

Heritage at your fingertips



How mobile technology is transforming collections management for the digital age



Introduction

The current landscape



Museums use their research and collections to challenge assumptions, foster debate, and motivate people to contribute to positive change in the world. They are not neutral spaces. Museums Association: Museums Change Lives. **(1)**

Whether you're moving an entire collection of period furniture from one part of a city to another, fielding enquiries about fossils of marine reptiles or receiving a truckload of new acquisitions, managing a museum collection presents a unique set of challenges.

Museums must protect and preserve priceless objects, but must also make them available to the public. In the words of the Mendoza Review of Museums in England, a central role of a museum is to "offer spaces where we can experience beauty and understand our place in the world". **(2)**

While much is expected of the museum sector, in many countries it's funding has come under pressure. Museums have had to find new ways to generate income and there is more focus than ever on innovation through designing fresh exhibitions, collaborating with fellow organisations and delivering greater educational opportunities. While this means that museums are providing visitors with a richer and more dynamic experience, it can put pressure on them to work harder, with fewer resources.

Traditionally, the museum workforce is supported by a band of dedicated volunteers, students and interns who keep everything running smoothly. And many of the tasks that are critical to sustaining a high quality museum environment, such as cataloguing and condition checking, are complex and time-consuming.

Time has come for a simpler, more streamlined approach to carrying out the essential tasks in managing collections; an approach which creates a better user experience for museum professionals through use of digital tools and mobile technology.

The challenges of collection management

"We are always creating new projects in our museum spaces, but these take time to set up, and there are not always enough people to work on them."

Sarah Joomun, Digital Collections Manager, Oxford University Museum

The digital revolution has accelerated the pace of change and museums are increasingly recognising the need to adapt to the expectations of a digitally literate society. Today's museums and cultural institutions are so much more than repositories of historical and scientific artefacts or interesting places to spend an afternoon. Museums contribute to the global dialogue on almost every area of our lives – from the sustainability of food and fuel to the impact of climate change and space exploration – and they are evolving rapidly.

Museum ID's Future Museums project **(3)**, which invites collection professionals from around the world to share ideas and enter the debate on the future of museums, has helped to shine a spotlight on the need for museums to collaborate more effectively, increase the diversity of their audience and reduce the physical/digital divide.

Museums are starting to embrace emerging technologies to engage with the world around them. But as they move towards an exciting future, they can grasp the opportunities to transform many of the routine tasks that are the bedrock of good collection management too.

Cataloguing

"An experienced cataloguer can jump between records easily to capture the information they need. With the increasing reliance on more inexperienced volunteers or short-term contractors, systems need to be simpler."

Rob Scott, Collections Systems Manager, British Film Institute (BFI)



How museums elect to formally identify and describe objects is largely down to them, aside from adhering to the Collection Trust's Spectrum Standard which is used around the world. **(4)**

There are some obvious benefits to using collection management software to carry out a museum's cataloguing, as these systems are designed to comply with Spectrum standards and hold vast quantities of data linked to an object.

Emerging technologies can help to simplify the process and share responsibility for cataloguing beyond the handful of staff with the expertise in these systems to use them effectively.

Creating documentation

"All museums and archives have different processes and work in different ways. If collections management systems could be tailored more closely to meet museums' needs, that would provide a much more useful tool."

Rob Scott, Collections Systems Manager, British Film Institute (BFI)

Part of the challenge for any museum is in designing its own policies, procedures and workflows for the way it documents the vital information that gives its objects meaning. And with such a wide range of museum collections, there is no one size fits all.

A greater degree of flexibility can help institutions design workflows in a way that works best for them.

Tracking the movement of objects

"There has been more of a focus recently for museums to make their displays less static. We are finding that our permanent displays are less permanent than they used to be."

John Peel, Collection Information Manager, Manchester Museums Partnership

One of the challenges that collection managers face is moving objects, and it's a challenge that is intensifying in an increasingly dynamic exhibition landscape.

John Peel, Collection Information Manager at the Manchester Museums Partnership, explains, "Whereas previously we might have had objects on display for three years, now the interpretation behind a space might be permanent, a costume display, for instance, but the museum may change the works within that

display so when people re-visit, there is more to see.

"This is in part due to people questioning why there is so much that stays behind closed doors in a museum's stores, and a move towards releasing objects that stay hidden from sight for too long and putting them on display."

A mobile enabled system can improve the process of moving objects by making it easier, faster and more accurate.

Documenting acquisitions and loans

"A lot of paperwork is generated to facilitate a loan and this involves taking information from different lists in Word and Excel and entering it into the system. This can result in mistakes being made."

John Peel, Collection Information Manager, Manchester Museums Partnership

Taking ownership of objects that are new to a museum can present a range of difficulties from the administrative pitfalls of incomplete documentation, to the rare but real risk of losing track of an object altogether. The same challenges arise when receiving objects from other institutions. If the paperwork could be easily accessed through a mobile device, the possibility of mistakes would be greatly reduced.

Conservation of objects

"The object to be checked could be mounted on the wall, stored in a rack or displayed on a table. The team spend a lot of time moving between their desks and the object they are reporting on, which takes up valuable time."

John Peel, Collection Information Manager, Manchester Museums Partnership

As part of their duty of care, museums are continually checking the condition of their objects, assessing damage, arranging repair work or planning restoration to improve the object's appearance. Ensuring each stage of the conservation work is documented is a critical part of many museums' workflow. A mobile interface would enable teams to compile their reports at the site of the object.





“Using a smartphone camera would be really useful too, you could take a photo and upload it onto the collection management system. It would help our team when they are documenting a damaged object because they could upload a conservation image and annotate it there and then”

“The phones in our pockets are much better than the camera we bought five years ago for the team. We could take a picture and add it to the database, then go back to the desk and edit it.”

Mobility

Transforming operations



A central mission for a museum is to make connections between the artefacts they display and the visitors who come to see them. But the processes that enable museums to achieve this mission are being hindered by practical constraints such as lack of time, shortage of staff and outdated technology.

The time is ripe for an easier, faster and more user-friendly way to manage collections that helps museums break down the barriers between the past, present and future.

A new approach is required that will help museums close the gap between their physical objects and their digital records, and strengthen engagement locally, nationally and globally.

New approaches, new solutions

“Getting the data right for objects is of paramount importance, so staff need to know they are doing it correctly, and a system that’s easier to use is a very good start.”

John Peel, Collection Information Manager, Manchester Museums Partnership

There is a compelling case for museums and cultural institutions of all types and sizes to grasp the opportunity to streamline their collection management through technological innovation. With priceless objects in their care, and the necessity to document all aspects of their collections, museums need a new approach that harnesses the power of digital technology.

Mobile information on the go

Many of the difficulties with access to, recording and sharing of information are due to the fact that much of the work carried out on a collection management system has to be done on a laptop or desktop computer, often some distance away from the objects in question.

Cataloguing, assessing an object’s condition and preparing for a move can be complicated by the need for staff to record details about an object with pen and paper or an Excel spreadsheet, and then key it into the collection management system. A mobile enabled system would eliminate the need for this duplication of effort and enable museum personnel to work alongside an object, entering data directly into the system via a smartphone or mobile device.

Sarah Joomun, Digital Collections Manager at the Oxford University Museum, can see the benefits of a mobile interface. “We have objects stored in about 80 different places across the museum and the university, and some of our collection includes architecture and large works of art such as carvings and statues. The majority of these areas are not hooked up to the network and the people working there don’t necessarily have the opportunity to access the collection management system to record their notes.

“To be able to access our system on a mobile device would make a huge impact. We don’t have many laptops here, but everyone has a phone so they would be able to work on the go without going back to a desk to log on to the system.”

Instant image capture

“Using a smartphone camera would be really useful too,” continues Sarah. “You could take a photo and upload it to the collection management system. It would help our team when they are documenting a damaged object because they could upload a conservation image and annotate it there and then.”

John Peel agrees. “The phones in our pockets are much better than the camera we bought five years ago for the team. We could take a picture and add it to the database, then go back to the desk and edit it.”



Easy processing of acquisitions

John Peel has found that mobile technology has transformed the way his museum processes new acquisitions and loans.

“Each item that comes into the museum needs paperwork to be generated for the delivery driver to take with them. Previously, this involved collecting the item as it came into the building, going back to the computer to generate and print off the paperwork, and taking it over to the driver.

“You might find that a delivery of 50 objects will arrive, in five separate crates and you need to process each object individually. This meant going backwards and forwards, taking an object out of a crate, checking it, taking it into the building, processing it on the computer and printing the paperwork.

“Now we simply take a tablet to the door and process the paperwork on each object there and then.”

Reduced risk of error

Current ways of working in many museums which rely on manual documentation processes and then keying this information into the system can allow errors to creep in. A mobile collection management system could reduce the margin for error, as Mark Pajak, Head of Digital at Bristol Museums, suggests.

“There is definitely a case for having a collection management system on a mobile device. At the moment, staff enter information in Excel from a laptop in stores and then transcribe the data from their spreadsheets into the collection management system. If they could enter the data straight into the system, there would be considerably less room for mistakes.

“Another benefit would be the ability to scan barcodes on objects rather than searching for an object manually. It’s sometimes not clear which object you are looking for, but if you could scan the barcode from your phone, you would know that you have located the correct object.”

Rob Scott from the British Film Institute can see the advantage in a mobile interface to reduce the risk of error in one of his organisation’s key tasks:

“Our Vaults team have to generate a list to say what they need to take out of the vaults every day in response to access enquiries or conservation needs. To do this, they create a pick list which they put together in an Excel spreadsheet, and this is entered onto the system. If the team had a portable tool that could help them do this, they could take their mobile

devices into the vaults while they are selecting the items they need, and this would eliminate any risk of error.”

Streamlined collection moves

The process of moving objects is complex enough, but having to record and access information back in an office or workspace that is nowhere near the objects themselves complicates the process further.

A portable solution would make it easier to monitor the whereabouts of objects during the movement of a collection. Details about the current, interim and new location of an object could be entered and updated on site whether in stores, conservation labs or exhibition spaces.

Manchester Museums has been using a mobile tool linked to their collection management system, and this has helped with movement and location control as John Peel explains.

“We have moved one of our furniture collections five times in recent years. For the previous four years, we used pen and paper to note down the number of the item to be moved, and to record any details about the item from the person who is an expert in that area. We then returned to our desks to enter that data onto the system.

“We also had to return to stores multiple times to make sure that the correct piece of furniture is there and to record where, when and how it should be moved. Again, this was all done on paper and keyed into the system later on. Getting the furniture into the right locations and checking it onto the database could take between nine and twelve months.

“This year, however, with our mobile enabled system, we entered details on an object straight onto a mobile device, and if we needed to check anything during the move, we could look it up instantly on a smartphone. The whole process took more like a month.”



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***“We also had to return to stores multiple times to make sure that the correct piece of furniture is there and to record where, when and how it should be moved. Again, this was all done on paper and keyed into the system later on. Getting the furniture into the right locations and checking it onto the database could take between nine and twelve months.”*”**

“Our digital engagement team would like more access to our system to use images for blog posts and social media, for example. Learning the whole complex system isn’t a good use of their time, but if they could easily access a photograph or video from the system, that would help them in their role.”

Multiple user access

Easier to adopt and use



Supporting complex and varied needs

The needs of different museums vary greatly, and many museums would benefit from being able to tailor their collection management system to their needs.

For some institutions, the metadata stored alongside objects is almost as important as the objects, and a flexible system would provide a better way to manage the way all data on an object is stored.

“A lot of the decisions museums make about how to catalogue and manage their collections are driven by conceptual questions rather than simply the practical challenges,” says Rob Scott.

“So for us, a film may need to be documented alongside advertising posters, photographs, paper archives, scripts, cast details and other ephemera. All of this content is valuable in its own right. If this consideration is built into a system’s design architecture, the items stored alongside an object can be dealt with and cared for in the same way as the object itself.”

Easier for new and less experienced staff

“It would be good to create a more streamlined experience for less experienced users so that staff can enter information without needing to work their way through all the background data about each record.”

Rob Scott, Collections Systems Manager, British Film Institute (BFI)

An easier to use system accessible with the digital technology that everyone is familiar with would have a positive impact in enabling museum staff to carry out more of the essential tasks around the museum without needing expert system knowledge.

Currently, training staff on a complex collection management system is difficult, as Mark Pajak explains. “A key challenge is the amount of training we need to carry out for new staff who come on-board. A more intuitive system would help staff carry out tasks such as running searches and accessing information.

“Accessing and exporting data from collection management systems can also be difficult for less experienced staff. A simpler user interface with a set of easy to follow steps would really make a difference,

and new members of the team would be able to learn to use it much more quickly.”

A solution that supports everyone

“If there was a way for the system to hide its complexity and guide a user through a series of steps to follow, it would mean more employees would be able to use the system effectively in their roles.”

Rob Scott, Collections Systems Manager, British Film Institute (BFI)

An easier to use, mobile enabled system will increase the number of employees who can use the system in their roles. “We wouldn’t need to train staff on the complex system, they could just use it for what they need,” says Sarah Joomun.

“Our digital engagement team would like more access to our system to use images for blog posts and social media, for example. Learning the whole complex system isn’t a good use of their time, but if they could easily access a photograph or video from the system, that would help them in their role.

“For our non-collection staff who deal with enquiries from the public, it would mean that if someone asks if we have a certain item on display, they could quickly look it up on an iPad to see where it is.”

Rob Scott also envisages the positive impact of a more user-focused design for a wider range of museum staff. “At the moment, the interface of many collection management systems is driven by the way records are stored in the system.

“If you are a cataloguer, seeing things driven by a record can be useful. But for other staff members and people who deal with transport for instance, or loans, a different user interface that’s more suitable for their role with a series of steps would be better.”

Encouraging collaboration

With a growing focus on opportunities for collaboration, and more institutions working together on cutting-edge research, there is a recognised need for museums to be able to share information more easily.



“The Manchester Museum contributes to the Global Biodiversity Information Facility (GBIF), an international network and research infrastructure providing data on all types of life on Earth,” says John Peel. “The GBIF needs data to be in a certain format so they can put it onto their database. Getting our data into the right format before we send it takes us a long time.”

“In the future, an ideal system would enable museums to send information to repositories like the GBIF in the right format, just by clicking a button and selecting the information. That would be enormously beneficial.”

Conclusion

For the museum sector, expectations are higher than ever. Museums have a responsibility to preserve and safeguard the precious objects in their care, while digitally literate visitors want instant information about the objects they see, constantly evolving exhibitions and inspiring spaces that educate, inform and entertain.

Museums are rising to the challenge by making more of their collections visible to the public in exciting, dynamic displays, and sharing their heritage with the global cultural community.

However, managing collections can be fraught with challenges, particularly in times of funding shortages, time pressures and limited workforce.

Precise and accurate documentation is fundamental to any museum collection, but the process takes time and calls for professional expertise. And when data needs to be entered and accessed on objects which are spread far and wide across a museum space, there is always the chance of mistakes being made.

For objects that need to be moved, loaned or restored, this data is absolutely critical, yet many museum teams still rely on manual processes to keep track of objects, monitor their location and ensure their condition is properly preserved.

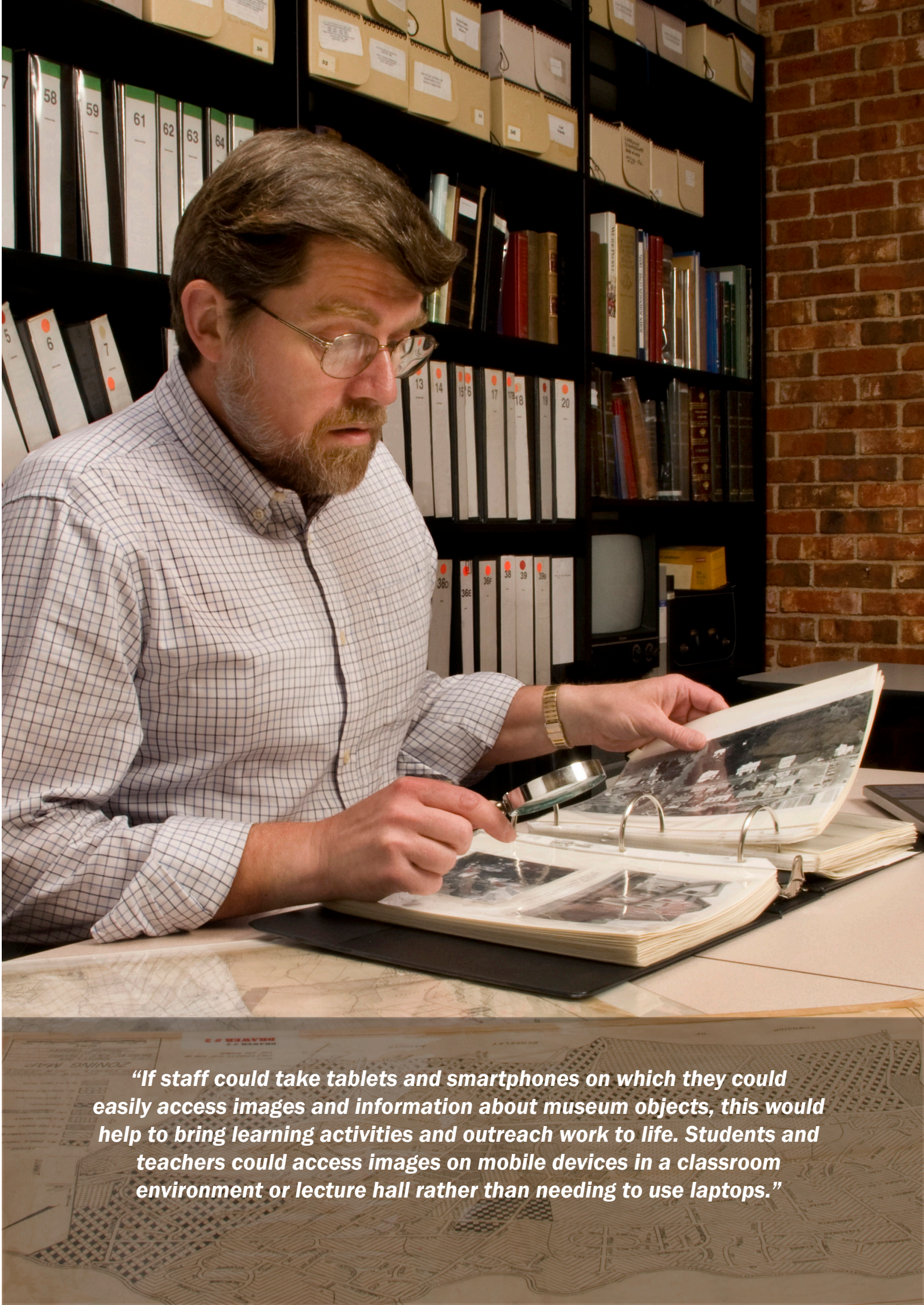
The IT systems that underpin a museum’s collection are complex and data intensive, with architecture that’s driven by the way records are stored rather than how the user experience plays out.

Museums are looking at ways to overcome these challenges, and it’s time for the collection management system to evolve into a more intuitive, mobile enabled tool which would save valuable time on essential museum tasks, and make it easier for new staff and volunteers to use.

A new approach to managing collections will keep museums running smoothly day-to-day while opening up opportunities for an exciting, collaborative world of discovery for the digital age.

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“If staff could take tablets and smartphones on which they could easily access images and information about museum objects, this would help to bring learning activities and outreach work to life. Students and teachers could access images on mobile devices in a classroom environment or lecture hall rather than needing to use laptops.”



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