategy - including marketing), David Emeney, Zahid Jaffer, Simon Fenn, Lauren MacCarthy, Malcolm Boyns.

Acknowledgements, notes and references

- 1.) performance.bristolmuseums.org.uk: a live count of visitor figures
- 2.) labs.bristolmuseums.org.uk: experimentation with new technology

User research examples <http://artsdigitalrnd.org.uk/digitalcultureresearch>

Bristol Culture online dashboard:

https://datastudio.google.com/open/0B_LqHiGGh6GZMGJVMIFDa3JuRkk

Arts Council England, The value of arts and culture to people and society - an evidence review, (Arts Council England, 2014).

http://www.artscouncil.org.uk/media/uploads/Great_art_and_culture_for_everyone.pdf

<http://www.tate.org.uk/research/publications/tate-papers/tate-digital-strategy-2013-15-digital-dimension-everything>

<https://www.gov.uk/service-manual>

Bristol City Council Web strategy (internal URL)

Manual of digital Museum Planning 2017 (<https://www.lord.ca/resources/books/manual-of-digital-museum-planning>)

Links to examples of other projects that inspired us

Use of digital technologies for onsite interpretation

Explore how the use of technology can increase engagement with onsite audiences. For example at Brooklyn Museum they are working on a system to enable the public to ask questions to curators during their visit with mobile devices.