Improving the Conservation Documentation Process at the Wellington Te Papa Tongarewa Museum

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Abstract

Te Papa Tongarewa Museum in New Zealand wants to improve their conservation documentation processes to accompany their future digital restructure in order to help their Conservation staff conserve their objects. The goal of this project was to provide recommendations on how Te Papa can accomplish this task. During the project, the team identified barriers in communication, limitations in technology, and inconsistencies in executing the process as issues hindering the conservation documentation process. With these issues in mind, the team developed eight documents that outline the conservation documentation process along with recommendations for improving them so the museum could more effectively and efficiently conserve their objects.

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Executive Summary

Introduction

Museums and their conservators serve as the guardians of invaluable objects from the past. Without their careful and meticulous work, the public would not be able to appreciate and learn from these objects, effectively losing a means of personally connecting to the past. To help conservators retain the ability to perform their job effectively, and thus allow for the continuation of these connections, it is important for their institution to have an efficient conservation documentation process (CDP) in place. This process encompasses the act of creating, editing, and handling archives as well as the other lifecycle processes an object may undergo during its time at the museum. This requires the attention of not only the conservator, but also staff vested in the management of the data produced in order to be successful.

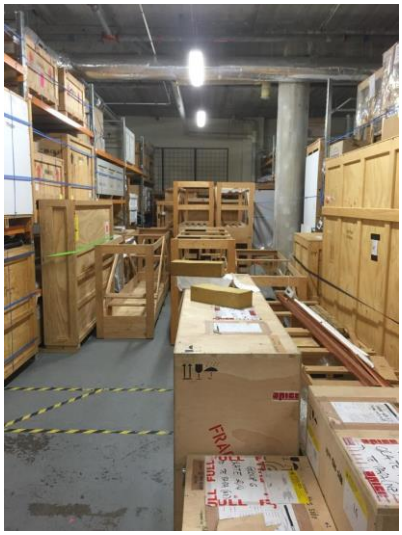

Figure 1: Te Papa store room

Te Papa Tongarewa, the national museum of New Zealand located in Wellington, is one such museum that serves a vital role in preserving history, especially the history of New Zealand. This includes displaying many objects created by Maori both in the past and present. With a collection of over two million objects that span five areas of study, it is crucial that the museum utilizes a robust CDP capable of managing such a tremendous workload. In addition to the unique size and scope of the museum's collection, Te Papa also lends and tours its objects all over the world, which requires the CDP to also be flexible and mobile.

As technology continues to develop and the size of the collection continues to increase, the staff at the institution have recognized the need for an updated version of their CDP. Currently, the conservators complete their condition reports digitally, but often have to first create them on paper as well as print out and hand annotate any associated photos due to limitations with their digital infrastructure. Other problems with the current CDP include inconsistent processes between staff members for executing the CDP, and barriers in communication between the departments involved. The goal of this project was to assist Te Papa in improving their CDP to aid in the management of their condition reports while increasing communication throughout the institution. The hope of the project was to aid the museum in working efficiently and continuing to preserve their objects for future generations to enjoy.

Methodology

To accomplish the project goal the team created the three objectives listed below. This section of the executive summary explains how the team achieved these objectives using the following methodologies.

1. Identify current issues with the conservation documentation process
2. Research existing solutions to the identified issues
3. Develop an improved model of the conservation documentation process

Identifying Issues

To identify the common themes in the CDP and the core issues presented in those themes, the team performed a case study on condition reporting, a series of semi-structured interviews with museum staff members, and observations on staff interactions. The team defined theme to mean a subject of interest. The team also defined issue as the standard term used by staff when discussing any type of problem with the CDP, and core issue as a broader encompassing definition of multiple specific issues. The team completed the case study on a non-collection object to help the team outline the steps of creating a condition report as well as to generate a better understanding of how that particular process worked in practice. The semi-structured interviews inquired about the interviewee's job responsibilities, view of the current CDP, preferences in working style, and hopes for the improved CDP. The purpose of the observations was so the team could observe how staff members worked with one another, especially between staff members that work in different departments. The culmination of the data helped guide the team in their research on existing solutions.

Research Existing Solutions

For objective two, research existing solutions, the team focused their research on addressing the core issues identified in the previous objective. The team interviewed outside institutions to inquire about their CDP and determine if any features of their methodologies would be applicable to improving Te Papa's CDP. In addition to conducting these interviews, the team performed research to identify existing solutions that had notable concepts or features that addressed some of the core issues.

Figure 2: Conservator working on painting

Develop an Improved Model of the Conservation Documentation Process

Before the team could develop the improved model of Te Papa's CDP, it was important to first create the existing model of the CDP. The team defines the model of the CDP as a collection of business process documents (BPD) that outline the condition reporting process and the life-cycle stages an object may undergo during its time at the museum. A BPD is a written document that outlines the people, tools, and steps required to complete a process. To create this model, the team outlined the current CDP

The team first created a series of initial outlines of the processes that make up the CDP by using data from the interview responses as well as consulting with the Conservation Manager. After completing the case study and the interviews, the team created a survey for the

CDP stakeholders to complete, which asked them to rate the importance of each of the previously identified themes on a scale from one to five, one being least important, and five being most important. The team distributed this survey to museum staff following the conclusion of a presentation of the team's initial outlines of the BPDs. Once the team created the current model and received all survey responses, they highlighted the steps within the CDP that presented core issues for the staff. The team then paired the highlighted core issues with existing concepts, methodologies, and features identified in the previous objective that could address the core issue, creating the improved model of the CDP.

Findings and Analysis

Identifying Issues

The team had the opportunity to perform and analyze eleven interviews with twelve interviewees. The team conducted one interview with two staff members simultaneously, and conducted the rest of the interviews with one staff member at a time. In total the team interviewed eight staff members working in Conservation, two staff members working in Information Technology, and two staff members working in Digital Collections and Access. From these interviews the team identified five major themes mentioned throughout the responses: *mobility*, *imaging*, *access*, *communication*, and *process*.

After identifying these themes the team analyzed the interview responses and their observations to generate a list of core issues associated with each theme. The list tallied the number of responses associated with the core issues, and from this the team discovered that the problem of familiarity with other staff members was the most frequently noted core issue in the interviews. This is important to note because at the start of this project the team had envisioned technology as the primary issue. Given the response data, however, it became clear that the issues went deeper than a matter of technology being out of date. Other core issues included difficulties with understanding the museum's digital asset management system, limited Wi-Fi, and a communication in the process of handling information from old reports.

Research Existing Solutions

Once data collection was complete, the team then moved on to researching existing solutions. The issues identified from the case study, interview responses from both Te Papa staff and outside institutions, and observations guided the research for existing solutions. In total the team identified ten pieces of software that addressed some of the core issues that required technological solutions. The main types of software the team analyzed were digital asset management, picture annotation, file exchange, speech-to-text, and project management.

In terms of addressing core issues that required administrative solutions, the team identified possible remedies such as quarterly meetings and targeted trainings. Holistically, the team's observations and interview responses led the team to deduce that the major problems hindering the system were mostly communication based.

Develop an Improved Model of the Conservation Documentation Process

With the core issues and existing solutions identified, the team was able to create the improved model for the CDP. To create this model of the CDP, the team first worked with the Conservation Manager to outline the current processes for creating, editing, and handling condition reports, as well as the seven life-cycle stages that objects undergo during their time at Te Papa. These seven life-cycle stages are acquisition, registration, housing, exhibition, loan, publication, and tour.

The team presented these outlines to a set of museum staff for their feedback on the outlines, and then distributed a survey at the conclusion of the presentation to the members of each stakeholder group. This survey, as mentioned above, requested the staff rate each of the themes for importance on a scale from one to five. From the responses to this survey the team discovered that, when averaging all of the responses across all departments and all themes, the most important theme to the staff was access with an average rating of 4.62, followed by mobility with an average rating of 4.52, and communication with an average rating of 4.51. This data helped the team to prioritize the themes so that Te Papa could implement the team's recommendation strategically based on need if necessary. After creating the BPDs from their initial outlines and addressing feedback from the update presentation, the team highlighted steps with core issues in the processes and paired the core issues with existing solutions or recommendations that addressed that core issue. The team also spoke with key contacts at the museum to ensure that they correctly correlated the steps to the appropriate core issues and recommendations. Upon completing the project, the team delivered eight BPDs to Te Papa, which included the recommendations.

Recommendations

Upon completing the analysis of the collected data, the team developed a list of recommendations to address the problems the staff members had with the current CDP. The following list is not the complete list of recommendations, but rather a shortened list of some of the most important recommendations.

- **The team recommends the museum to look into implementing Wi-Fi in the conservation laboratory.** This alleviates issues concerning mobility as well as access to files while away from a wired desktop.

- **The team recommends looking into ways to increase off-site mobility including data cards, virtual clients, and mobile devices.** Often, staff members work on objects while away from a wired desktop to create reports off-site. These recommendations may help the museum distribute information more quickly and more efficiently than the current process.

- **The team recommends improved training sessions for employees.** This recommendation serves to increase education and awareness of the programs, tools, and security at Te Papa.

- **The team recommends increasing communication between staff members in different departments by implementing meetings with the different departments together on a regular basis.** This is to ensure that staff members from all departments are aware of not only their tasks but of the tasks of other staff members. This also aids in giving staff members a greater understanding of the limitations of their facility in order to formulate solutions for the future.

- **The team recommends the museum provide more accessibility to annotation software.** During interviews with staff members and the case study, one of the main concerns was the difficulty of annotating images to communicate damages to others. Currently, only one computer in the conservation laboratory has Adobe Photoshop accessible on it. This recommendation aims to increase the productivity of staff members by allowing multiple users to work with the software at the same time.

- **The team recommends the museum incorporate outside concepts from existing software.** By using the concepts identified from the example software provided by the team, the Information Technology staff can upgrade the digital infrastructure to address the needs of the conservation staff. The consideration of incorporating these concepts could increase productivity among staff members, communication between departments, and effectively make the CDP more efficient. The team created a table of possible concepts, the problems they address, and the software in which the concept exists later in this report.

Conclusions

After the completion of this project, the team provided the museum with a series of improved process documents accompanied by a list of recommendations to provide Te Papa staff with the tools and data to move forward with improving their CDP. While at first this project appeared to be a technology issue, it soon became clear that the problem was much deeper. By performing the semi-structured interviews, case study, and survey, the team was able to discern that access to software, the mobility to work away from wired devices, and communication between departments were some of the core issues hindering the CDP. By identifying existing solutions and recommendations such as upgrading the Tory Street conservation facility Wi-Fi, providing mobile devices, and implementing a meeting with the stakeholders on a regular basis, the team hopes that the museum will be able to move forward and work more efficiently in the future, ensuring that Te Papa's collection remains a part of fostering the public's personal connection with their past.

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CHAPTER 1. Introduction

Vincent Van Gogh once said, "Great things are done by a series of small things brought together." Museums embody this idea, bringing objects together to explain and understand the human experience. A study performed on the visitor experience in museums described one benefit of visiting a museum as a "contribution to community lifelong learning" (Packer, 33). These institutions provide people the opportunity to uncover their history and appreciate their past. The ability to view tangible records of the past through a museum exhibition provides the individual the opportunity to create a visual, mental, and emotional connection to the history of the world they live in. Te Papa Tongarewa Museum of Wellington, New Zealand is one such institution that offers the world a place to come and embrace works of art, culture, and history alike in pursuit of the cultural enrichment of human society.

Te Papa Tongarewa Museum is the national museum of New Zealand and, according to TripAdvisor, is the number one tourist attraction in New Zealand (TripAdvisor, 2015). The museum is unique, comprised of millions of objects from five areas of study: art, history, Pacific culture, Maori culture, and natural environment. It would be extremely difficult for Te Papa to offer their vast collection of exhibitions to the public if not for the ability to conserve these objects for future generations. The process of conserving these objects entails keeping the objects in good condition while taking care not to compromise their integrity. In addition to the physical act of conserving, it is also important that conservators document their work. This procedure is known as the conservation documentation process (CDP). The CDP encompasses two aspects: the condition reporting process and the processes these reports affect. The first aspect is the act of creating, editing, and handling archives created by conservators that document an object's condition. The latter aspect is the life-cycle stages that an object undergoes during its time at the museum, such as acquisition, registration, housing, exhibition, loan, publication, and tour.

Currently, the CDP at Te Papa is time-consuming and cumbersome. This is due to barriers in communication, inconsistency in execution, and limitations in technology. The barriers in communication are the difficulties the departments involved

have interacting and exchanging information with each other. This barrier and the inconsistency in which the staff are executing the process, contribute to the inefficiency of the CDP. In addition, limitations in the museum's digital infrastructure, due to the lack of institution-wide mobility, attribute to the increased time it takes to execute the process.

The goal of this project, sponsored by Te Papa, was to assist the museum in improving their CDP to aid in the management of their condition reports while also increasing communication between departments. To accomplish this, the team first identified the issues with the current CDP. The team did this by performing a case study of the condition reporting process as well as interviewing and observing the museum staff. After identifying the issues, the team researched solutions that addressed these issues. To execute this, the team interviewed outside institutions and researched applicable software. The intention of these interviews was to determine if the outside institution's CDP had any components that were potential solutions to any of the identified issues in Te Papa's CDP. The goal of the software research was to compile a list of concepts and features that would help the museum's Information Technology (IT) department in their pending digital infrastructure upgrade following the conclusion of this project. Finally, using the data from accomplishing the aforementioned tasks, the team created an improved model of Te Papa's CDP. To achieve this, the team first created a series of business process documents (BPD), written documents that outline the people, tools, and steps required to complete a process. The team created a BPD for the condition reporting process as well as the other seven life-cycle stages, which are the processes an object may undergo during its time at the museum. The team then identified each step in the BPDs that exhibited any of the previously identified issues and attached recommendations to those particular steps.

The hope of the project was to help the conservators spend less time documenting their work and more time sustaining the objects for future generations. The longer an object stays on exhibit, the more generations can view this object and appreciate its cultural value. By recommending potential solutions that aim to remove communication barriers, inconsistencies in executing the CDP, and limitations in technology, Te Papa

Tongarewa museum can determine how to best improve their CDP and therefore preserve their collections for even more years to come.

CHAPTER 2. Background

This chapter provides an overview of pertinent background information concerning this project. The first section provides an overview of general conservation best practices and the role of the conservator in a museum. The following section gives additional background on Te Papa Tongarewa Museum including their conservation documentation process (CDP), conservation procedures, and their digital asset management system. The subsequent section describes the stakeholders involved in Te Papa's CDP. Finally, the last section introduces the background on the outside museums contacted throughout the project's duration.

2.1 Conservation of Artifacts

Conservation is the practice of retaining the integrity of an object for the purpose of preserving its historical value. This requires maintaining the object's condition as effectively as possible and minimizing the risk of damage from outside factors. How a conservator retains the integrity of an object in practice, however, is generally subjective. There are many different factors that contribute to how conservators decide to care for an object. These factors include the object's type, historical value, provenance, and cultural meaning. In addition, most museums vary in size, type of collection, and resources available, making the methods of conservation even more varied. For example, a museum that specializes in art galleries and paintings may have different conservation practices when compared to a natural history museum. There are standards that museums follow in order to properly manage the documentation generated to ensure the safety an object while on display. These standards ensure that a museum has "an appropriate method for identifying needs and determining priorities for conservation/care," as well as having "collections care policies and procedures for collections on exhibition, in storage, on loan and during travel" (American Alliance of Museums, 2013, para. 8).

2.1.1 Condition Reports

To keep track of an object's condition history throughout its time at an institution, museums need to create and edit condition reports, which are formal documents that note any changes in an object. The museum's staff complete these reports at various times, including but not limited to the time of the object's acquisition, treatment, loan, exhibition, or departure. Since most museums have their own unique specializations and corporate infrastructures there is no one consistent protocol for constructing these reports. Condition reports are necessary for both the overseeing institution and for institutions that borrow the object. The reports, usually accompanied by annotated photos, provide essential information to the borrowing institutions that not only help the interim caretakers care for the object but also track any damages that occur while the object is on tour.

It is critical that the public can see and experience objects of great importance, not only for the obvious benefits of public engagement and education, but also for the purpose of keeping their history alive and relevant. To accomplish this, many museums loan objects to and create traveling exhibitions for other museums and institutions around the world. Smaller museums that do not have the resources to bring in a sizeable acquisition of collections have the opportunity to display broader collections in cooperation with larger museums. For example, the Something Borrowed Program developed in England gives smaller museums access to larger works from the British Museum and the Renaissance East of England (Museums Association, 2015). To make this process feasible, it is essential that the partnering institutions have the ability to communicate effectively with each other. Condition reports not only serve as a means of facilitating this communication, but they also function as a legal document between borrowing and lending museums that denotes the transfer of liability of the loaned object.

When completing condition reports, it is important that the conservator takes great care not to damage the object. Conservators create and edit these reports in a thoroughly cleaned workspace with sufficient space for the object to sit. The manner in which conservators handle an object depends on the type of object. For example, a picture has different handling guidelines than a piece of furniture. Since pen ink can leave

permanent marks on an object if an accident occurs, staff members always use pencil to complete condition reports. If the staff member completing the report finds damage, he or she takes note of the damaged location on the object and the potential source. When writing the report, it is important for the individual conducting the inspection to be concise in his or her writing so future readers can understand what that individual observed. It is also important that if the conservator performs any treatment on the object, the condition report contains the rationale for the treatment (New Zealand Conservators of Cultural Materials, 2006). This is because in the case of certain objects, such as art pieces, treatments may compromise the creator's original intent for the object.

2.2 Te Papa Tongarewa Museum of Wellington

Te Papa Tongarewa Museum, located in Wellington, is the national museum and art gallery of New Zealand. The mission of the museum is to be "a forum for the nation to present, explore, and preserve the heritage of its cultures and knowledge of the natural environment in order to better understand and treasure the past, enrich the present, and meet the challenges of the future" (Museum of New Zealand Te Papa Tongarewa, 2015, para. 2). According to TripAdvisor, the museum is the top attraction in Wellington and won the 2015 Travelers' Choice Award (TripAdvisor, 2015). The museum is free and open to the public, displaying various objects spanning across five areas: art, history, Pacific culture, Maori culture, and natural environment (see Figure 3) (Museum of New Zealand Te Papa Tongarewa, 2015). The name, Te Papa Tongarewa, literally means "our container of treasured things and people that spring from Mother Earth here in New Zealand" (Museum of New Zealand Te Papa Tongarewa, 2015). The number of visitors to Te Papa passed the 22 million mark in 2013 (Museum of New Zealand Te Papa Tongarewa, 2015). Therefore, it is important to monitor the conditions of objects both in house and while on loan in order to allow the public the opportunity to see the objects of interest. Te Papa uses a collection management system called KE EMu, discussed in the following section, to keep track of all its objects.

Figure 3: Whale skeleton in natural environment exhibit

2.2.1 Te Papa's Digital Asset Management System

Te Papa utilizes the KE EMu (KE Electronic Museum management system) software to keep track of their condition reports. The "KE" in KE EMu represents the background database architecture that houses the electronic museum management system used by over 400 institutions (KE Software, 2015). The purpose of this software is to digitally keep track of an object's data as well as incoming and outgoing loans.

The KE EMu software has a variety of features that aid in collection care, research, digital asset management, object interpretation, and public engagement that make it one of the most well received management systems in use among larger institutions (KE Software, 2015). Tools such as condition check documentation and integrated pest management aid in collection care. For assisting in research, the program gives users the ability to input additional information on objects for later use or collaboration among other scholars. In terms of digital asset management, the system grants users the permission to upload data from different multimedia platforms to a consolidated record associated with the given object. In addition to the aforementioned features, the KE EMu software also gives institutions the ability to create exhibition descriptions, labels, brochures, and web-based synopses of objects and exhibits to help visitors gain more insight from their visit both on and off site. To get the information

from the system to the web, KE EMu provides the IMu publishing toolkit to its users. This toolkit grants managers access to their collections from their mobile phones, desktops, home computers, and other wireless devices and the ability to publish content to their institution's website. The toolkit also offers additional advertisement and attraction to potential visitors browsing their collections online. According to the KE Software website, KE EMu has multiple clients in addition to Te Papa including the American Museum of Natural History, the Houston Museum of Natural Science, the Manchester Art Galleries, and the Museum Victoria (KE Software, 2015).

Users of the software input data into the system manually via XML format. XML is a text format of data that humans and computers can both read (Bos, 2001). Once input is complete the users can choose to create the reports in a multitude of formats including XML, Crystal Report Writer, Microsoft Word, and Microsoft PowerPoint. Institutions also have the ability to exchange data from KE EMu system to KE EMu system via exporting into XML from one system and inputting the file directly into the second system. Users are also able to add links to helpful resources directly to their reports for future use.

In general, the software appears to be user friendly. On the KE EMu website, the company offers a "How to use KE EMu" course that teaches new users how to use the program. The course requires a two-day workshop booked ahead of time and consists of in-depth training on creating, editing, searching, and linking reports (KE Software, 2015). The Andrew W. Mellon Foundation, a non-profit organization dedicated to contributing to the humanities and arts departments in higher education, conducted a survey to determine the progress of digital technologies in museums and institutions around the world (Green et al., 2009). At the time of the survey, only 14 out of 206 respondents were currently using KE EMu, with only one respondent, the National Museum of the American Indian, having commented in further detail: "Overall, conservators were 'quite' and 'very' satisfied with the system, liking the retrievable reports, images and access to catalog information from other departments." (Green et al., 2009, pg. 35). According to the response received, it is evident this particular museum felt the system worked efficiently.

2.3 Conservation Documentation Process Stakeholders

Although collection management systems such as KE EMu are good for managing object data, it is important to take into account the individuals who have a hand in the CDP between departments. In particular, the Conservation, IT, and Digital Collections and Access staff are major stakeholders because of their direct or indirect interactions with both condition reports and the KE EMu software. The Conservation staff have the most experience when formulating reports and transferring them to the software. IT staff, on the other hand, are responsible for maintaining the digital infrastructure and managing the data used for generating a report. Members of the Digital Collections and Access staff at Te Papa are also stakeholders in the CDP because of their familiarity with the software and their ability to help staff members navigate the program. While not primary stakeholders, people of Maori descent have investment in this process as well because Te Papa houses a number of objects donated by various iwi (tribal groups) that are under Maori proprietorship.

Although the CDP involves all of the stakeholders, each department has their own priorities to keep in mind. The Conservation staff want to make the CDP simpler and more efficient by increasing the technological capabilities of their facility. The IT staff, on the other hand, pay more attention to assisting others with technological problems from all departments, not just conservation. They need to ensure that the digital infrastructure at Te Papa runs as smoothly as possible so that all departments can utilize the network properly. The Digital Collections and Access staff focus more on the distribution of information once KE EMu collects it. They want to ensure that the information from all reports is consistent and sharable to all departments. They also look to ensure that museum staff use KE EMu to its fullest potential. Finally, Maori representatives at Te Papa concentrate on ensuring staff members respectfully handle objects that belong to an iwi. The following section discusses the different stakeholders in greater detail and explains their roles in the CDP.

2.3.1 Conservation Staff

The Conservation department for Te Papa resides in a facility which is approximately a fifteen minute walk away from the museum as noted in Figure 4. The main function of this department is to maintain and preserve the objects and Maori taonga (treasures) held by the museum as well as properly store objects not currently on exhibitions or on loan (Museum of Te Papa Tongarewa, 2015). There are eighteen staff members at this location who work in four major areas: paper, paintings, objects, and textiles.

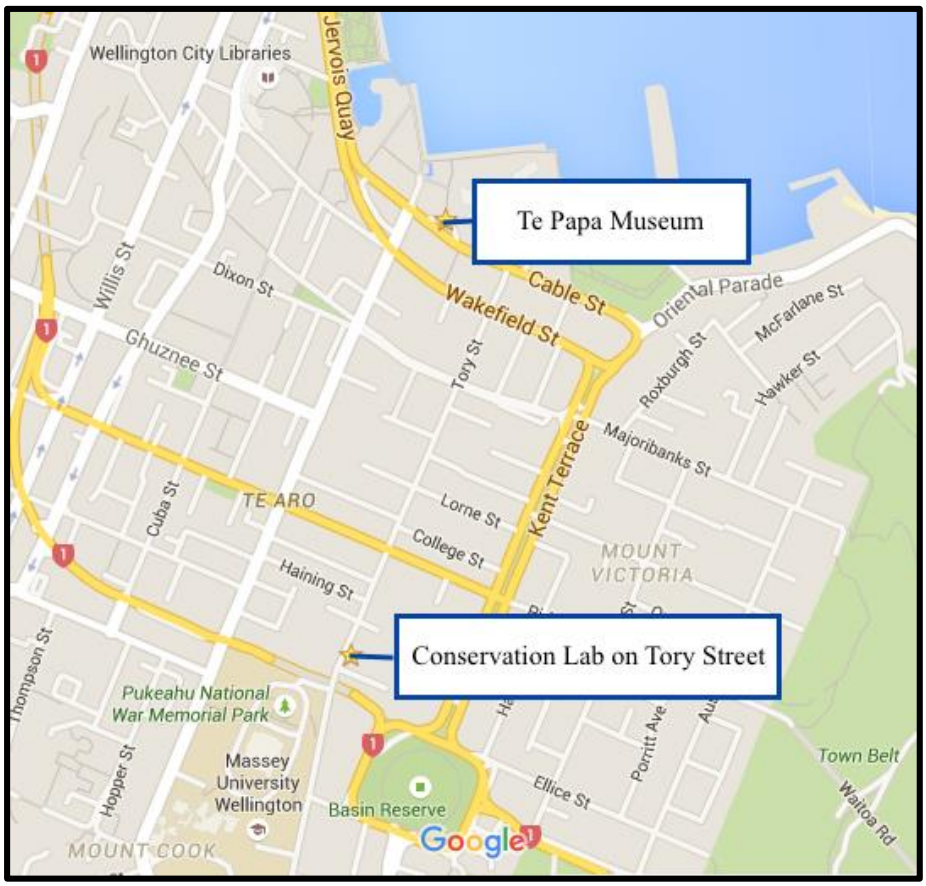


Figure 4: Conservation Lab location in relation to Te Papa Museum

The role of a conservator at Te Papa is to store, maintain, and document all of the objects at Te Papa. According to the museum's website, their role includes analyzing individual objects, documenting records of materials and techniques used, being

conscious of any ethical dilemmas that may arise from performing conservation, and working with collection managers in coordinating areas of storage and proper conservation methods (Museum of Te Papa Tongarewa, 2015). Conservation staff are responsible for creating condition reports for objects because of their direct role in the CDP. In addition to creating these reports, Conservation staff members are also responsible for sharing the information from the reports with staff from other departments, such as exhibition managers, collections managers, and couriers travelling with objects off-site. The techniques Conservation staff use vary depending on their specialty and the type of object receiving a report. For example, when working on textiles, it is important to remove jewelry before doing any work on the object (Museum of New Zealand Te Papa Tongarewa, 2010). With paintings, a staff member must place the object on a foam pad on a secure table so it is easier to pick up.

According to the New Zealand Conservators of Cultural Materials, the conservator's first responsibility belongs to maintaining the object for "its long-term preservation" (New Zealand Conservators of Cultural Materials, 2006, pg. 1). It is also important the Conservation staff are culturally sensitive towards the objects they handle. The conservator must consider the views and opinions of the object's owner when deciding a treatment plan. This is particularly important when considering the vast collection of Maori objects because the objects still belong to their respective iwi and the conservator should respect the cultural sensitivity of these objects.

2.3.2 Information Technology Staff

Situated in the main building of Te Papa, the IT staff are responsible for the digital infrastructure and technology of the museum. They help keep the museum functional so employees can get work done and visitors can come in and explore the collection. This includes updating the storage for the museum, providing wireless Internet throughout the museum's facilities, maintaining the museum's system hardware, and more. In addition, the IT staff answer any questions that museum staff members may ask about their technology and even provide assistance if necessary. The project team considered members of the IT department as stakeholders involved in the CDP due to the

fact that they maintain the technology Te Papa uses to help create and digitally store condition reports.

2.3.3 Digital Collections and Access Staff

The Digital Collections and Access staff currently consists of four employees located at the museum. According to Kupenga, the museum's internal website, the purpose of the Digital Collections and Access staff is to create and maintain the museum's policies for collection documentation so that individuals can utilize the collections and its corresponding information (Kupenga, 2016). Staff members who are a part of this department are the museum's experts in KE EMu.

Staff members from other departments in the museum can contact the Digital Collections and Access staff for the use and sharing of any information stored in KE EMu. The department works with the Conservation staff in utilizing KE EMu to its full potential, and the IT staff for managing the information and data stored on the museum's infrastructure. The main interaction this department has with the CDP is the handling of the information produced from the reports generated by Conservation staff. Conservation staff can contact the Digital Collections and Access staff if they experience any problems or issues in utilizing KE EMu.

2.3.4 Maori Community

The Maori of New Zealand are descendants of a Polynesian population from south-east Asia (Wilson, 2015). Although the exact date of settlement is unknown, historians suggest that the Maori came to the islands of New Zealand around the 13th century. Their first encounter with Europeans was when Dutch explorer Abel Tasman sailed through New Zealand around 140 years before Captain Cook made landfall in 1769 (Lysnar, 1915).

Since then, the Maori have continued to inhabit the islands of New Zealand. As of 2013, there are approximately 598,605 Maori residing in the country (Ihaka, 2013). Their collection is a special part of Te Papa (see Figure 5). Iwi loan out the

objects to the museum and help Te Papa organize the exhibits properly, as part of the Iwi Exhibition Programme (Museum of New Zealand Te Papa Tongarewa, 2015). Whenever there is an exhibition, kaumātua (elders) from the iwi stay at the museum and perform necessary ceremonial duties and other roles at the Marae, Te Papa's communal meeting place, located in the museum. Maori objects considered for loan or restoration require a Maori representative to assist in making decisions that are best for Maori and the museum. The Iwi Exhibition Programme is a vital part of the museum and "an important expression of mana taonga - the role of communities in the understanding and care of the collections" (Museum of New Zealand Te Papa Tongarewa, 2015, Work with iwi & museums, para. 6).

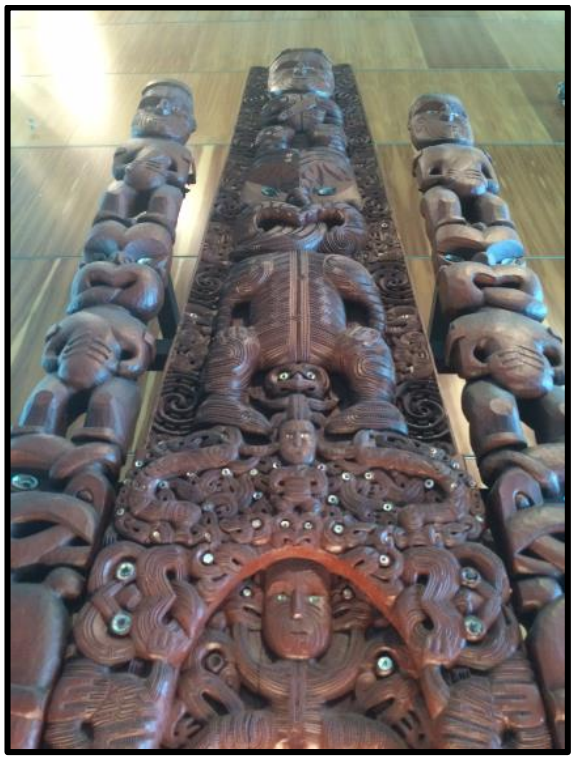


Figure 5: Waharoa (Gateway) at Te Papa

The Maori consider "all art objects produced by their ancestors [as] tribal treasures, with…tribal proprietary rights [as] an important issue…" (Hanson, 1989, pg. 896). It is important to note that there were previous instances when this cultural belief came into play as a key factor in an attempt to display Maori objects. One instance of

this was during the creation of the "Te Maori: Maori Art from New Zealand Collections" exhibit (Hanson, 1989). During the beginning stages of the exhibition a "distinction was made between the legal ownership of the objects, vested in the museums that [held] them, and the cultural ownership, which remained with the tribes" (Hanson, 1989, pg. 896). In addition to the distinction, the head organizer of the project, Sidney Mead, brought Maori elders from New Zealand to perform a dawn ceremony that lifted the tapu (taboo) from the objects displayed as they moved from location to location (Hanson, 1989). This consideration–that the museum recognizes all Maori objects as sacred and deemed cultural property of the Maori–is one to keep in mind when interacting with and managing any of their objects. The presence of tapu and mana (Maori words for taboo and power) in objects is common in Maori culture (Ministry of Justice, 2011). The Maori have a broad spectrum of objects that they consider sacred (Crelinsten, 1999, pg. 27). Thus, curators with large Maori collections must be extremely aware of the cultural meanings of the objects and acceptable object handling procedures. The notion of cultural significance is a common thread among many conservators involved with Maori objects. Vicki Heikell, a Maori paper conservator, considers the definition of "culturally significant" to mean that which has cultural significance to the Maori (Heikell, 1995). She states that not only are the oldest pieces of Maori heritage important, but that contemporary works are important as well. Consequently, any institution should take these cultural significances into consideration when choosing to display or loan out any objects gifted by Maori regardless of the object's age.

The International Council on Monuments and Sites (ICOMOS) New Zealand Charter for the Conservation of Places of Cultural Heritage Value is a document that exists to outline handling procedures for all objects deemed culturally significant. The document briefly outlines the purpose of conservation, conservation principles, and best practices for the conservation, restoration, and documentation of the objects. It is vital to duly consider any and all handling procedures when dealing with sacred objects because this becomes a direct reflection of the conservators respect for the culture (ICOMOS, 2010).

2.4 Overview of Outside Institutions

As mentioned previously, every museum has its own unique CDP. This is due to the variation in the size of the museum, the specialization of that museum, the types of objects held there, and the digital infrastructure available to the museum. While the processes involved are different from museum to museum, the goal of creating, editing, and handling condition reports efficiently is the same. To learn about these different CDPs, the team interviewed staff from the Worcester Art Museum (WAM), the Worcester Polytechnic Institute (WPI) Department of Preservation, Curation, and Archives, the Boston Museum of Science, the Los Angeles County Museum of Art (LACMA), and the Yale University Library. In this section, the team provides a brief overview of each museum's collections and its history. The team performed research on these outside institutions because they believed it was important to observe how other museums created and stored condition reports. In addition, the team was also curious to see how people worked with the system and their opinions on its functionality.

2.4.1 Worcester Art Museum

The WAM, in Worcester, Massachusetts, is the city's primary art museum and holds over 35,000 artworks (Worcester Art Museum, 2015). Founded in 1898, the museum has been maintaining artworks for more than a century. Their artwork collection features objects dating from before 2500 B.C. to present day, including art from ancient civilizations to contemporary art, largely categorized by region of origin, such as European, Pre-Columbian, and Japanese. The collection spans a wide variety of mediums, from paintings to sculptures to clothing. The WAM hired its first conservator in 1936, and has been conserving artwork ever since. Recently the museum received a grant from the Andrew W. Mellon Foundation to improve their conservation technology. The museum also hosts many events such as art classes and live armor and sword demonstrations.

2.4.2 Worcester Polytechnic Institute Department of Preservation, Curation, and Archives

The WPI Department of Preservation, Curation, and Archives is responsible for housing objects, newspaper articles, reports, and clothing apparel that are either directly related to the university or have a high monetary or cultural value. Examples of objects and reports stored in the Archives department include thesis papers from past WPI students, documents and newspaper clippings related to the founding of the school, and memorabilia of WPI students (Worcester Polytechnic Institute, 2015). The department also takes donations from past WPI students and benefactors to add to their collection, showing that the department takes in a variety of items and objects.

2.4.3 Boston Museum of Science

The Museum of Science founded in 1830 as the Boston Society of Natural History is "one of [the] world's largest science centers and Boston's most attended cultural institution" (Museum of Science Boston, 2016, para. 1). Six men founded the institution to initially collect and study natural history specimens and display them. Over the years, the museum has gone through a series of massive expansion. In 1951, the museum officially opened its first wing (Museum of Science Boston, 2016). The museum added and completed another wing called the West Wing by the early 1970s. The Elihu Thomson Theater of Electricity with its voltage electricity generator given by MIT in 1956 opened in 1980 (Museum of Science Boston, 2016). The Mugar Omni Theater, opened in 1987, shows movies with its five-story domed screen and immerses viewers in the image. With each of these expansions, the Museum of Science has continued to progress forward towards "bringing science, technology, and mathematics alive through its exhibits, programs, and more," making it one of New England's most visited cultural institutions (Museum of Science, 2016, para. 5).

2.4.4 The Los Angeles County Museum of Art

The LACMA founded in 1965 is "the largest museum in the western United States" (Los Angeles County Museum of Art, 2011, para. 1). The museum houses around 120,000 works of various categories including Asian art, Latin American art, Pre-Columbian art, Islamic art, modern works, and more. According to the museum's website, the mission statement of LACMA is "to serve the public through the collection, conservation, exhibition, and interpretation of significant works of art from a broad range of cultures and historical periods" (Los Angeles County Museum of Art, 2011, para. 3).

2.4.5 Yale University Library

Located in New Haven and officially founded in 1718, Yale University is home to the Yale University Art Gallery, Yale Center for British Art, Peabody Museum of Natural History, Sterlin Memorial Library, Beinecke Rare Book and Manuscript Library, Lewis Walpole Library, Collection of Musical Instruments, Whitney Humanities Center, Yale School of Art Galleries, and the Yale School of Architecture Gallery (Yale 2016). The Yale University Library, which is home to "15 million print and electronic volumes…housed in 15 libraries, including Sterlin Memorial, Beiencke, and Bass libraries, the Center of Science and Social Science Information (CSSSI), as well as many other school and departmental libraries" was of interest for this project because of its involvement in the development of the ConservationSpace web application for digital condition reporting and collections management (Yale 2016).

CHAPTER 3. Methodology

The goal of this project was to assist Te Papa in improving their CDP to aid in the management of their condition reports. Specifically, the task of the team was to determine potential improvements to address issues in the CDP that the museum's IT staff could implement. The team defined and adopted the term ***issues*** as the standard term used by Te Papa staff when discussing any type of problem with the CDP. To accomplish this goal, the team developed the following three objectives:

1. Identify current issues with the conservation documentation process
2. Research existing solutions to the identified issues
3. Develop an improved model of the conservation documentation process

This chapter addresses each objective and states the importance of the objective, the methods used to accomplish the objective, and the reasoning behind the chosen methodology. For each method, the chapter provides necessary background on and the logistics of implementing the method.

3.1 Identify Current Issues with the Conservation Documentation Process

The first objective was to identify the issues staff members from the involved departments had with the current CDP. To review, these departments are the Conservation, IT, and Digital Collections and Access departments. The team used three methods for gathering this information: a case study of the condition reporting process, semi-structured interviews with staff members from the three departments, and observations of staff members in their daily routine. This section outlines the methodologies for each of the data collection processes above.

3.1.1 Condition Report Case Study

The team conducted a case study on a non-collection item provided by a conservator at the museum. The reason for using a non-collection item, as opposed to a collection item, was to make sure that the team members did not accidentally cause damage to an object that may eventually go on exhibition or on loan to other institutions. The purpose of this personal case study was to gather more information and better understand the condition reporting process from the eyes of the conservator. This helped the team experience what a conservator must go through in order to complete a condition report for an object. Although the interviews allowed the team to identify the most prominent issues with the condition reporting process, the case study gave the team the opportunity to experience these issues first-hand.

To accomplish this method, a conservator provided an object the team could use to perform the case study. The team took notes on the steps to complete a condition report, including the issues the team observed and personally experienced during the case study. This served in documenting the existing steps in the condition reporting process, which the team later used for the creation of the existing CDP.

3.1.2 Semi-Structured Interviews

In order to better understand the problems each staff member faces in the CDP, the team developed and conducted interviews with staff members from each of the three departments the team identified as stakeholders. It is important to note that before arriving at Te Papa, the team was unsure how many interviews they would be able to conduct with museum staff. The specific type of interview chosen was a semi-structured interview (see Figure 6). The team chose semi-structured interviews because they are useful when obtaining information on a subject the interviewer is unfamiliar with (Cohen et al., 2006). A semi-structured interview is a variation between an unstructured interview, where the direction of the interview is up to the interviewee, and a structured interview, where a preset list of questions does not change and must go in that order (Harrell et al., 2009). In this case, the interviewer develops the questions beforehand to

keep the interview on track, while at the same time, ensuring that the team has the ability to ask follow-up questions in response to any of the interviewee's answers. If the interviewee wishes to provide additional information on outside topics not mentioned in the interviewer's plan**,** that is acceptable. Semi-structured interviews are also useful when an individual is available for only one interview. Because of the time constraints placed on the project, this method of interviewing allowed for rapid data collection while also providing the opportunity for personal interactions with the individuals of interest.

Figure 6: Semi-structured interview with museum staff member

Several contacts at the museum consulted with the team to revise the interview questions they created in the previous term to produce the finalized interview planning sheet. The team conducted interviews in groups of either two or four, depending on the schedule of the team at the time of the interview. One team member moderated the interview while the other participating members took notes. At the beginning of each interview, the moderator informed the interviewee of the purpose of the interview and requested consent to use the information from their responses. Interviewees had the option to skip any question in the interview they did not feel comfortable answering. The team recorded the interviews using cell phones, asking before the interview began if the interviewee was comfortable with the team recording the interview. The recordings facilitated transcription of the interviews and assured the team did not misquote any staff members.

3.1.2.1 Conservation Staff Interviews

Interviewing Conservation staff was essential to the project because their work revolves around caring for the objects in the museum and completing the majority of the condition reports. It was important to also keep in mind that each staff member also has a specialization for particular types of objects. For example, one staff member may focus on the conservation of paper objects while others focus on textiles, paintings, or sculptures. This diversity required the team to observe each specialty within the department to understand their different working styles and their preferred method of completing condition reports. The main contact from the Conservation department helped schedule interviews with staff members for the team.

The questions developed for interviewing members of the Conservation department are in Appendix A. The first section of the interview focused on the staff member's role in the Conservation department and their daily activities. The second portion of the interview asked about the interviewee's process for completing condition reports. Next, the team asked about the interviewee's relationship with other departments in the museum to determine how often staff members from different departments communicate with one another. The team then inquired about the interviewee's knowledge of the KE EMu digital asset management system, including any training performed, how they utilized the system, and the advantages and disadvantages of the system. This determined if the interviewee was encountering any barriers when using the software. Following this, the team focused on inquiring about the particular advantages and disadvantages of the current CDP in order to identify areas that needed improvement. To finish, the team asked the interviewee to describe their ideal CDP. This gave the staff members the opportunity to express their opinions and communicate what they wanted to see accomplished.

3.1.2.2 IT Staff Interviews

It was important to interview the IT staff because they are the ones responsible for monitoring the digital infrastructure of the museum. In addition, at the time of these interviews, the IT department was preparing for a redesign of their digital infrastructure; therefore, it was important to obtain their feedback as they may choose to incorporate the team's final recommendations into this redesign.

The interview questions for the IT staff are in Appendix B. These questions first asked the staff member to state their name and job title. They then asked the interviewee to describe the current digital infrastructure to the best of their knowledge to provide the team with details of how the system worked. The team then inquired about whether the interviewee thought any aspects of the system were problematic or could use improvement. Following this, the team asked the interviewee about their relationship with the Conservation department, as well as their knowledge of the CDP. This was to determine the quality of communication between the IT and Conservation departments. The team also asked the interviewee about their knowledge of KE EMu to determine their familiarity with the software and its use at the museum. Finally, they asked the interviewee to describe their ideal digital infrastructure to once again let the interviewee express their opinions and communicate what they wanted to see accomplished.

3.1.2.3 Digital Collections and Access Staff Interviews

The team also conducted interviews with members of the Digital Collections and Access staff because of their extensive knowledge of KE EMu. The goal of these interviews was to shed light on the function of KE EMu and its greater role in the institution. The Digital Collections and Access staff play a vital role in the CDP as they maintain the database that holds all the information stored in condition reports.

After consulting with both major contacts from the IT department and Digital Collections and Access department together, the contacts recommended using the same interview planning sheet for the interviews with both departments. This was due to the

similarities between the two departments. The team, however, did not incorporate the questions on familiarity to KE EMu for interviews with the Digital Collections and Access staff, as familiarity with KE EMu is part of their job description.

3.1.3 Transcriptions and Categorization of Interview Responses

After completing the case study and interviews the team transcribed the interviewees' responses. Once the team typed these responses word for word into text files, they first read through the transcriptions and identified the common themes mentioned in the majority of the interviews. For the purpose of this project, the team defines a ***theme*** as a subject of interest. They then read through the transcriptions again and categorized each individual response into the theme that best matched the response. The next step was to go through all of the responses from all interviews by theme and extracted any responses that expressed issues with the CDP. They grouped together similar issues in each theme. The team paraphrases these groups of related issues together as ***core issues***. If only one staff member mentioned an issue the team believed to be of importance, they still paraphrased the issue as its own core issue. As the team grouped these issues, they created tables for each theme, which listed the core issues and the number of staff in each department who had responses associated with that core issue. The remaining responses that the team did not classify as issues became reference material to further understand the current CDP as well as other general information about the museum.

As a hypothetical example of how this method works, the team would categorize a response such as "I enjoy staying at different hotels and meeting new people" into a "travel" theme, but not identify it as an issue. However, they would categorize a response such as "booking hotels on the fly is difficult because they are usually booked well in advance" or "using hotel booking websites is complicated" into the "travel" theme and also identify them as issues because the responses express a practical problem (i.e., an ***issue***) related to that theme. Based on the content of these responses, the team would group both these responses and their issues under the encompassing core issue of "difficulties with booking hotels". The findings and analysis section in chapter four of

this report further describes the themes identified by the team when analyzing the interview responses.

3.1.4 Observations

Throughout their time at the museum, the team had the opportunity to observe the workplace environment at Te Papa. These observations primarily came from attending regularly scheduled meetings, sitting in on impromptu trainings, and interacting with members of the staff during the workday. This method gave the team a broader understanding of the general problem.

The regularly scheduled meetings took place every Thursday morning as a mechanism for discussing the progress of the project. The following individuals were in attendance for the majority of the meetings: Head of Research, Conservation Manager, Information Technology Manager, Digital Collections and Access Manager, one Ethnographic Objects & Sculpture Conservator, one Textiles Conservator, the WPI project advisors, and all four members of the project team. Each week one team member would chair the meeting and another would serve as the secretary, with the team members rotating positions every week. In addition to taking down the minutes, the team also noted any observations.

Over the course of the project, the team also had the opportunity to sit in on two organized trainings. One training was on how to use the KE EMu software, and the other was on how to properly capture, upload, and annotate images using a newly acquired digital camera and Adobe Photoshop. The team asked questions during the trainings to gather information about their content, and also noted any observations on the staffs' reactions to the trainings.

In addition to the regularly scheduled meetings and trainings mentioned above, the team also was able to make observations during their regular interactions with the staff. The team always brought a notebook when traveling through the facility to keep track of their observations.

3.2 Research Existing Solutions to the Identified Issues

After extracting the core issues as stated in section 3.1.3, the team began conducting research to identify concepts that addressed these core issues in the CDP. The team accomplished this by using two methods: conducting semi-structured interviews with outside institutions of varying specialties and performing research on software solutions. The purpose of these methods was to derive recommendations for Te Papa that were conceptual in nature and thus be applicable long term, rather than suggest specific software that may go obsolete after a few years.

3.2.1 Outside Institution Interviews

To gain insight about other institutions' CDPs and the conservation field as a whole, the team conducted semi-structured interviews with outside institutions of varying disciplines. The museums and institutions interviewed include the WAM, the WPI Department of Preservation, Curation, and Archives, the Boston Museum of Science, the LACMA, and the Yale University Library. The team conducted semi-structured interviews with a staff member from each of the institutions who had knowledge of their institution's CDP. The purpose of using semi-structured interviews was to allow for extended responses while also keeping a structured list of questions to keep the interview organized. The team conducted four of the five interviews in Worcester, Massachusetts, and completed the remaining interview with the Yale University Library at Te Papa. The team conducted their interviews with the WAM and WPI Department of Archives in person at the interviewee's place of work. They conducted their interview with the Boston Museum of Science over the phone, and conducted the remaining two interviews with the LACMA and the Yale University Library through Skype calls. The team used a separate set of interview questions for each museum found in Appendix C.

3.2.2 Research on Existing Software

Since the team intended to provide the museum with conceptual solutions, the research performed on outside software was geared towards identifying examples of how to overcome certain core issues. The team accomplished this by researching software that could address a specific core issue. From this research, the team created a table of concepts, found in section 4.2.2, to address some of the core issues. This included the theme the core issue fell under, the core issue the concept addressed, the concept the team found, and the software that exhibited this concept. This aided with formulating the recommendations for the improved CDP, found in section 5.1 in this report.

3.3 Develop an Improved Model of Conservation Documentation Process

After completing the first two objectives, identifying the core issues and conceptual solutions, the third and final objective was to develop an improved model of the CDP. The team defines the ***improved model*** of the CDP as the collection of business process documents (BPD) that outline the condition reporting process and the seven life-cycle stages: acquisition, registration, housing, exhibition, loan, publication, and tour. The team created the improved model by outlining the current CDP, presenting these preliminary outlines to members of museum staff for feedback, and finally connecting the outlines and solutions together. The team outlined the current CDP by outlining each process as a BPD. They gathered feedback from a presentation on their initial outlines, discussed in section 3.3.2, in the form of staff members' opinions on the outlines along with responses from a survey the team distributed asking staff to rate the importance of the themes that the team had previously identified, described in further detail in section 3.3.2.1. To improve the current CDP, the team combined the outlines and solutions by highlighting steps in the BPDs that contained any of the identified core issues and connecting the highlighted steps to the conceptual solutions that addressed the core issues in the step. The following subsections provide further detail about each of these methods.

3.3.1 Outlining the Current Condition Documentation Process

To outline the current CDP, the team first conferred with the Conservation Manager to delineate the steps of each process in the CDP. This meeting provided the team with a flow diagram of the seven life-cycle stages an object may undergo at the museum, which the team used as the foundation of the BPDs. To supplement the creation of the BPD for the condition reporting process, the team utilized relevant data from their case study, interviews, and observations. For each BPD, the team outlined the people, tools, and actions necessary to execute the process that the BPD addresses.

3.3.2 Update Presentation with Te Papa Staff

The team also an update presentation to the museum staff members from the three departments with whom the team conducted interviews. At this meeting, the team introduced the themes they identified to organize the core issues and the initial outlines of the CDP. This was to ensure that the team was on the right track when creating the existing model as well as to show staff members where the problems were in the different steps of the CDP. During the presentation the team encouraged staff to interject at any point to give their feedback.

3.3.2.1 Survey of Importance

As previously mentioned, the team developed a survey on the importance of the themes described during the presentation (see Appendix D). The purpose of this survey was to provide quantitative data on the importance of each theme to relevant staff members as well as to use the data as a tool to weight the recommendations for the improved model. The team created the survey in a Google Form and printed copies out to distribute when the team finished the update presentation. The survey asked staff members to rank the importance of each of the themes on a scale of one to five, one meaning least important and five meaning most important. It is important to note that when the team created the survey, they had identified additional themes and sub-themes

that they later discarded and the survey referred to the themes as "categories" in the survey. This is because the team later narrowed down the themes by removing "system flexibility" and "resource management," and removed sub-themes to be more concise in their recommendations. However, the survey still addressed all the themes that the team ended up using.

In the presentation, the team displayed the information from the categorization of the transcribed interviews, including the different themes identified and the team's definition of those themes. The team presented the survey at the conclusion of the presentation to the staff members in attendance to complete in hardcopy form. Afterwards, in order to get more opinions from additional staff, the team emailed the digital version of the survey to staff members unable to attend the presentation with an accompanying explanation of the themes while offering to answer any questions that the staff members may have when completing the survey.

3.3.3 Connecting the Business Process Documents and Solutions to Create the Improved Model

Once the team completed the previous steps, they improved the existing CDP by annotating the BPDs and highlighting the steps with core issues identified in objective one. This annotated document provided a clear way of visualizing and communicating the core issues faced by the different stakeholders involved and laid the groundwork for the creation of the improved CDP. The team connected the highlighted steps to the recommendations the team created to address the core issues. The end result of this method was the production of an improved model of Te Papa's CDP.

CHAPTER 4. Findings and Analysis

This chapter describes the data collected after completing the team's methods outlined in chapter three and the subsequent analysis of that data. The team used this data to create the final deliverables for Te Papa to use for improving their conservation documentation process (CDP). The chapter has three main sections based on the objectives of the project: identify current issues with the CDP, research existing solutions to the identified issues, and develop an improved model of the CDP. In the first section, the team overviews the results of the case study, the data and identified themes from the semi-structured interviews, and the team's observation throughout the project. The second section discusses the results the team gathered from interviewing outside institutions and researching existing technologies. The third and final section discusses the final deliverables the team presented to Te Papa.

4.1 Identifying the Current Issues

Determining what concerns the staff members had with the current CDP was the first step in completing the first objective. The team completed a case study following the methodology described in section 3.1.1 to further understand the steps in the current CDP. To learn about the staff's process for completing condition reports, as well as their opinions on their process, the team conducted semi-structured interviews with museum staff members, as discussed in section 3.1.2. After the conclusion of the semi-structured interviews with the staff members from the Conservation, IT, and Digital Collections and Access departments, the team transcribed and reviewed the interviews to determine the common themes and categorize the issues by using the methods described in section 3.1.3. In addition to the data gathered from the methods mentioned above, the team also had the opportunity to record observations during staff member interactions, as mentioned in section 3.1.4. The following subsections present the findings gathered from these data collection methods.

4.1.1 Condition Report Case Study

A textile conservator provided the team with a non-collection object so two members of the team could perform a case study on the condition reporting process. The object itself was a textile of a three-masted ship sailing on water taped to a poster board with clear double sided tape (see Figure 7). From completing this case study, the team was able to break down this process into four main steps: identify damages the object has accumulated, measure the dimensions of the object, photograph the object to provide visuals in the report, and input all the gathered information into KE EMu.

Figure 7: Non-collection textile used for the case study

The two team members performed the first step alongside the conservator so she could provide information about what counted as damage to an object. The team members first inquired about the proper materials and preparation needed for this specific object, which included gloves, a metal probe, and a micro spatula. Depending on the object, a conservator may want to use other tools as well, such as a brush or a microscope. The conservator then proceeded to watch the team members as they examined the object and pointed out any damages they missed. The conservator also

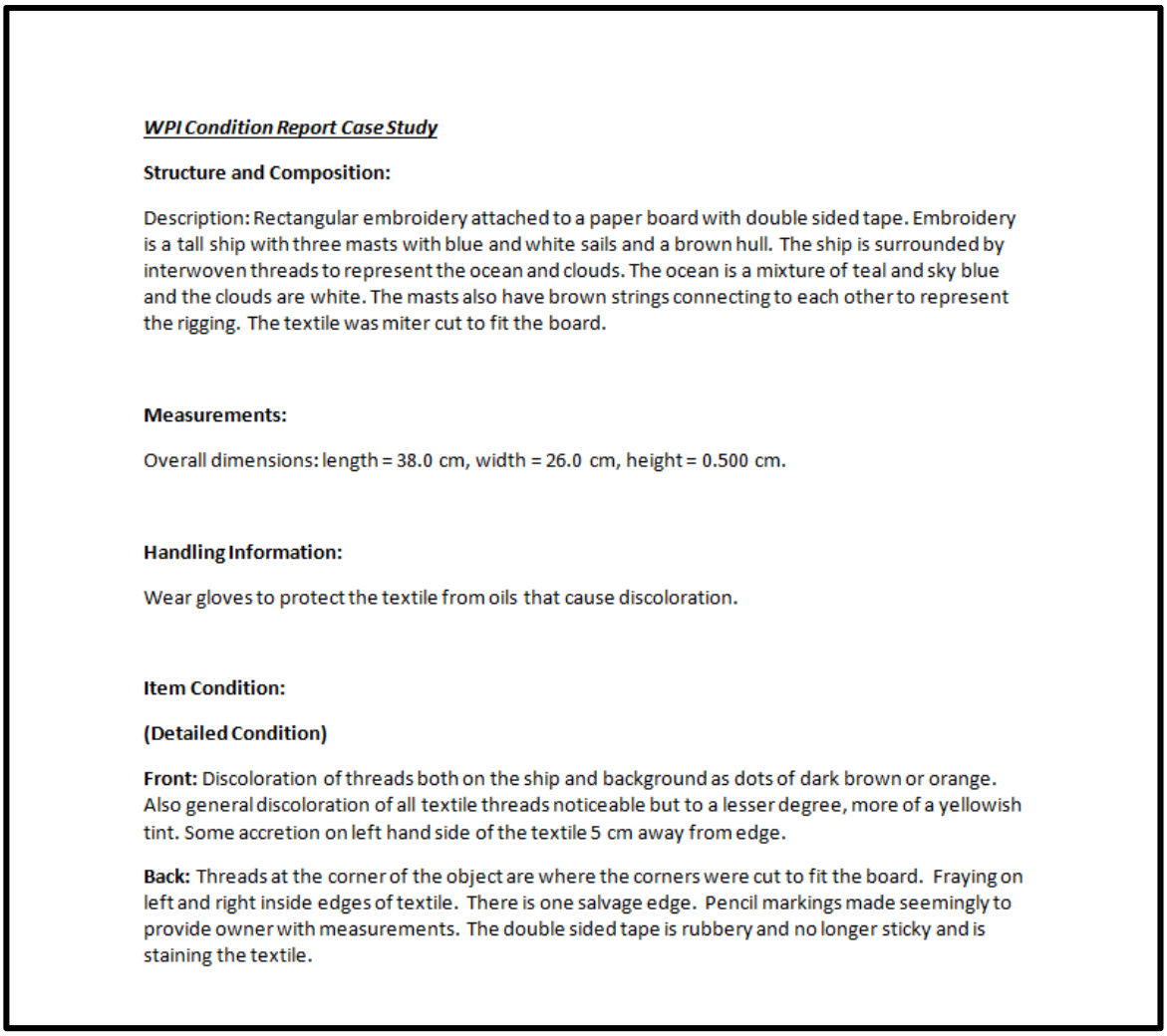
provided the team members with the proper terminology to describe particular damages. Overall, this was the longest step in the case study because of the unfamiliarity the team had with documentation procedures. It was important to note that the two team members were away from the desktop at the team's assigned space, so they had to take notes via pencil and paper.

The second step in the condition reporting process was to take measurements of the textile. The two team members moved the object to the desktop space and used a ruler to take down the measurements. Although the two team members were able to move the object of interest to the desktop for direct input of information, it was important to note this was only possible because the textile was small in size. Other objects may be too big, too valuable, or too fragile to move without accumulating additional damages, in which case the conservator must go directly to the object and take the measurements needed away from their computer. The object the two team members performed the case study on had simple dimensions due to the object's rectangular shape. This made the measurement process a simple procedure; other objects may have a more complicated shape and would thus require more time to take additional measurements.

The third step in the process was to photograph the object for the purpose of providing proper identification and notation of damages. The two team members took photos using their cell phones and then emailed the photos to themselves so they could access the photos via desktop and upload the photos to the report. This included two photos: one of the front of the object and the other of the back of the object. It was only necessary to take two photos because the textile was two dimensional. The number of photos required to provide substantial information on a condition report depends on the type and complexity of the object of interest. According to the conservator the team worked alongside, two dimensional objects require at least two images in their condition reports. Three dimensional objects, however, depending on the size and shape, can require many more images.

The final step in the condition reporting process was taking all the information gathered in the previous steps and uploading it into a new report in KE EMu. As the team did not have write access to KE EMu to create a new report, the team opened an

already complete condition report on KE EMu and filled in the required fields on a separate Microsoft Word document, as shown below in Figure 8.



WPI Condition Report Case Study

Structure and Composition:

Description: Rectangular embroidery attached to a paper board with double sided tape. Embroidery is a tall ship with three masts with blue and white sails and a brown hull. The ship is surrounded by interwoven threads to represent the ocean and clouds. The ocean is a mixture of teal and sky blue and the clouds are white. The masts also have brown strings connecting to each other to represent the rigging. The textile was miter cut to fit the board.

Measurements:

Overall dimensions: length = 38.0 cm, width = 26.0 cm, height = 0.500 cm.

Handling Information:

Wear gloves to protect the textile from oils that cause discoloration.

Item Condition:

(Detailed Condition)

Front: Discoloration of threads both on the ship and background as dots of dark brown or orange. Also general discoloration of all textile threads noticeable but to a lesser degree, more of a yellowish tint. Some accretion on left hand side of the textile 5 cm away from edge.

Back: Threads at the corner of the object are where the corners were cut to fit the board. Fraying on left and right inside edges of textile. There is one salvage edge. Pencil markings made seemingly to provide owner with measurements. The double sided tape is rubbery and no longer sticky and is staining the textile.

Figure 8: Microsoft Word document of mock condition report

Unfortunately, the inability to create new condition reports on KE EMu prevented the two team members from experiencing some of the difficult tasks the entire team had identified when speaking with staff members involved in the condition reporting process. The pictures the team took with their cell phones were much easier to upload and annotate from the Microsoft Word document than if they had annotated the photos by hand and scanned them. According to a number of conservators who work directly with KE EMu, they take pictures with cameras that provide a greater amount of detail than cell

phones and then upload these pictures onto their computer. The conservator prints out any images that need annotation, and overlays them with a sheet of clear plastic. The conservator writes on the clear plastic with a marker so he or she can accurately mark damages or deteriorations, scan the image with the plastic overlay, and then upload that image to KE EMu. These images sometimes contain arrows or lines indicating areas of poor condition with text underneath to describe what the arrows and lines mean. Overall, the process took the two team members approximately forty-five minutes to complete. They sent the mock condition report to the conservator who assisted the team in the case study for feedback. The conservator sent back their comments on the report, located in Appendix E. The team underlined and colored red any edits made by the conservator in order to properly identify the necessary changes. Most edits pertained to labeling the damages the object had with the correct definitions using the proper formatting.

Although the two team members successfully completed the case study, they also noted the difficulties in the steps of the condition reporting process they were unable to experience. For example, the supplied textile was small so it was easy to transport from place to place around the facility. The team observed the difficulties staff had when working near other larger objects including delicate whale skeletons and heavy painting frames that were not as portable as the textile provided. In terms of uploading images, the two team members attached the images onto the Microsoft Word document where it was easier to annotate using shapes to point out damages. A conservator, on the other hand, may want a high resolution image and would thus have to schedule a session with the museum's photography team. Even after the conservator or photographer captures the necessary images, those images still need annotations, which are usually done on a plastic overlay of the image. Despite the shortcomings with the team's accessibility to KE EMu and other conservation tools when performing the case study, the team was still able to outline the general steps in the condition reporting process and use these to create an accurate condition reporting business process document (BPD). The team outlines these steps later in this report in section 4.3.1.

4.1.2 Conducting the Interviews

The team conducted eleven semi-structured interviews with twelve museum staff members to identify the common issues people had with the current CDP. The team conducted one interview with two staff members simultaneously, and conducted the rest of the interviews with only one staff member at a time. The team interviewed eight members of the Conservation staff, two members of the IT staff, and two members of the Digital Collections and Access staff. Each interview varied in length, with the shortest one lasting fifteen minutes and the longest one lasting fifty-seven minutes, depending on the interviewee's responses. Figure 9 below describes the percentages of staff members from the different departments the team interviewed.

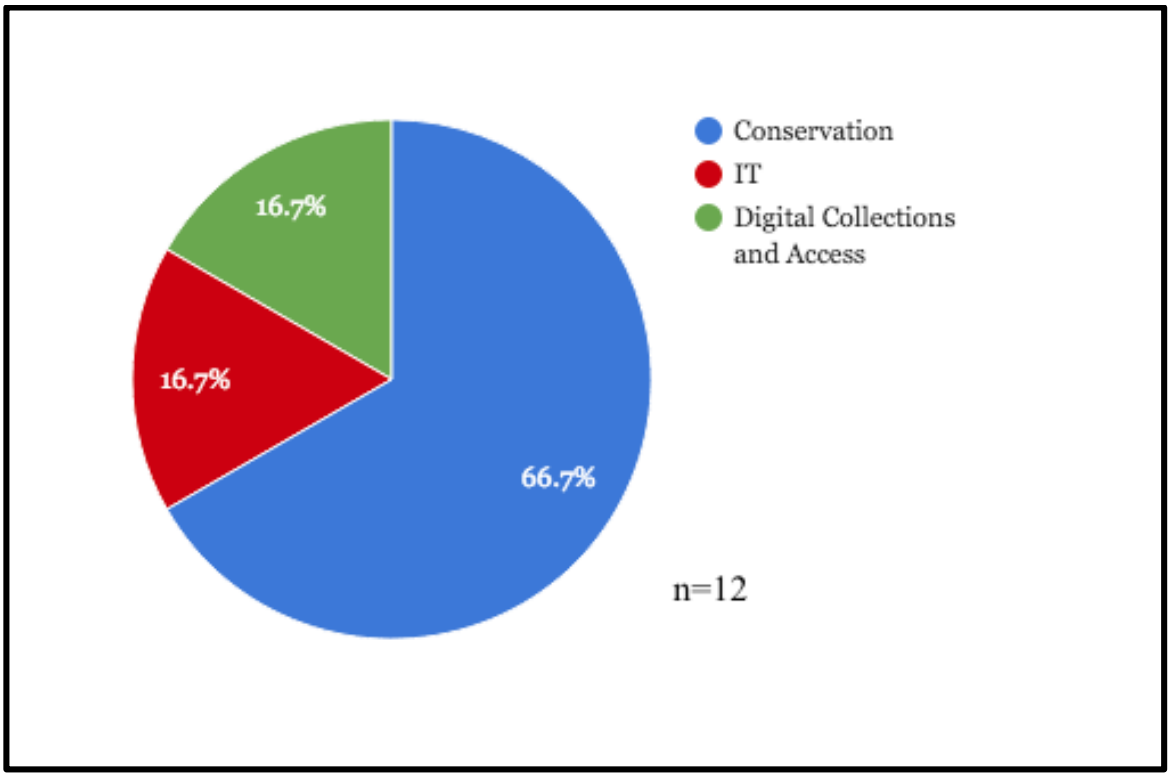


Figure 9: Percentage of interviewees working in each department of interest

The team interviewed the vast majority of the Conservation staff, even though the sample size appears small; this is due to the fact that the Conservation department is relatively small in comparison to other departments at Te Papa. The sample sizes for the

IT department and Digital Collections and Access department were smaller than the sample for the Conservation department due to limitations in availability and the department's involvement with the project.

Upon completion of the interviews, the team identified five themes: mobility, imaging, access, communication, and process. The following subsections describe these themes and the core issues identified from the interview transcriptions. Following the description of each theme and the core issues relating to the theme is a table showing how many different staff members from each department mentioned the core issues of that theme during their interview. Appendix F contains the interview transcriptions the team wrote based on the interview recordings. Appendix G contains the staff member quotes the team identified from the interview transcriptions that pertained to each theme.

4.1.2.1 Mobility

The team defined mobility as the ability of staff members to work without staying fixed to a location. This theme is applicable when staff members are both on and off site. On-site mobility refers to when a staff member is at a Te Papa facility and needs to work away from a desktop. This is especially pertinent to staff members who work at the Tory Street facility, as currently there is no Wi-Fi in the conservation laboratory. Off-site mobility refers to when staff members are not working at a Te Papa facility. This occurs when a staff member travels to or with an object that is either under consideration for acquisition, on loan, or on tour. A staff member needs the ability to gather information on an object in order to create a condition report for that object while the staff member is away from Te Papa. After analyzing the transcriptions of the interviews, the team identified the following eight core issues concerning mobility. The team lists these core issues below in order of the number of staff members who mentioned the core issue and then provides an explanation of each core issue.

1. Insufficient number of mobile devices
2. No Wi-Fi in conservation lab and limited Wi-Fi throughout the rest of the institution

3. Difficulty working by an object
4. Complications with sending and obtaining information on condition reports
5. Not able to bring personal devices
6. Trouble utilizing HighTail
7. Problems with creating, editing, and handling condition reports off-site
8. Not having curators in the same building as Conservation staff

Insufficient number of mobile devices refers to staff members requesting to use portable devices as a means to increase their mobility. *No Wi-Fi in the conservation lab and limited Wi-Fi throughout the rest of the institution* refers to staff members having problems accessing Wi-Fi throughout Te Papa's facilities. *Difficulty working by an object* is when staff members need to physically be next to an object to complete their work, but have trouble bringing all their necessary tools to the object. *Complications with sending and obtaining information on condition reports* refers to when staff members have to use workarounds to access, or cannot access, required information stored in condition reports to complete their work. *Not being able to bring devices* refers to complaints from museum staff about the quality of the current technology provided and their desire to use their own personal mobile devices for their work. *Trouble utilizing HighTail* refers to difficulties staff members have utilizing HighTail, the museum's file sharing software, whether these difficulties arise from technical problems or lack of knowledge. *Problems with creating, editing, and handling condition reports off-site* covers any trouble the museum staff have when dealing with condition reports while away from the museum, usually related to access to Internet. *Not having curators in the same building as Conservation staff* refers to when curators have to move between buildings, which in turn delays work.

Mobility Core Issues	Number of Staff who Mentioned Core Issue During Interviews			
	Total	Conservation	Information Technology	Digital Collections and Access
No Mobile Devices	8	6	1	1
Limited or no Wi-Fi	5	2	1	2
Difficulty working near object	5	5	0	0
Complications with sending and obtaining information on condition reports	3	3	0	0
Not able to bring personal devices	2	0	2	0
Trouble utilizing HighTail	1	0	1	0
Problems with creating, editing, and handling condition reports off-site	1	1	0	0
Not having curators in the same building as Conservation staff	1	1	0	0

Table 1: Mobility Core Issues

4.1.2.2 Imaging

Staff across the three departments repeatedly brought up the theme of imaging. This theme refers to core issues around utilizing images in condition reports. Images allow the conservator to clearly see the state of an object at a given point in time, making them useful for conservators when they are away from the object. As one interviewed conservator stated, "the word always used to have primacy and something to be believed, but now we believe images just as much and sometimes more than we believe the words used to describe things, because seeing is believing," highlighting the importance of images in condition reports.

First, either the conservator or a member of the photography team captures an image. After capturing the photos, the conservator will either upload them to their local machine or a photographer will send the image to the conservator, who then downloads the image to their local machine. Once their local machine has the image, the conservator can print off the image and annotate it by means of writing on a clear plastic overlay. Once the annotations are complete, the conservator scans the image with the plastic sheet on top of it back into their local machine and then uploads this annotated image to the correct condition report on KE EMu. After analyzing the transcriptions of the interviews, the team identified the following five core issues concerning imaging. The team lists these core issues below in order of the number of staff members who mentioned the core issue and then provides an explanation of each core issue.

1. Trouble with uploading images to KE EMu
2. Associating relevant data with images
3. Difficulty with annotation
4. Difficulty moving images between devices
5. Issues with scheduling with photography team

Trouble with uploading images to KE EMu refers to the difficulty of attaching or uploading image files to a report on KE EMu. Currently Conservation staff upload images either by emailing images to themselves, connecting a USB device to their

desktop computer, or waiting for the photography team to upload and share images. *Associating relevant data with images* come from difficulties with keeping the images of an object in KE EMu attached to the additional data of that object, such as name and description. Staff cite difficulties with understanding or implementing the conventions for attaching images to reports. *Difficulty with annotation* deals with problems staff members have with making annotations with plastic overlays and converting them to digital files. The process of uploading the original and annotated images to KE EMu and attaching them to their respective reports requires significant time and takes up a large amount of storage space. *Difficulty moving images between devices* is when a staff member at the museum has trouble sending images to other staff members for them to access. This situation hinders staff efficiency. Finally, *issues with scheduling with the photography team* at Te Papa comes from the limited availability of the photographers. This process can take up to two weeks to complete, pushing the conservator's timeline back substantially.

Imaging Core Issues	Number of Staff who Mentioned Core Issue During Interviews			
	Total	Conservation	Information Technology	Digital Collections and Access
Trouble with uploading images to KE EMu	10	7	2	1
Associating relevant data with images	7	6	0	1
Difficulty with annotation	5	5	0	0
Difficulty moving images between devices	4	4	0	0
Issues with scheduling with photography team	2	2	0	0

Table 2: Imaging Core Issues

4.1.2.3 Access

The theme of access refers to the ability of staff to utilize available tools provided by the museum. There are many different tools that the staff use to complete their work at the museum, such as KE EMu, annotation software, virtual clients, cameras, or other software and equipment. These tools help staff find information, stay organized, and work efficiently. After analyzing the transcriptions of the interviews, the team identified the following nine core issues concerning access. The team lists these core issues below

in order of the number of staff members who mentioned the core issue and then provides an explanation of each core issue.

1. Data management with KE EMu
2. Slow running technology
3. Trouble accessing certain programs
4. Security of files
5. Limited access off-site
6. Problems accessing images
7. Access to specific equipment in multiple locations
8. Difficulty accessing cameras
9. Workflow and location of objects

Data management with KE EMu refers to any difficulties staff members have with utilizing KE EMu, whether it involves accessing, understanding, or storing information on KE EMu. *Slow running technology* is in reference to complaints staff members had about their technology running slow and hindering their work. *Trouble accessing certain programs* refers to the staff's limited use of software due to problems such as licensing fees or other restrictions. *Security of files* refers to problems that hinder authorized personnel from viewing files that the museum has restricted. *Limited access off-site* refers to the inability to access virtual clients, software, and object data required for the conservator's responsibilities abroad. *Problems accessing images* applies to when staff members need to use an image for their work, but having to request access to an image or their inability to locate the image in KE EMu delays their work. *Access to specific equipment in multiple locations* applies to when staff members need to work in a location other than their desk but do not have the proper tools at their temporary location of work. *Difficulty accessing cameras* refers to problems staff members have accessing and using cameras to take photographs necessary for their work. *Workflow and location of objects* refers to difficulties staff members have when locating objects that staff are working on and other project management issues.

Access Core Issues	Number of Staff who Mentioned Core Issue During Interviews			
	Total	Conservation	Information Technology	Digital Collections and Access
Data management with KE EMu	7	5	0	2
Slow running technology	7	3	2	2
Trouble accessing certain programs	6	4	1	1
Security of files	5	4	1	0
Limited access off-site	4	3	1	0
Problems accessing images	4	4	0	0
Access to specific equipment in multiple locations	2	2	0	0
Difficulty accessing cameras	2	2	0	0
Workflow and location of objects	2	1	0	1

Table 3: Access Core Issues

4.1.2.4 Communication

The team identified communication as a theme that encompasses the interactions between the departments involved in the CDP. Communication is the direct interactions between individuals within departments as well as the interactions between individuals outside of their given departments. In addition, communication can also be the transfer of concepts and ideas between individuals, examples of this being the staff generating and participating in various educational trainings and workshops. The work of each department affects all of the other departments, either directly or indirectly, and by understanding how their work affects other staff members, the museum can accommodate others more effectively throughout the CDP. A condition report is not effective if future conservators cannot understand it. One conservator speculated that "the institution won't always be able to access specific contents from my mind because it won't always be there, and so the information requires clear means of delivery to the system." This is a reminder that these objects will likely outlive the conservators that currently watch over them. After analyzing the transcriptions of the interviews, the team identified the following six core issues concerning communication. The team lists these core issues below in order of the number of staff members who mentioned the core issue and then provides an explanation of each core issue.

1. Familiarity to other staff
2. Problem understanding KE EMu functions
3. Complexities with training
4. Variation in working preferences
5. Limited familiarity to technology
6. Difficulty communicating ideas in old reports

Familiarity to other staff refers to the knowledge staff members have of the responsibilities and tasks of their colleagues both in their department and in other departments. The team noticed a lack of understanding of the roles of different departments from staff members, which they believe to be the cause of many of the

previously mentioned core issues. *Problems understanding KE EMu functions* involves how knowledgeable staff members are of all of the functions and capabilities of KE EMu. It was clear many staff members were not using KE EMu to its fullest potential, possibly making their work more difficult than necessary. *Complexities with training* is about the training sessions staff members received upon employment at the museum and afterwards, and how much information the staff member retained by the completion of the training. *Variation in working preferences* refers to staff members completing reports in an inconsistent manner, which sometimes makes it difficult for other staff members to pick up tasks their colleagues previously started. *Difficulty communicating ideas in old reports* occurs when staff members must interpret what other conservators meant in previous reports. If a conservator cannot understand an old condition report, then the condition report is essentially useless. Finally, *limited familiarity to technology* refers to the varying levels of awareness staff members have of the technological capabilities at Te Papa.

Communication Core Issues	Number of Staff who Mentioned Core Issue During Interviews			
	Total	Conservation	Information Technology	Digital Collections and Access
Familiarity to other staff	11	7	2	2
Problem understanding KE EMU functions	9	6	1	2
Complexities with training	8	6	1	1
Variation in working preference	8	7	1	0
Difficulty communicating ideas in old reports	7	7	0	0
Limited familiarity to technology	7	5	1	1

Table 4: Communication Core Issues

4.1.2.5 Process

Process is the way in which staff members execute the CDP. This information was important because it helped the team understand each staff member's perspective of the current CDP, including what they thought the advantages and disadvantages were in terms of the current system functionality. Most of the interview responses related to this

theme pertained to staff members either explaining their process step by step or providing an overview of their job description. After analyzing the transcriptions of the interviews, the team identified the following five core issues concerning process. The team lists these core issues below in order of the number of staff members who mentioned the core issue and then provides an explanation of each core issue.

1. Parts of current process are too time consuming
2. Preferring analog over digital technology
3. Preferring digital over analog technology
4. Taking convoluted workarounds to certain processes
5. Difficulty accessing and understanding information from retired or inaccessible staff members

The parts of the current process that are too consuming refers to the amount of time staff members spend on certain steps of the CDP. *Preferring analog over digital technology* refers to staff members being more comfortable using analog technologies such as paper and pencil to record notes on an object. This may result in conservators taking a longer time to complete condition reports, as they have to transcribe all their written notes into the computer, later stored in KE EMu. *Preferring digital over analog technology* is the opposite of the previous core issue in that it is about staff members preferring to use digital technologies such as computers to complete tasks. This is a problem as some staff consider their work hindered because they are not able to use efficient tools to complete their tasks. *Taking convoluted workarounds to certain processes* is in reference to the complexity of the methods staff members perform for the completion of the CDP, making their work more time consuming. *Difficulty accessing and understanding information from retired or inaccessible staff members* is about the transfer of information between staff members after they depart from the museum. If staff members do not properly store and explain their work, future conservators will not be able to utilize it, rendering it worthless in the long term.

Process Core Issues	Number of Staff who Mentioned Core Issue During Interviews			
	Total	Conservation	Information Technology	Digital Collections and Access
Parts of current process are too time consuming	9	7	1	1
Preferring analog over digital technology	9	8	0	1
Preferring digital over analog technology	7	6	0	1
Taking convoluted workarounds to certain processes	6	5	0	1
Difficulty accessing and understanding information from retired or inaccessible staff members	3	3	0	0

Table 5: Process Core Issues

4.1.3 Observations

The observations made during the team's time at the museum carried considerable weight in the team's final presentations and report. The opportunity to observe as museum outsiders provided the team with additional insight that they might not have otherwise encountered. The team's observations from the first week at the museum,

attending weekly sponsor meetings, observing the process in action, and sitting in on various trainings and events all contributed to a holistic perspective on the CDP and more generally the functionality of Te Papa itself.

Even from the team's first interactions with the staff, an institution-wide communication barrier was notable. People from different departments were aware of the general scope of their colleagues' works, but were not as well versed in the cross-talk and process required to connect themselves to that work. For example, on the first day of the project, the team observed the differing expectations for the project from the managers of the different departments. While the Conservation department initially expected the team to perform a feasibility analysis of specific applications, the IT department expected the team to propose a series of concepts that the IT department could use to upgrade the system without relying on outside systems.

The most notable observation consistently witnessed during the weekly sponsor meetings was the habitual inclination of the staff to pause and discuss a particular topic more thoroughly. Whether this brought about questions on a point of interest, a personal reflection, or an outward means of processing and thinking, it was an expected and encouraged practice during these structured bouts of shared time. These observations led the team to become more aware of these differences between departments and how they viewed the solution to the problem. While the Conservation department liked to discuss specific software that addressed their problems in detail, the IT department was more apt to not focus on the details of the CDP but instead broaden the conversation to the big picture concepts that could eventually be applicable to the process upgrade.

Often when members of the staff pulled the team aside throughout the day, the team was able to observe the staff working in real time and learn more about the objects they were handling. This provided essential information about how the staff executed the CDP and aided in the formation of the team's recommendations. From these interactions the team saw clearly that the time it took to work on objects was dependent on the object type and where the object was going. The team observed that some objects would stay in the lab for days or weeks, while others would be around for only half a day. These and other observations made it apparent to the team that the CDP was dependent on multiple

variables and therefore it was important to address each problem individually rather than try to address them all as one unit.

By experiencing some of the various trainings offered to staff members, the team realized the level of education the staff receive on the provided tools the staff use as part of their routine. From this experience the team noted that these trainings were very general in terms of scope. The details of the programs were often provided if staff inquired about them, however the focus was more on the basic functionality, rather than the specifics. In addition, the team noticed the unstructured organization of most of the trainings, which proved beneficial in terms of promoting discussion. Due to the open nature of the unstructured trainings, however, it was easy for the trainings to skip around and become hard to follow.

4.2 Research Existing Solutions to the Identified Issues

Once the team identified the core issues with the current CDP, the team shifted its focus to how the museum could address them. The purpose of this objective was not to find and recommend a specific software or hardware, but rather to identify the concepts needed to help address the core issues in the CDP. As mentioned before, at the time of the project the digital infrastructure of the museum was undergoing reconstruction and the IT staff was planning on using the team's recommendations while planning their redesign. The team conducted interviews with five outside institutions: the WAM, the WPI Department of Conservation, Preservation, and Archives, the Boston Museum of Science, the LACMA, and the Yale University Library. In addition, the team investigated other existing software, applications, and additional tools with concepts that could help address some of the identified core issues with Te Papa's CDP. Outside software could only address eight of the twenty-five core issues, with the remaining seventeen requiring more administrative solutions.

4.2.1 Outside Institution Interviews

In addition to interviews with staff members, the team interviewed personnel from institutions outside of Te Papa. This was to gain more insight into the conservation process as a whole and determine how other institutions handle their CDP. It was possible that other institutions were going through or have already gone through similar transitions in improving the documentation system. Therefore, it was important to note the methods used by other museums and see if Te Papa could use any aspects of other institutions' CDPs. The following subsections go over the information found from the interviews with the outside institutions. The institutions interviewed were the same ones that the team conducted background research on in section 2.4.

4.2.1.1 Worcester Art Museum

When interviewing with the WAM, the team spoke with a member of the WAM's registrar's office. The museum archives conservation data using software called Conservation Studio and The Museum System (TMS). The format for Conservation Studio is in a style that is very convenient to museum conservators, although its features may seem unintuitive to a non-conservator. TMS is an open-source software, allowing a programmer to adjust the software to the museum's specific needs, making the software very flexible. Customizing the software, however, requires a dedicated programmer, a luxury the WAM and most other museums do not currently have. The WAM staff create many of the conservation records at the WAM on paper and scan them into a digital database as a PDF document. This is because many of the conservators are most comfortable with documenting on paper, although the museum is currently shifting towards more digital solutions.

Similar to Te Papa, the WAM loans out many of its artworks to other institutions. A courier often accompanies these artworks. The courier will arrive at the loaning institution and complete a condition report with the loaning institution, agreed upon and signed by both parties. Unpacking and checking an artwork is time consuming, especially as the museums make a point not to rush the process so as to not hurt the

artwork. Thus many couriers are usually on tight schedules, and according to the interviewee, prefer paper copies of condition reports because the couriers can complete them relatively quickly and are more reliable.

4.2.1.2 Worcester Polytechnic Institute Department of Preservation, Curation, and Archives

The team interviewed the assistant director of the WPI Department of Preservation, Curation, and Archives. In total, the WPI Department of Preservation, Curation, and Archives contains 4,000 to 5,000 linear feet of material, including about 4,700 books, 1,200 works of art of both framed pictures and sculptures, and over 100 unused T-shirts in one collection alone. Currently, the department utilizes PastPerfect software to track information on each object regarding its condition and location. The process begins when an employee first admits an object. Available staff perform an appraisal to get an idea of the historical or artifactual value. The staff member then records the object in an accession log done on paper because it is quick and easy to use. This contains the location information of the artifact while in the department. Finally, a staff member completes a report using PastPerfect, stating the condition and material of the artifact.

When the WPI Department of Preservation, Curation, and Archives loans out an object, the staff create a loan form that lists the object's accession number as a unique identifier. In some cases, objects may have multiple identifiers. A permanent staff member signs the object out when he or she completes the report. In some cases, if an object is too valuable, a staff member may decide to loan a copy of the object instead. When the borrower returns the object, the department staff inspects it for any damages, and checks it in so there is record of the object's return. The staff member records additional information such as the travel history of the object while on loan.

4.2.1.3 Boston Museum of Science

The team conducted an interview with an assistant curator at the Museum of Science to learn more about the museum and how it utilized KE EMu to keep track of all of its objects and collections. The museum often has about twenty-five to thirty percent of the museum's collection on display for the public to view. Unlike other museums that are research institutions, the main focus of the Museum of Science is to show as much of the collection as it can to the public. Hence, the museum has to be able to utilize its CDP to its fullest potential.

The museum's use of KE EMu software has some negative aspects. One of the negative aspects of KE EMu from their perspective was that the fields in the software are not mutable. The use of the software is mainly for art, which is a problem since the Museum of Science has objects from disciplines other than art, such as natural history and natural science. Additionally, another negative aspect is that KE EMu only allows users to search for information via the name of an object as opposed to searching via other variables such as year acquired or location of origin. The museum inputs all its condition reports into KE EMu as files, and only a few collection officers can access the software and the entire collection of the museum. The museum needs a programmer to develop KE EMu to allow non-museum staff to search the collection. To provide easier access to the collection, the museum also needs someone to place descriptions of the objects onto their website. The museum hopes to provide more access to its collection through KE EMu once they satisfy these needs.

4.2.1.4 The Los Angeles County Museum of Art

The team interviewed the Assistant Registrar and Exhibitions officer at the the LACMA, who had knowledge of the museum's CDP. The conservation department at the LACMA, created in 1967, was the first conservation department opened by a museum on the West Coast of the United States (Los Angeles County Museum of Art, pg. 1). The department consists of 25 staff members who focus on six areas of study: paintings, textiles, paper, objects, research, and laser research. The museum takes pride in using

innovative technologies to aid in the conservation process. For example, the museum is beginning to utilize lasers for conservation purposes and is the first in the United States to do so (Los Angeles County Museum of Art, pg. 3). Additionally, the museum noted that using traditional cleaning methods for stone sculptures and statues removes not only pollutants, but also patina that forms on older stone sculptures. This causes the object to become an undesirable white color. The museum is now investigating the use of lasers as a cleaning method because the lasers can remove pollutants without removing any patina, ensuring that the object retains its original appearance.

The museum is also known for its technological advances in the CDP by which the museum creates condition reports. Originally, the museum used images covered with a clear film on which conservators wrote information as to the location of damage the object had (Posilev, 2011). The reason for this procedure was to reduce the amount of writing needed per condition report. Eventually, the museum investigated the use of digital technologies to acquire, annotate, and share images of objects in the Conservation department. The department experimented with iPad tablets as well as applications that edit the image for annotation such as Artstudio and Photogene. The results of this investigation, according to Yosi Posilev, led to "the transfer of images and files, to and from the device…done through e-mail or wireless internet servers" (Posilev, 2011, pg. 12). The museum uses four iPads, that each have these applications, to aid in the CDP, although they experience issues such as poor image resolution and the inability to use a USB flash drive or an SD card for the transfer of information.

The interview with this museum assisted the team in learning more about the tools the museum uses in its CDP besides iPads and software, and to get further information about the challenges that they had to overcome. The museum is always adding new technologies and trying to find a system that flows with the work dynamic. The museum right now is using Google Drive and Dropbox extensively with the iPads. This is extremely useful for departments and subdivisions of those departments to collaborate, work, and to access different projects or objects with their reports. The Crystal Report writer, which Te Papa also utilizes, generates their reports as PDF files that hold the object's basic information. Once the reports are complete, the staff use Google Drive or Dropbox to store them and they can edit and save the reports using either the Notability

App or the PDF Expert App. With this newly acquired system, the museum has had to deal with a few challenges. This includes learning to use the technology and make sure the whole museum was on the same page.

The museum deals with reports electronically. In the museum, staff handle condition reports and treatment reports separately. When the museum first receives an object, the incoming loans department gives it a quick check. They check the condition of the object to make sure it arrived in the same condition as when it departed. For insurance purposes, they generate a condition report that is very short with lots of pictures for the museum's record. If the museum loans an object to another museum or institution, the outgoing loans department sends a full electronic condition report by email so that the receiving museum can use the electronic condition report or print out a hard copy.

4.2.1.5 Yale University Library

The team interviewed the chief conservator at Yale University Library who is an involved member of the development of ConservationSpace. ConservationSpace is a software application designed to help in the CDP by providing a digital means of creating and editing reports, while also attaching and annotating images, which provides more information to conservators and other staff members at museums. The Andrew W. Mellon Foundation gave a grant to Yale University Library to begin the Design Phase for ConservationSpace in 2010. The University continued with the project, participating with the building phase of Release 1.0 of ConservationSpace and building phase for Release 2.0 of the software.

Before Yale University Library could test this new software, it had to develop and create a database from scratch. The database has a variety of tools that replace the paper logbook that it used to have. The tools allowed the user to follow objects' locations, objects that pass through the Yale museum, and extra reports. The database also made it easier to find image thumbnails associated with a final report and locate the hard paper copy of the final report. A small staff of IT professionals built this temporary system for

the university to use until ConservationSpace becomes the new digital asset management software for use at Yale University Library.

4.2.2 Research on Existing Software

In addition to conducting interviews with outside institutions to look at existing solutions, the team also performed research on existing software. The focus of this research was to find examples of concepts the team believed could improve the CDP at Te Papa. Based on observations of staff members, prior knowledge and experience, and feedback from interviews, the team focused their research on five types of software: digital asset management, picture annotation, file exchange, speech-to-text, and project management. Below is the table of concepts that aided in the development of the recommendations for the museum. This table includes the theme the core issue fell under, the core issue the concept addressed, the concept the team found, and the software that exhibited this concept. The researched software did not address all of the core issues, as only some core issues required technical solutions with the rest requiring more administrative solutions. Following the table are descriptions of the different types of software researched with examples:

Theme	Core Issue	Concept(s)	Software
Mobility	Difficulty working near object	1. Speech recognition that converts verbal notes to text	1. Dragon NaturallySpeaking
Mobility	Difficulties sending and accessing information on condition reports	1. Saving files on a cloud service so that people can access them at a later time from a different device	1. Google Drive, Dropbox, & Evernote

Imaging	Trouble with uploading images to KE EMu	1. Gantt t charts and resource management options to monitor progress and organization of tools and resources	1. Smartsheet, Mavenlink, & Intervals
Imaging	Difficulty with annotation	1. Editing images by digitally drawing on said image and saving image in an electronic file format	1. PDF Notes, Articheck, & ConservationSpace
Imaging	Difficulty moving images between devices	1. Saving files on a cloud service so that people can access them at a later time from a different device	1. Google Drive, Dropbox, & Evernote
Access	Difficulty accessing images	1. Saving files on a cloud service so that people can access them at a later time from a different device	1. Google Drive, Dropbox, & Evernote
Access	Workflow and location of objects	1. Saving files on a cloud service so that people can access them at a later time from a different device 2. Gantt charts and resource management options to monitor progress and organization of tools and resources	1. Google Drive, Dropbox, & Evernote 2. Mavenlink

Process	Parts of current process are too time consuming	1. Create deadlines for projects that is sharable with others 2. Calculation on how long it takes to complete a specific task	1. Smartsheet, Mavenlink, & Intervals 2. Intervals

Table 6: Table of concepts

4.2.2.1 Digital Asset Management Software

The purpose of digital asset management software is for the creation and management of documents and reports in an institution. Currently, the digital asset management software the museum uses is KE EMu. It was important that the team did not simply recommend separate digital asset management software because it would be more expensive and time consuming for the museum to purchase a brand new piece of software. Instead, the purpose was to identify concepts from other software options that the museum could possibly incorporate into KE EMu, improving their use of the software. Upon arrival at Te Papa, the team learned the museum was conducting research into other digital asset management software with the intent of finding additional concepts that would benefit the CDP. The main program the museum researched was ConservationSpace.

ConservationSpace is a piece of software under development at several institutions around the world including the British Museum, Courtauld Institute of Art, Denver Art Museum, Indianapolis Museum of Art, Metropolitan Museum of Art, Statens Museum for Kunst, and Yale University (Richard et al., 2014). The intention of this software is to facilitate the creation and management of reports by conservators. The intended features of the software include flexibility and configurability due to its intention for use in multiple institutions, and the uploading and annotation of high-resolution images. These two features help address the core issues that pertain to imaging and communication. Although the software is still under development, the

developers of the software plan to implement application program interfaces (API) to communicate with KE EMu.

4.2.2.2 Picture Annotation Software

Since annotation of images was a concern to staff members involved in the CDP, the team focused some research on picture annotation software. These programs allow individuals to make annotations directly on a document electronically, and then distribute that document to others when completed. The two applications include Articheck, identified by the museum staff, and PDF Notes, identified by the team.

Articheck is an application designed for Apple products such as iPad tablets and used as a digital condition reporting platform (Articheck, 2014). Currently the development team is working on creating a web version of the application, extending its accessibility to any technology that can access the Internet, such as Android or Windows tablets. The team and staff members of Te Papa were able to watch a demonstration of the application from a representative at Articheck to see how to use the application to create a condition report. One of the focuses of the demonstration was the capturing and annotation of images. Articheck can either upload photos already saved on the device running the application or take a photo using the device's camera if it has one. Once the photo is in Articheck, the application has a variety of annotation tools to indicate different markings, such as discoloration or tearing. Although one of Te Papa's Conservation staff expressed concern about the flexibility Articheck offers in its annotation functionality, the demonstration showed that there are organizations creating products to meet the needs of museum conservators.

The team found PDF Notes, an application currently used by the Smithsonian Art Museum to create and edit loan condition reports (Washington Conservator Guild, 2012). The app has the capability to edit documents in PDF form, including drawing and highlighting, to annotate images and to attach files to condition reports. The application is only available for Apple products, which conflicts with the Microsoft infrastructure of Te Papa. In addition, the Smithsonian Art Museum uses iPad tablets in order to use this application while mobile. The concept deals with converting pictures into PDF format so

staff members can edit and attach files to condition reports. This demonstrates that there are alternative techniques for staff members to annotate files and distribute information more easily.

4.2.2.3 File Exchange Software

The team looked into file exchange software as a means to increase mobility, access to documents, and communication between staff members and departments. The team believed that this was an important software for the museum to implement because a common core issue identified during interviews and observations of staff members was that they had difficulty moving files between devices. Some software options the team researched that could benefit the museum include Google Drive, Dropbox, and Evernote.

Google Drive is capable of storing several types of documents including Microsoft Word documents, Excel spreadsheets, PowerPoint presentations, PDF files, and images (Google, 2016). The main concept, however, of this software is the storage of documents that people can access from multiple devices as long as the user is connected to the Internet. This concept can benefit the museum in terms of mobility and access so that staff members can obtain files even while away from a wired device such as a desktop computer. A similar software option is Dropbox, a software designed so documents saved on one device are accessible from other devices (Dropbox, 2016). A user can download a file while connected to the Internet for later use offline. Another software that embodies this idea is Evernote, which is similar to Dropbox in that it is possible to access files from other devices (Evernote, 2016). Another useful concept from Evernote is the possibility to edit notes and files while there is no available Internet connection (Evernote, 2016).

4.2.2.4 Speech-To-Text Software

The team also looked into speech-to-text software as another possible option to increase mobility. During an interview with a member of the Conservation staff, the interviewee introduced the team to the idea of using speech-to-text programs leading the

team to conduct research on possible options. In the event that the museum deems it too difficult to implement mobile technologies, speech-to-text software acts as an alternative where a staff member can speak into a recorder and have the audio file converted to a text file. The main program the team found in this category was Dragon NaturallySpeaking.

Dragon NaturallySpeaking is a software created by Nuance Communications. Some useful features, according to the company website, include high accuracy of speech conversion while an individual talks at normal speed, personalization of voice recognition, the ability to give feedback on the accuracy of voice recognition, and quick edits of converted text (Nuance Communications, 2016). The main concept from this type of software is the increase in mobility and note taking without the use of mobile devices. Although this specific software requires an Internet connection, a proper microphone on a device like a laptop, and approximately four Gigabytes of memory space, the purpose of researching the software was for the team to find alternative methods of improving mobility when checking the condition of objects.

4.2.2.5 Project Management Software

Finally, the team looked into software options that improve the organization of information and communication between staff members of their specific tasks. The team observed communication barriers between different departments. When asked about the responsibilities of other departments in the museum, many staff members were unable to clearly articulate the other department's responsibilities. The team, therefore, looked into project management software options to decrease the lack of communication and ensure that staff members knew who was responsible for which task. According to Project-Management.com, some recently developed options include Smartsheet, Mavenlink, and Intervals (Project-Management, 2016).

The first software the team researched in this category was Smartsheet. Useful concepts the team found in this program were the similarities to the formations of other spreadsheet documents such as Microsoft Excel (Smartsheet, 2016). The software also allows individuals to share spreadsheets with others and gives deadline alerts for when a task needs completion. Individuals can create Gantt charts, attach files to tasks, and

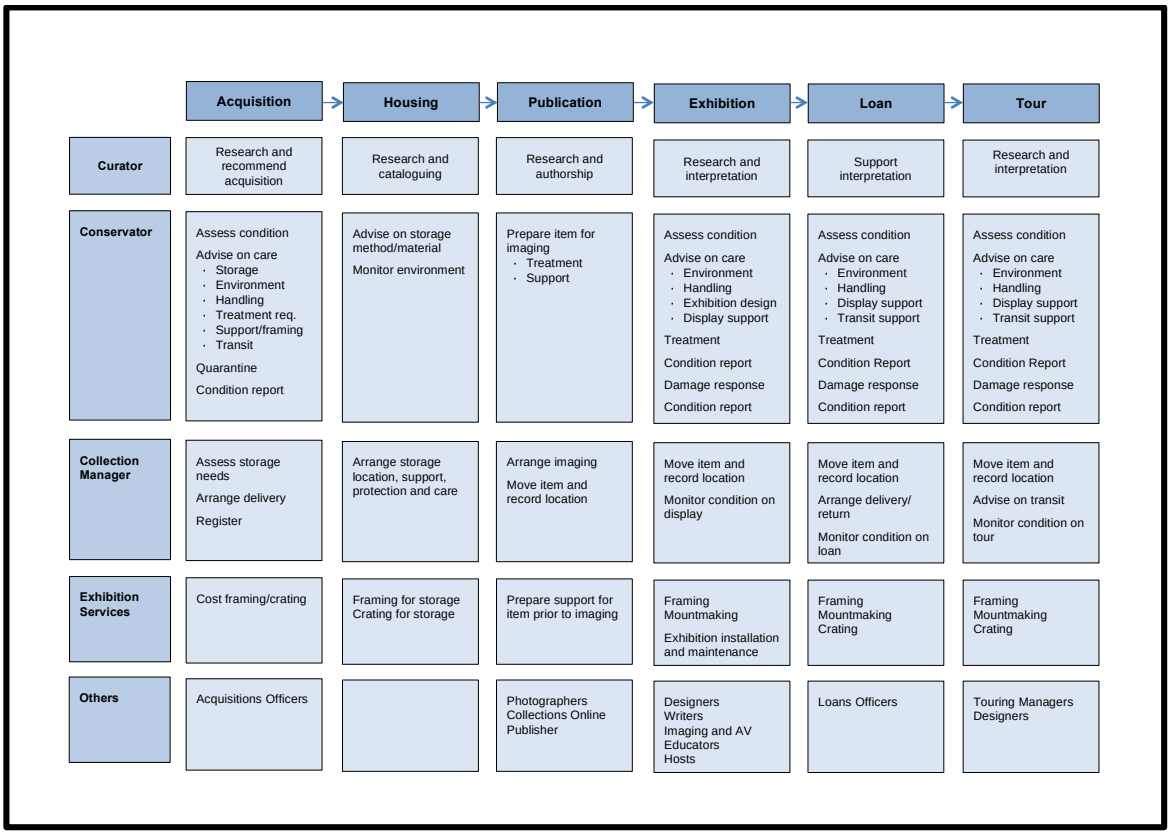
access the software from mobile devices. Other project management software options include Mavenlink, which is also able to create Gantt charts and timelines for increased project management (Mavenlink Incorporated, 2016). Intervals is another alternative software that uses separate tabs for time management, including calendar events with deadlines for tasks, the length of time an individual takes to complete a task, and uploading of documents in the form of a PDF file (Pelago, 2016).

4.3 Develop an Improved Model of Conservation Documentation Process

To provide the museum with a deliverable they could use to improve their CDP, the team created eight BPDs that together created a model of the improved CDP, as discussed in section 3.3. The team first outlined the condition reporting process and the seven life-cycle stages with the aid of the Conservation Manager to receive preliminary feedback. They then improved these outlines by presenting them to various museum staff to receive additional feedback from the staff. During this presentation the team also conducted a survey asking staff to rate the importance of the themes identified from transcribing the interviews. Finally, the team incorporated the feedback into their edits of these outlines and created the improved BPDs, which highlight the steps with identified core issues and connect these steps to appropriate recommendations.

4.3.1 Outlining the Current Condition Documentation Process

After analyzing the interview responses, the team conferred with the Conservation Manager to develop the eight BPDs that together created the model of the museum's current CDP. The Conservation Manager provided the team with a table of the museum's six life-cycle stages for an object as shown in Table 7 below. Although this table only contains six stages, the team added an addition stage, registration, as one of the life-cycles stages of an object.



	Acquisition	Housing	Publication	Exhibition	Loan	Tour
Curator	Research and recommend acquisition	Research and cataloguing	Research and authorship	Research and interpretation	Support interpretation	Research and interpretation
Conservator	Assess condition Advise on care · Storage · Environment · Handling · Treatment req. · Support/framing · Transit Quarantine Condition report	Advise on storage method/material Monitor environment	Prepare item for imaging · Treatment · Support	Assess condition Advise on care · Environment · Handling · Exhibition design · Display support Treatment Condition report Damage response Condition report	Assess condition Advise on care · Environment · Handling · Display support · Transit support Treatment Condition Report Damage response Condition report	Assess condition Advise on care · Environment · Handling · Display support · Transit support Treatment Condition Report Damage response Condition report
Collection Manager	Assess storage needs Arrange delivery Register	Arrange storage location, support, protection and care	Arrange imaging Move item and record location	Move item and record location Monitor condition on display	Move item and record location Arrange delivery/ return Monitor condition on loan	Move item and record location Advise on transit Monitor condition on tour
Exhibition Services	Cost framing/crating	Framing for storage Crating for storage	Prepare support for item prior to imaging	Framing Mountmaking Exhibition installation and maintenance	Framing Mountmaking Crating	Framing Mountmaking Crating
Others	Acquisitions Officers		Photographers Collections Online Publisher	Designers Writers Imaging and AV Educators Hosts	Loans Officers	Touring Managers Designers

Table 7: Table of six life-cycle stages

The chart also contains the responsibilities of each staff member in this process. The flow chart, however, does not place these tasks in the correct order in which staff complete them. After discussing with the Conservation Manager, the team listed each step required to complete each process in order, and stated whose responsibility it was to complete the step. As an example, below is the BPD the team created for *Process 1: Acquisition*:

People involved: Curator, Conservator, Collection Manager, Exhibition Services, Acquisition Officers, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, mobile device, camera, paper, writing instrument

Process Outline:

1. Research and recommend acquisition: Curator
2. View and assess condition: Conservator
    a. Advise on care
        i. Storage
        ii. Environment
        iii. Handling
        iv. Treatment
        v. Support/framing
        vi. Transit
3. Condition Report: Conservator
4. Assess storage needs: Collection Manager
5. Arrange delivery: Collection Manager
6. Quarantine: Conservator
7. Cost framing/crating: Exhibition Services
8. Negotiate contract to purchase: Acquisition Officer

Figure 10: Process 1: Acquisition business process document

At the time of the update presentation, explained in further detail in section 4.3.2, the team had not yet finalized the BPD for the condition reporting process and thus did not present this particular BPD to staff members at the update presentation. Instead, the team consulted the Conservation Manager for feedback. The team also received feedback on this process from other key contacts at the museum, including the Head of Research, a Textiles Conservator, and an Ethnographic Objects and Sculpture Conservator. Below, the team lists out the condition reporting process:

1. Identify changes or damages
    a. Closely examine object, sometimes using special equipment like microscopes or scalpels
    b. Compare current condition to old condition reports
        i. Access KE EMu and review history of object
    c. Document any changes or relevant data, usually on paper
2. Take measurements
    a. Measure and note important numbers, such as height/width of object, as well as damages size, (e.g. crack is 2 cm long)
3. Take pictures and annotate pictures if necessary
    a. Take picture with camera or arrange for photography team to take picture
        i. If done with photography team, request access to photo
    b. Print photo
    c. Overlay with plastic cover
        i. Annotate with pen, usually by color coded system
4. Put everything into KE EMu
    a. Fill out required fields in KE EMu (date, object name, object category, reason for condition report, etc.)
    b. Type up notes from previous assessment in KE EMu fields
    c. Scan images to computer
    d. Upload images to KE EMu
        i. May require sending images to Digital Collection and Access staff to bulk upload images if there are more than five

4.3.2 Update Presentation with Te Papa Staff

The discussions during the update presentation proved extremely beneficial to the team and the staff in attendance, as this was the first time the majority of the staff members from the different departments were able sit down with one another and talk. Te Papa's Chief Technical Officer, Craig Le Quesne, responded positively to the team's concept driven approach agreeing that it was good to "own the process, then design the technology to fit it." This presentation was also a positive step towards accomplishing a portion of the team's project goal by facilitating the communication between departments.

The discussion also helped the team refine our BPDs to properly reflect the current CDP. At the time of the presentation the team had not yet finalized the BPDs and had only outlined the life-cycle stages as a series of steps required to complete the overall CDP. The team presented the staff members their initial outline with certain steps highlighted red to denote which steps in the outline had core issues. The team highlighted the steps to provide an example to the staff members of how the team planned to move forward with improving the CDP. Based on the positive feedback from the staff members, the team decided to proceed forward with that intended plan, described in more detail in section 4.3.3. Below is an example of the *Process 1: Acquisition* outline with the steps the team identified as having core issues highlighted red as shown in the update presentation:

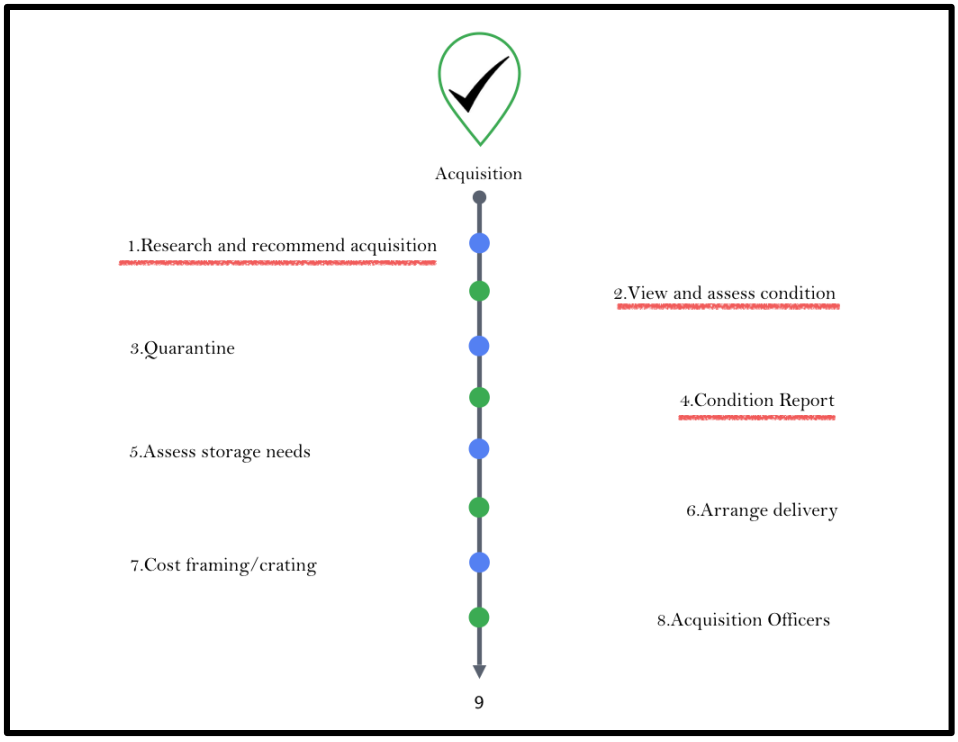


Figure 11: Process 1: Acquisition outline from update presentation

4.3.2.1 Survey of Importance

As stated in the previous section, the intention of this survey was to provide Te Papa with data on the importance of each theme according to the staff members involved in the CDP. In total seven Conservation staff, four IT staff, and two Digital Collections and Access staff completed the survey. Figure 12 displays the average importance rating of the five themes across all departments.

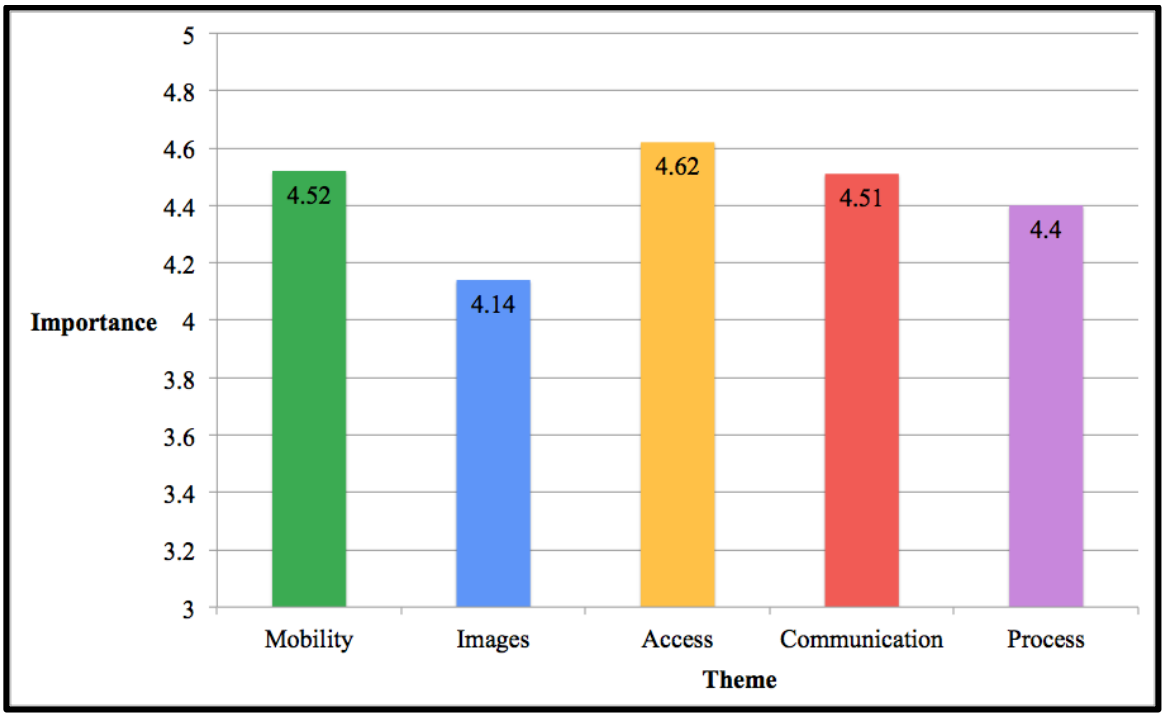


Figure 12: Average importance of each theme across all departments

According to the data gathered from the survey, the three most important themes to the staff were access with a rating of 4.6.2, mobility with a rating 4.52, and communication with a rating of 4.51. Access and mobility were important to the staff because the staff need to access their tools wherever they are working in order to fulfill their job requirements. While recording observations, the team noticed a lack of understanding between departments, especially when asked about the responsibilities of other departments. The survey supports this observation, showing that staff members are aware of this problem.

Although access, mobility, and communication were the most important themes to staff members based on the survey, the data from the survey also indicated that all of the themes identified were important to the CDP. This is illustrated in the figure above, as the importance ratings vary only slightly between each theme. According to the survey, the average importance of each theme among all respondents remained above four on the one to five scale, verifying that each theme was an important theme to the staff.

4.3.3 Connecting the Business Process Documents and Solutions to Create the Improved Model

Once the team created the existing model and applied the feedback given during the update presentation, the team once again looked through each of the eight BPDs further identifying and highlighting the steps with core issues. The team conferred with key contacts from the museum on ensuring that the highlighted steps contained core issues pertaining to the CDP. Afterwards, the team connected the highlighted steps to the appropriate recommendations. Some of these recommendations were technological in nature while others were more administrative. Below is an example of the BPD for *Process 1: Acquisition*, showing the highlighted steps the team identified as containing core issues as well as recommendations referenced with their respective labels. Chapter five of this report explains the recommendations these labels refer to as well as the other BPDs.

People involved: Curator, Conservator, Collection Manager, Exhibition Services, Acquisition Officers, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, mobile device, camera, paper, writing instrument

Process Outline:

1. Research and recommend acquisition: Curator **M2, A1, A3, A5, I1, I2**
2. View and assess condition: Conservator **M2, M5, M6, M7, I1, I2, I3, I4, A1, A2, A5**
    a. Advise on care
        i. Storage
        ii. Environment
        iii. Handling
        iv. Treatment
        v. Support/framing
        vi. Transit
3. Condition Report: Conservator **Refer to the Condition Reporting BPD**
4. Assess storage needs: Collection Manager
5. Arrange delivery: Collection Manager
6. Quarantine: Conservator
7. Cost framing/crating: Exhibition Services
8. Negotiate contract to purchase: Acquisition Officer

Figure 13: Process 1: Acquisition business process document with highlighted steps

CHAPTER 5. Recommendations and Conclusion

From the data gathered during the case study, semi-structured interviews, observations, outside research, and survey, the team created a list of recommendations that addressed the core issues identified within the current conservation documentation process (CDP). This section presents each set of recommendations the team provided to the museum, grouped by the themes identified in section 4.1. The team matched these recommendations to the steps outlined in the business process documents (BPD) that had these identified core issues, showing the museum where the recommendations were applicable throughout the entire CDP. This section also presents the BPDs with the highlighted steps with core issues and matching recommendations. Finally, the team provides their conclusion to the project.

5.1 Recommendations

The team categorized the recommended solutions with the same themes used to categorize the identified issues. By categorizing the recommendations, the museum can determine which solutions to consider when addressing any of the core issues. Each theme has its own subsection in this section, which lists the core issues under that theme in the same order presented in chapter four and then presents a recommendation to address each core issue. It is worth noting that some recommendations may include multiple suggestions as to how to address their core issue. Also, some recommendations have similar suggestions but address different core issues.

5.1.1 Mobility

Core issues:

M1. Insufficient amount of mobile devices
M2. No Wi-Fi in conservation lab and limited Wi-Fi throughout the rest of the institution
M3. Difficulty working by an object

M4. Complications sending and obtaining information on condition reports

M5. Not able to bring personal devices

M6. Trouble utilizing HighTail

M7. Problems with creating, editing, and handling condition reports off-site

M8. Not having curators in the same building as Conservation staff

Corresponding recommendations:

M1. In order to address the core issue of staff members wanting mobile devices, the team recommends either equipping staff members with mobile technology or using virtual clients with mobile devices. Mobile devices are useful for recording information while away from wired PCs and computers, however, it is important that the museum takes into consideration the cost of some devices in order to determine if it is feasible to implement. Similar to remote access, it is also important to retain the security of data when using mobile devices and thus the team recommends that staff members become fully informed on security protocols.

M2. One of the most frequent areas of concern include Wi-Fi access at both the Cable Street and Tory Street facilities of Te Papa, specifically in the conservation laboratory, as well as other off-site locations. To improve this core issue while on-site at Te Papa, the team suggests upgrading the Wi-Fi capabilities for staff members in the conservation lab for better access to the Internet. When a staff member needs to access Internet off-site and the institution or location that he or she is visiting does not provide Wi-Fi, the team recommends using data cards so staff members can still access the Internet if necessary. The team also recommends utilizing file exchange software that will allow staff members to download files so they can access them when they are not connected to the Internet.

M3. In terms of working next to an object to record notes, the team recommends either using mobile devices or utilizing speech-to-text software alongside with upgrading Wi-Fi capabilities at the museum. Similar to mobile technology, speech-to-text software is

useful for recording verbal notes while working next to an object so it is easier and less time consuming to take notes. The team recommends increased communication between departments to determine the most feasible option.

M4. For addressing the core issue with sending and retrieving information on condition reports, the team recommends improved educational trainings on the utilization of KE EMu. This is to ensure that staff members understand how to properly obtain the information needed from a condition report in KE EMu and how to send condition reports to other staff members.

M5. While staff currently cannot use personal devices for work related tasks, the team believes that using personal devices which access the museum's virtual client is a potential solution to some of the core issues addressed for mobility. The team still recommends that the museum look into the feasibility of using personal devices for work related tasks. This will help in terms of using mobile devices with the virtual client but it is still important, once again, to keep in mind the security of the data and to ensure that it is not improperly distributed. Communication between departments to determine the feasibility of using mobile devices is, therefore, one of the recommendations the team makes to the museum.

M6. In terms of addressing the core issue with accessing HighTail, a software used for file sharing purposes, the team recommends the museum either increase education on how to use HighTail or determine the feasibility of implementing one of the file exchange software products mentioned in section 4.2.2.3 of this report. Increasing education of HighTail may save time and money for the museum to further utilize a software already installed, however, pursuing other software options could provide more desirable alternatives such as user-friendliness or efficiency.

M7. The team once again recommends the use of mobile devices with the museum's virtual client to address the core issue of doing condition reports off-site. This bypasses

having to use paper copies that later need placement into KE EMu upon arrival back on-site or that may get lost before returning to the museum.

M8. Finally, for addressing the core issue of not having the curators in the same building as conservators, the team recommends increased communication between curators and conservators by scheduling regular meeting times. This minimizes the need for a curator to travel between buildings on short notice. This will help both departments understand the potential and limitations of the departments so future tasks and goals are feasible.

5.1.2 Imaging

Core issues:

I1. Trouble with uploading images to KE EMu
I2. Associating relevant data with images
I3. Difficulty with annotation
I4. Difficulty moving images between devices
I5. Issues with scheduling with photography team

Corresponding recommendations:

I1. Frequently, the conservation team has mentioned that they are not allowed to upload more than five images at a time. While this may be a resource issue, the team suggests that the Conservation and Digital Collections and Access staff have a discussion to assess whether or not the museum can teach conservators how to properly upload large amounts of images.

I2. For associating relevant data with images in KE EMu, the team recommends providing more organized education for use of KE EMu to the Conservation staff. The team also suggests the museum look into the possibility of implementing an online forum for the Conservation staff to use regarding questions about KE EMu. By using an online

forum, conservators can help answer each other's questions that arise when they are using KE EMu, providing more information exchange about how to use the software and instilling more consistent use of the software.

I3. For annotation, the team recommends providing annotation software on the devices used by the conservation staff. While the museum currently has a licensed version of Photoshop on one computer in the conservation lab, there are plenty of free or cheaper alternatives that the museum can use to annotate picture files, on either PCs or mobile devices. The team also recommends that the Conservation staff have a meeting to determine consistent practices when annotating pictures in a formally written document, ideally increasing understanding and efficiency when another museum staff member accesses an annotated picture.

I4. To address the difficulty with moving images between devices, the team suggests the conservation staff utilize file exchange software to share images and other files between devices. This service will bypass the need to send images through email, which can be problematic as Te Papa's email service has a size limit for sending and receiving emails.

I5. Concerning the core issue the conservation staff have with scheduling sessions with the photography staff for high resolution photographs, there is not much the museum can do other than hiring more photographers, which the team realizes may be difficult with budgeting constraints. The team, however, suggests the museum consider the possibility of providing internships for photographers who can take pictures of objects for staff members to help reduce their workload.

5.1.3 Access

Core Issues:

A1. Data management with KE EMu
A2. Slow running technology

A3. Security of files

A4. Trouble accessing certain programs

A5. Limited access off-site

A6. Problems accessing images

A7. Access to specific equipment in multiple locations

A8. Difficulty accessing cameras

A9. Workflow and location of objects

Corresponding recommendations:

A1. For addressing the core issue with data management on KE EMu, the team recommends additional workshops about how to properly label and search for objects on KE EMu. The more consistent the process is for inputting information into KE EMu, the more efficiently staff members can access information about an object.

A2. In terms of technology being slow, the team recommends determining if it is feasible to upgrade the hardware of the museum. Overall, the goal is to increase the speed of the system for staff members to complete their jobs more efficiently, as well as provide more memory for storage.

A3. In order to address the security of the files for access, the team recommends increased education on the security system at Te Papa so people understand the infrastructure and reason for keeping the files secure. The team also recommends that staff members from different departments communicate with each other on the programs that are absolutely necessary to complete tasks that other staff members should have permission to access. This will reduce the steps needed in order to complete tasks so departments don't have to unnecessarily call one another so one staff member can have access to a file. This all comes with increased overall communication between departments so there is more understanding about the tasks that need completion.

A4. When referring to the core issue of accessing certain programs, the team recommends that the museum upgrade their virtual client system so that devices accessing the virtual client can handle running the necessary programs. The team also recommends that the museum take into consideration either acquiring additional licenses for the various programs on desktops or searching for cheaper options for programs that accomplish the same tasks.

A5. For the core issue of remote access off-site, other than recommending the previously mentioned data cards, the team recommends using virtual clients with approved devices. This will need approval from departments such as IT and Digital Collections and Access in order to maintain the security of the information the staff member needs to access. In addition, the team recommends the use of file exchange software so staff members can download documents and information necessary for their job prior to going offline.

A6. In terms of addressing the core issue of accessing images, the team recommends the utilization of project management software. This software would help increase communication between departments because the Digital Collections and Access staff would be able to view the objects worked on by the conservation staff and thus be able to grant them access to the appropriate images that coincide with the object.

A7. To address the core issue of accessing equipment, the team recommends increasing the availability of equipment in different locations or buying more equipment for staff to use. The team understands this may be difficult with budgeting constraints, but recommends looking into the feasibility of providing more equipment at different locations, as it would provide benefits that could outweigh the financial costs.

A8. To address the difficulties staff members have accessing cameras, the team recommends determining the feasibility of purchasing additional cameras to reduce queues for capturing photographs. The team also recommends the possibility of

providing internships for photographers who can take pictures of objects for staff members to help reduce workload, as mentioned previously.

A9. Finally, with the core issue of workflow and determining the location of objects, the team recommends that the museum incorporate project management software so that staff members are aware of tasks they need to complete. In addition, the team recommends the museum have the different BPDs available for stepwise tasks so staff members understand what they are responsible for. This comes from more communication between departments so all staff members are familiar with the process available and what needs completion from the different staff members.

5.1.4 Communication

Core Issues:

C1. Familiarity to other staff
C2. KE EMu functions
C3. Complexities with training
C4. Variation of working preferences
C5. Communicating ideas in old reports
C6. Familiarity to technology

Corresponding recommendations:

C1. To address the core issue of familiarity to other staff, the team suggests the implementation of regularly scheduled meetings that bring together members of the Conservation, IT, and Digital Collections and Access departments. The goal of these meetings will be to dismantle the communication barriers between departments, offer a scheduled opportunity to discuss issues, and increase efficiency across departments.

C2. To address concerns with KE EMu functionality the team recommends that the Digital Collections and Access department work with members of the Conservation department to develop and implement in depth KE EMu trainings upon staff induction as well as annual refresher trainings. Since the answers to the majority of conservators' questions surrounding KE EMu are accessible via the user-manuals, the team deduced from speaking with members of both departments that the real root of the core issue surrounding KE EMu functionality is communication. The trainings would be most effective if they are co-designed by representatives from both the Digital Collections and Access department and the Conservation department to tailor the training to suit the needs of Conservation as well as provide an additional opportunity to discuss their partnership and share ideas.

C3. To address complexities with trainings, the team recommends the museum tailor their educational sessions to the needs of the audience by increasing communication with department heads. This will permit the staff to use their time more effectively and those who attend the training will be more efficient in their work.

C4. Regarding the core issue surrounding working preferences, the team suggests that at the yearly collaboration meetings mentioned previously, the museum include a discussion centered on working preferences and processes. This will allow for more focused and productive communication between staff members and generate ideas that they can then implement across the department.

C5. There are a few options the team recommends for combating the core issue of communicating issues in old reports. One option is for the institution to consider offering internships within the conservation department for the purpose of inputting the old reports into KE EMu. This option has some additional benefits beyond being a solution to communicating information from old reports, as it offers the museum a chance to educate more external individuals about the work they do and instill awareness and appreciation for the CDP. A second option is to require conservators to input a certain amount of old reports into the system per year. Implementing this approach by

distributing the workload and tackling it piecemeal would help alleviate the core issue while, at the same time, prevent the staff from becoming overwhelmed since they can complete these report entries during intersessions between heavy work periods.

C6. To increase the staff's familiarity with the technology available at the museum, the team recommends the IT staff provide familiarity training upon staff induction as well as annual workshops that overview the system and available software. The intention of this training is to provide a forum for staff members to ask questions and receive training face to face. To design these trainings the team suggests the IT staff meet with a representative from Conservation in order to tailor the training to their needs. This will aid in helping the training developers strategize techniques to convey the information in a manner that people of varying technological fluency and learning comprehension styles can all understand.

5.1.5 Process

Core Issues:

P1. Parts of current process are too time consuming
P2. Preferring analog over digital technology
P3. Preferring digital over analog technology
P4. Taking convoluted workarounds to certain processes
P5. Difficulty accessing and understand information from retired or inaccessible staff members

Corresponding recommendations:

P1. To address parts of the current process being too time consuming, the team recommends establishing meetings to ensure consistency, as well as possibly utilizing project management software to organize the tasks staff members need to complete.

P2. Regarding Conservation staff preferring to use analog over digital technology, it is important the museum considers the user friendliness of any technology they implements. Many of the concerns the Conservation staff expressed about using digital technology is that it would affect their preference to write notes by hand. Given this concern, the team recommends the museum look into the option of digital tablets with styluses so the conservators can still write handwritten notes while avoiding the need to transfer information from paper to the digital system.

P3. To accommodate the staff members who prefer using digital over analog technology, the team recommends the museum provides digital mobile technology or determine the feasibility of a "bring your own device" system, where staff members can bring their own technology and utilize KE EMu and other necessary software through the virtual client. The staff members can then use the technology they are most comfortable and efficient with while still accessing files for work related tasks. Once again, it is important the museum also take into account the security of the data when determining the feasibility of this recommendation.

P4. To address staff taking convoluted workarounds to steps in the process, the team recommends providing more education opportunities for staff to learn how to utilize the tools that the museum provides for them. The team also recommends looking into the possibility of implementing a forum so conservators can help answer each other's questions that arise when they are using KE EMu, providing more information exchange about how to use the software and instilling more consistent use of the software.

P5. Regarding difficulties with accessing and understanding information from retired or inaccessible staff members, the team recommends that the staff conduct a meeting where they establish a consistent way of creating and storing information. This is so staff can easily access and understand information when the creator of the information retires or when the information becomes inaccessible. This is also to prevent any further instances of miscommunication with reports so other staff members can understand reports written by their colleagues.

5.2 Business Process Documents

This section contains the eight BPDs that outline the condition reporting process as well as the seven life-cycle stages that objects may undergo during their time at the museum. To review, these seven life-cycle stages are acquisition, registration, housing, exhibition, loan, publication, and tour. The first three processes, acquiring, registering, and housing an object, completed in this order, are standard for every object in the museum. The team labeled these processes as Process 1, 2, and 3. After an object has successfully been acquired, registered, and housed, the object may undergo one or more of the following processes: exhibition, loan, publication, or tour, depending on the institution's intention for the object. Since the processes are not performed in any particular order the team presents them in alphabetical order as Process 4A, 4B, 4C, and 4D.

As mentioned previously these documents outline the people, tools, and actions necessary to execute each process. In the BPDs presented below, the team highlighted steps that contained any of the previously identified core issues in red. Next to each of the highlighted steps is a list of applicable recommendations. The labels for the recommendations correspond with those introduced in section 5.1. The team reviewed the recommendations for these steps with their main contacts at the museum, including the Head of Research, the Conservation Manager, and the Head of Collections Services to make sure that the identified steps and their associated recommendations were appropriate and correlated correctly.

5.2.1 Condition Reporting Process

The following is a business process document for the *Condition Reporting Process.* This document lists the people, tools, and actions necessary to execute this process.

People involved: Conservator, Photographer, IT, and Digital Collections and Access

Tools required: Examination equipment (microscope, scalpel, etc.), paper, writing instrument, laptop or desktop, Internet access, KE EMu, measuring equipment (ruler, tape measurer, etc.), cameras, printer, plastic overlay, scanner, annotation software

Process Outline:

1. Identify changes or damages: Conservator
    a. Closely examine object, sometimes using special equipment like microscopes or scalpels
    b. Compare current condition to old condition reports **M1, M2, M3, M4, M7, A1, A5, C2, C4, C5, C6, P5**
        i. Access KE EMu and review history of object
    c. Document any changes or relevant data, usually on paper **M1, M2, M3, M4, M7, I1, A1, A5, A6, C2, C3, C4, C6**
2. Take measurements: Conservator
    a. Measure and note important numbers, such as height/width of object, as well as damages size, (e.g. crack is 2 cm long)
3. Take pictures and annotate pictures if necessary: Conservator and/or Photographer **M3, I2, I3, I5, A3, A6, A8, C3, C4, C6, P2, P3**
    a. Take picture with camera or arrange for photography team to take picture **I5, A8**
        i. If done with photography team, request access to photo **A6, A4**
    b. Print photo **A6, C6**
    c. Overlay with plastic cover **M1, I3**

        i. Annotate with pen, usually by color coded system

4. Put everything into KE EMu: Conservator **M1, M2, I1, I2, A1, A3, C2, C6, P1**
    a. Fill out required fields in KE EMu (date, object name, object category, reason for condition report, etc.) **A1, C4**
    b. Type up notes from previous assessment in KE EMu fields **M1, M2, M3, M7, C2, C4**
    c. Scan images to computer **M7, I1, I4**
    d. Upload images to KE EMu **I1, I2, A5, C2**
        i. May require sending images to Digital Collection and Access staff to bulk upload images if there are more than five **I4, P1**

5.2.2 Process 1: Acquisition

The following is a business process document for *Process 1: Acquisition*. This document provides the general overview of the acquisition process all objects undergo, specifically focusing on the responsibilities and roles of the conservation department. This document lists the people, tools, and actions necessary to execute this process.

People involved: Curator, Conservator, Collection Manager, Exhibition Services, Acquisition Officers, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, mobile device, camera, paper, writing instrument

Process Outline:

1. Research and recommend acquisition: Curator **M2, A1, A3, A5, I1, I2**
2. View and assess condition: Conservator **M2, M5, M6, M7, I1, I2, I3, I4, A1, A2, A5**
    a. Advise on care
        i. Storage
        ii. Environment
        iii. Handling
        iv. Treatment
        v. Support/framing
        vi. Transit
3. Condition Report: Conservator **Refer to the Condition Reporting BPD**
4. Assess storage needs: Collection Manager
5. Arrange delivery: Collection Manager
6. Quarantine: Conservator
7. Cost framing/crating: Exhibition Services
8. Negotiate contract to purchase: Acquisition Officer

5.2.3 Process 2: Registration

The following is a business process document for *Process 2: Registration*. This document provides the general overview of the registration process all objects undergo. This document lists the people, tools, and actions necessary to execute this process.

People involved: Photographer, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, camera

Process Outline:

1. Assign unique number to object: Collection Manager
2. Add additional catalogue information: Curator
3. Official Te Papa image taken (High Res): Photographer **I1, I2, I5, A1, A8**

5.2.4 Process 3: Housing

The following is a business process document for *Process 3: Housing*. This document provides the general overview of the housing process that all objects undergo, specifically focusing on the responsibilities and roles of the conservation department. This document lists the people, tools, and actions necessary to execute this process.

People involved: Curator, Conservator, Collection Manager, Exhibition Services, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, paper, writing instrument, monitoring equipment (humidity sensor, temperature sensor, etc.)

Process Outline:

1. Registration and cataloguing: Curator **I1, I2, I5, A1**
2. Advise on storage method/material: Conservator **M3, M4, A1, A6, A9**
3. Arrange storage: Collection Manager
    a. Location
    b. Support
    c. Protection
    d. Care
4. Storage support/protection: Exhibition Services
5. Monitor environment/condition: Conservator **M1, M2, M3, M4, I1, I2, I3, I4, A1, A6, A7, A9, C6**

5.2.5 Process 4A: Exhibition

The following is a business process document for *Process 4A: Exhibition*. This document provides the general overview of the exhibition process that some objects undergo, specifically focusing on the responsibilities and roles of the conservation department. This document lists the people, tools, and actions necessary to execute this process.

People involved: Curator, Conservator, Designers, Writers, Collection Manager, Exhibition Services, Educator, Host, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, examination equipment (microscope, scalpel, etc.), communication tool (phone, email, etc.), treatment equipment (scalpel, chemicals, etc.), camera, paper, writing instrument

Process Outline:

1. Research, object selection, and interpretation: Curator **M8, A1, A4, A6, C5, P5**
2. Assess condition: Conservator
3. Advise on care: Conservator **M4, M8, A1, A6, A9, C5, P5**
    a. Environment
    b. Handling
    c. Exhibition design
    d. Display support
4. Design exhibition: Designers
5. Compose written descriptions for exhibition: Writers **C1, C5**
6. Move item to exhibition and record location: Collection Manager **M1, M5, A1**
7. Treatment: Conservator
8. Framing/mount making: Exhibition Services
9. Condition report: Conservator **Refer to the Condition Reporting BPD**
10. Imaging and AV: Conservator **I1, I2, I3, I4, A8**
11. Exhibition installation and maintenance: Exhibition Services

12. Education for exhibition: Educators
13. Exhibition guidance and monitoring: Hosts
14. Monitor condition of objects on display: Collection Manager, Conservator
15. Damage response: Conservator
16. Condition report: Conservator **Refer to the Condition Reporting BPD**
17. De-installation: Collection Manager, Conservator
18. Move item to storage and record location: Collection Manager **M1, M5, A1**

5.2.6 Process 4B: Loan

The following is a business process document for *Process 4B: Loan*. This document provides the general overview of the loan process that some objects undergo, specifically focusing on the responsibilities and roles of the conservation department. This document lists the people, tools, and actions necessary to execute this process.

People involved: Loan Officer, Conservator, Collection Manager, Exhibition Services, Curator, Courier, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, communication tool (phone, email, etc.), KE EMu, examination equipment (microscope, scalpel, etc.), paper, writing instrument

Process Outline:

1. Negotiate loan agreement: Loan Officer
2. Assess condition: Conservator **M2, M5, M6, M7, I1, I2, I3, I4, A1, A2, A5**
3. Advise on care: Conservator **M4, M8, A1, A6, A9, C5, P5**
    a. Environment
    b. Handling
    c. Display support
    d. Transit support
4. Move item and record location: Collection Manager **M1, M5, A1**
5. Treatment: Conservator
6. Storage support/protection: Exhibition Services
7. Support interpretation: Curator
8. Condition report: Conservator **Refer to the Condition Reporting BPD**
9. Arrange delivery: Collection Manager
10. Transit: Courier

11. Monitor condition on loan: Collection Manager **M2, M4, M6, M7, I1, I2, I3, I4, A1, A3, A5, A6, P2, P3**
12. Damage response: Conservator
13. Condition report: Conservator **Refer to the Condition Reporting BPD**
14. Arrange return: Collection Manager
15. Condition report: Conservator **Refer to the Condition Reporting BPD**

5.2.7 Process 4C: Publication

The following is a business process document for *Process 4C: Publication*. This document provides the general overview of the publication process that some objects undergo, specifically focusing on the responsibilities and roles of the conservation department. This document lists the people, tools, and actions necessary to execute this process.

People involved: Curator, Collection Manager, Conservator, Exhibition Services, Photographer, Publisher, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, treatment equipment (scalpel, chemicals, etc.), camera

Process Outline:

1. Research and authorship: Curator **A1, A3, A6, C5, P5**
2. Arrange Imaging: Collection Manager
3. Move item and record information: Collection Manager **M1, M5, A1**
4. Prepare item for imaging: Conservator **M1, M3, M5, I5, A1**
    a. Treatment
    b. Support
5. Prepare support for item prior to imaging: Exhibition Services
6. Imaging: Photographer **A8**
7. Load to Collections Online: Photographer **A1, A3**
8. Edit and publish: Publisher

5.2.8 Process 4D: Tour

The following is a business process document for *Process 4D: Tour*. This document provides the general overview of the tour process that some objects undergo, specifically focusing on the responsibilities and roles of the conservation department. This document lists the people, tools, and actions necessary to execute this process.

People involved: Touring Manager, Curator, Conservator, Designer, Exhibition Services, Collection Manager, IT, and Digital Collections and Access

Tools required: Laptop or desktop, Internet access, KE EMu, examination equipment (microscope, scalpel, etc.), communication tool (phone, email, etc.)

Process Outline:

1. Plan and manage tour: Touring Manager
2. Research, object selection, and interpretation: Curator **M8, A1, A4, A6, C5, P5**
3. Assess condition: Conservator **M2, M5, M6, M7, I1, I2, I3, I4, A1, A2, A5**
4. Advise on care: Conservator **M4, M8, A1, A6, A9, C5, P5**
    a. Environment
    b. Handling
    c. Display support
    d. Transit support
5. Negotiate venue contracts: Touring Manager
6. Design exhibition: Designer
7. Crating: Exhibition Services
8. Move item and record location: Collection Manager **M2, M5, A1**

5.3 Conclusion

In retrospect, the number of interviews the team was able to schedule with relevant staff members from the IT department and Digital Collections and Access department was fairly small due to several constraints. One such constraint was that the staff members in both departments were mostly busy when the team wished to schedule interviews or meetings discussing the specifics of the project. As a result, it was difficult to find staff members who had a sufficient knowledge on the project to interview and obtain relevant data. In addition, the Digital Collections and Access department had very few staff members the team could interview. However, the team was still able to gather sufficient feedback from the limited number of staff members they were able to interview.

As technology continues to advance and as Te Papa Tongarewa Museum accumulates more collection objects, it is important for the museum to keep track of their items' conditions effectively and efficiently. The goal of this project was to assist Te Papa in improving their CDP to aid in the management of their condition reports. The team was able to identify several core issues staff members had with the current CDP and research outside solutions to help develop a list of recommendations for improving it. The team hopes that these recommendations will improve the conservation documentation process by enhancing the quality of communication between departments, lessening the inconsistency in executing the processes, and advancing the quality and use of technology, enabling Te Papa to effectively conserve their objects and maintain their condition for many years to come.

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Appendix A. Conservation Staff Interview Planning Sheet

Conservation Staff Interview Plan Sheet

Your participation in this interview is voluntary and your responses will be kept confidential if desired. This interview is designed to gather information to aid the Te Papa Museum in improving their existing conservation reporting system. With your feedback, you will help us determine ways to improve the conservation reporting system. If there are any questions you do not wish to answer, please feel free to skip that question.

1. Do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available?
2. What is your name?
3. What department do you work for?
4. What is your job title and description?
5. What is your role in the conservation process? Please be as detailed as possible.
6. Do you work with condition reports?
7. Where do you work on condition reports? (next to the object, away from the object, off-site, etc.)
8. Can you describe the process of creating and editing the condition report?
9. How much time does it take to create a report for an object that is: on exhibition, on tour, on loan, under treatment, newly acquired, or departing?
10. Can you describe your experience working with photos or other media in relation to condition reporting (how do you create, annotate, upload, and attach photos or other media)?
11. What are the advantages and disadvantages of the current process of creating these reports?
12. How often do you work with the information technology (IT) staff and EMu staff? Can you describe your working relationship with them?
13. Can you describe when and how you use EMu?

14. How much training have you completed on using the KE EMu Software?
15. What are the advantages/disadvantages of using KE EMu?
16. Do you have any additional comments on the digital infrastructure, condition reporting system, or the KE EMu software?
17. During a typical work week, how many hours do you spend using digital technology in your routine at the museum?
18. What aspects of your work routine (if any) do you believe have been *improved* by digital technology?
19. What aspects of your routine (if any) do you believe have been *hindered* by digital technology?
20. When creating condition reports, do you prefer to first use paper and pencil and why?
21. Are you comfortable using mobile technology (i.e. laptop, electronic tablet, smartphone) for condition reporting? If no, why not?
22. Do you have any reservations or comments about using mobile technology to create, edit, or handle condition reports?
23. What do you like about the current digital system used in the museum? What are some things you wish you could change about the digital system?
24. Describe your ideal condition reporting system.

Appendix B. IT and Digital Collections and Access Staff Interview Planning Sheet

IT and EMu Staff Interview Plan Sheet

Your participation in this interview is voluntary and your responses will be kept confidential if desired. This interview is designed to gather information to aid the Te Papa Museum in improving their existing conservation reporting system. With your feedback, you will help us determine ways to improve the conservation reporting system. If there are any questions you do not wish to answer, please feel free to skip that question.

1. Do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available?
2. What is your name?
3. What is your job title and description?
4. Can you describe the digital infrastructure of the museum (Wi-Fi capabilities, bandwidth, available software, hard wired Internet capabilities, etc.)?
5. What are the technological constraints of the digital infrastructure?
6. How often do you work with the conservation staff? Can you describe your working relationship with them?
7. What is your understanding of the conservation team and the role they perform at the museum?
8. (For IT Staff only) Are you familiar with the KE EMu Software used by the conservation team?
9. To the best of your knowledge, how does the conservation team utilize KE EMu?
10. What is your opinion on the use of images and other media in condition reports?
11. Do you have any additional comments about the museum's technology?
12. What would be your ideal system for the digital infrastructure?

Appendix C. Outside Institutions Interview Planning Sheet

Worcester Art Museum Interview Planning Sheet

What: WAM Interview – This interview is to learn about how the WAM archives condition reports on artwork, and whether or not they use any digital technology to do so.

Type of Interview: Semi-Structured Interview

As we are not experts in the field of museums conservation and are trying to learn, we will ask open ended questions to the interviewee to allow her to talk about the WAM and its methods as much as she wants, giving us a feel as to how museum conservation works.

Goals of the interview:

Learn more about WAM conservation technology

Establish relationship with interviewee for possible future contact

Major themes or objectives that will be explored through the interview:

How WAM operates with loaning artwork

Museum conservation in general

WAM conservation technology

Planning Details:

Where: WAM

When (date and time): Tuesday December 1st 10 AM

With Whom: Sarah Gillis

Contact information: sarahgillis@worcesterart.org

Tasks:

Facilitate/Ask question - Ethan

Take notes - Frank

Interview Questions

1. What is your role at the WAM?
2. Does the museum ever loan artwork to other museums, and if so how does the museum handle the process?
3. What are some advantages and disadvantages to this process?
4. Does the museum keep digital records of artwork conservation data, and if so what technology is used?
5. Is there anything you wish the WAM did differently to improve the process?
6. Is there anything noteworthy the WAM does differently from other museums?

Worcester Polytechnic Institute Department of Preservation, Curation, and Archives
Interview Planning Sheet

What: basic description information about interview

This interview will be conducted with Ms. Jessica Colati on how WPI Archives creates and manages digital conservation and condition reports. In addition, it will also be used to explore other alternatives that other museums and institutions have the option of using due to Ms. Colati's experience in the field of conservation.

Type of Interview: Semi-Structured Interview

This interview will be an semi-structured interview because it is intended to obtain more information on the methods of conservation and management of digital records at WPI by speaking with an individual who has experience in the field of conservation. The individual of interest has worked with other museums and institutions on these types of issues and the information she learned through those experiences could be valuable to us while we continue our work in New Zealand.

Lovering, C. (2015). What Is an Exploratory Interview? *Houston Chronicle.* Retrieved from http://work.chron.com/exploratory-interview-3328.html

Goals of the interview:

· To learn how WPI manages their digital reports and manages them to make sure they don't become outdated

· To obtain information about methods used by other museums that can be applied to the Te Papa Museum

· To determine why some methods of conservation would be more effective than others, whether that be the type of museum, the resources available, or training of staff members in the technology used

Planning Details:

Where – WPI Archives in the Gordon Library

When (date and time) – November 30, 2015 at 3 PM

With Whom: Jessica Colati

Contact information – archives@wpi.edu

Interview Questions

1. Does WPI require condition reports while determining if an artifact or object is fit for display? If so, what are the procedures for creating and managing these reports? What technologies are involved?
2. What are the advantages and disadvantages with the current system used at WPI?
3. While working with other museums and institutions, were there alternative methods for creating and managing condition reports? If so, which method do you feel worked best for an institution?
4. What technologies were available at these institutions? Was the layout of the digital archiving more modern or still needed to be developed?
5. How skilled were workers on computers at these institutions? Was there training involved with getting workers situated with how reports should be managed?

Boston Museum of Science Interview Planning Sheet

What: Boston Museum of Science Interview – This interview is to learn about how the Museum of Science in Boston archives condition reports on artifacts and how they utilize the KE EMu software.

Type of Interview: Semmi-Structured Interview

We hope to learn as much as we can about how the Museum of Science operates, and thus will allow the interviewee to speak freely about the practices in place at the museum. We will ask specifically about their use of KE EMu to learn more about how other museums utilize the software.

Goals of the interview:

Learn more about Boston Museum of Science conservation technology and practices

Learn about other museum's use of KE EMu

Major themes or objectives that will be explored through the interview:

How Museum of Science archives data

KE EMu utilization

Planning Details:

Where: Tech suite

When (date and time): Monday December 14th 3PM

With Whom: Violetta Wolf

Contact information: vwolf@mos.org

Interview Questions

1. What is your role at the MoS?
2. How is KE EMu utilized at the museum?
3. Does the museum have any desire to use more of KE EMu's features?
4. What are some advantages and disadvantages to using KE EMu?
5. Is there anything you wish the MoS did differently to improve the process?
6. Is there anything noteworthy the MoS does differently from other museums?

Los Angeles County Museum of Art Interview Planning Sheet

The main objective of these interviews is to learn about the conservation documentation process available at the Los Angeles County Museum of Art. We hope to gather information on the process for creating condition reports, the documentation system in place to manage these reports, the advantages and disadvantages to the process and system, and the reason for its implementation.

1. What is your role at the museum?
2. What makes the museum unique from a conservator's standpoint?
3. How often are condition reports created for objects on site?
4. Does the museum ever loan objects to other museums, and if so, how does the museum handle the process?
    - Amount of times objects loaned out
    - Types of objects
    - Requirement of condition reports, and if so, how frequently they are performed?
5. What are the advantages and disadvantages to this process? (How condition reports are created, system for storing and managing information on reports)
6. Why did your museum adopt this system?
    - Efficiency
    - Cost of system
    - Complaints about past systems
7. Is there anything you wish the museum did differently to improve the process?
8. In what situations are condition reports created? (During loaning period, if new artifacts are introduced, schedule for condition reports, etc). Does this have an effect on implications of condition reporting?

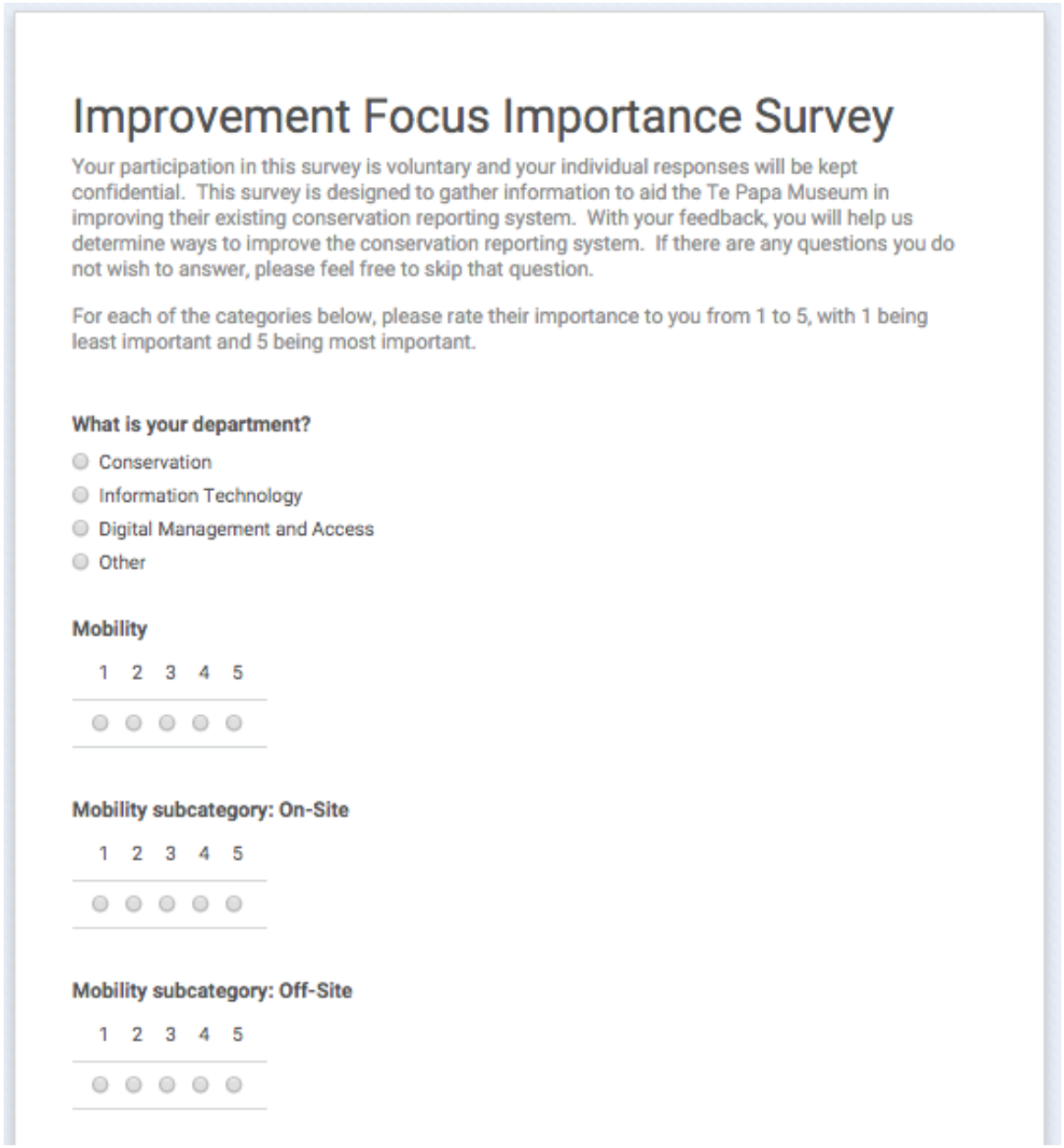
Yale University Library

Your participation in this interview is voluntary and your responses will be kept confidential if desired. This interview is designed to gather information to aid the Te Papa Tongarewa Museum in Wellington, New Zealand in improving their existing documentation system. With your feedback, you will help us determine ways to improve the documentation system. If there are any questions you do not wish to answer, please feel free to skip that question.

1. What is your name and position?
2. What is your role at the museum?
3. How many objects does the museum currently house?
4. What areas of study do the museum's collections consist of? (Natural History, Art, etc.)
5. How large is the museum's conservation staff?
6. What is their role and responsibilities at the museum?
7. How many times in a month would an object be subject to a condition report? (What is meant by more specific questions? If this isn't what she's looking for, we can just delete these.)
8. Explain your institution's procedure for handling objects such as textiles, paintings, and paper documents.
9. When are condition reports performed while the object is on-site? Off-site?
10. Can you describe your experience working with photos or other media in relation to condition reporting (how do you create, annotate, upload, and attach photos or other media)?
11. What makes the museum unique from a conservator's standpoint?
12. What kind of data management system does your institution use to keep track of objects and their condition reports and how does it work?
13. Does the museum ever loan objects to other museums, and if so, how does the museum handle the process?

14. What are the advantages and disadvantages of these processes? (How condition reports are created, as well as the system for storing and managing the information on the reports)
15. When and why did your museum adopt this system?
16. Is there anything you wish the museum did differently to improve these processes?
17. What incentives did conservation staff members have as a whole to develop the functionality of ConservationSpace?
18. Are you aware of any progress that was made by the other institutions involved with the building and testing phases of ConservationSpace?
19. What barriers exist that would prevent an institution from adopting ConservationSpace?

Appendix D. Survey of Importance



Improvement Focus Importance Survey

Your participation in this survey is voluntary and your individual responses will be kept confidential. This survey is designed to gather information to aid the Te Papa Museum in improving their existing conservation reporting system. With your feedback, you will help us determine ways to improve the conservation reporting system. If there are any questions you do not wish to answer, please feel free to skip that question.

For each of the categories below, please rate their importance to you from 1 to 5, with 1 being least important and 5 being most important.

What is your department?

- Conservation
- Information Technology
- Digital Management and Access
- Other

Mobility

1 2 3 4 5

Mobility subcategory: On-Site

1 2 3 4 5

Mobility subcategory: Off-Site

1 2 3 4 5

Imaging

1 2 3 4 5

Imaging subcategory: Taking

1 2 3 4 5

Imaging subcategory: Uploading

1 2 3 4 5

Imaging subcategory: Annotating

1 2 3 4 5

Access

1 2 3 4 5

Access subcategory: Access to EMu

1 2 3 4 5

Access subcategory: High-Resolution Images

1	2	3	4	5
○	○	○	○	○

Access subcategory: Access to Programs and Equipment

1	2	3	4	5
○	○	○	○	○

Communication

1	2	3	4	5
○	○	○	○	○

Communication subcategory: Education

1	2	3	4	5
○	○	○	○	○

Process

1	2	3	4	5
○	○	○	○	○

Process subcategory: Tools

1	2	3	4	5
○	○	○	○	○

Process subcategory: Methods

1 2 3 4 5

○ ○ ○ ○ ○

System Flexibility

1 2 3 4 5

○ ○ ○ ○ ○

Resource Management

1 2 3 4 5

○ ○ ○ ○ ○

Any additional comments?

Submit

Never submit passwords through Google Forms.

Appendix E. Conservator Edits to Condition Reporting Case Study

WPI Condition Report Case Study

Structure and Composition:

~~Description:~~ The object is a ~~Rectangular~~ rectangular embroidery attached to a paper board with double sided tape. The cotton foundation has one selvedge edge; all other edges have been cut. The ~~Embroidery~~ embroidery ~~is~~ depicts a tall ship with three masts with blue and white sails and a brown hull. The ship is surrounded by interwoven threads to represent the ocean and clouds. The ocean ~~is~~ has been rendered using a mixture of teal and sky bluewool and the clouds are worked in white wool. The masts' ~~also have brown strings connecting to each other to represent the~~ rigging is worked in cotton thread. The corners of the textile ~~was~~ were mitered ~~cut to fit~~ and wrapped to the reverse of the board.

The textile support is an acidic 4 ply mat board.

Measurements:

Overall dimensions: length = 38.0 cm, width = 26.0 cm, height = 0.500 cm.

Handling Information:

Wear gloves to protect the textile from oils that cause discoloration.

~~**Item Condition:**~~

~~(~~**Detailed Condition**~~)~~

Front: Discoloration of threads both on the ship and background as dots of dark brown or orange. Also general discoloration of all textile threads noticeable but to a lesser degree, more of a yellowish tint. Some accretion on left hand side of the textile 5 cm away from edge.

Back: Threads fraying at the mitered corners of the object ~~are where the corners were cut to fit the board.~~ Fraying on left and right inside edges of textile. ~~There is one salvage edge~~. Pencil markings on the reverse of the board made seemingly to provide owner with measurements. The double sided tape ~~is rubbery~~appears to be rubber based . It is ~~and~~ no longer sticky but is oxidized and ~~and is~~has stained ~~ing~~ the textile.

Additional Notes:

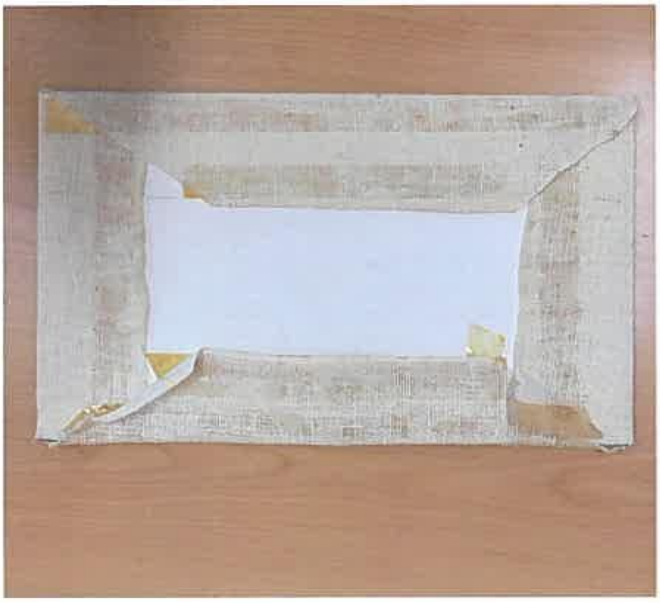
Storage: Store in a cool dry place with the front side facing upward. Have a protective sleeve to protect the object and

Textile hasn't been glued down – secured by old tape

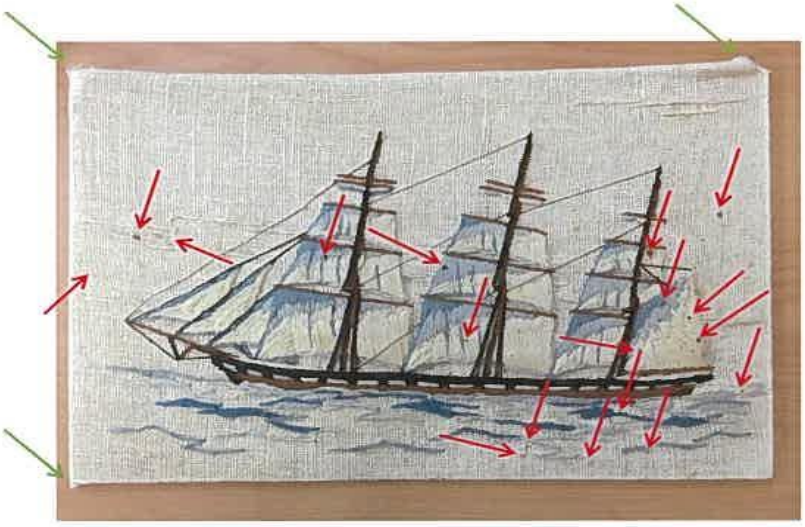
Entire textile is turning to a yellowish color

Images:

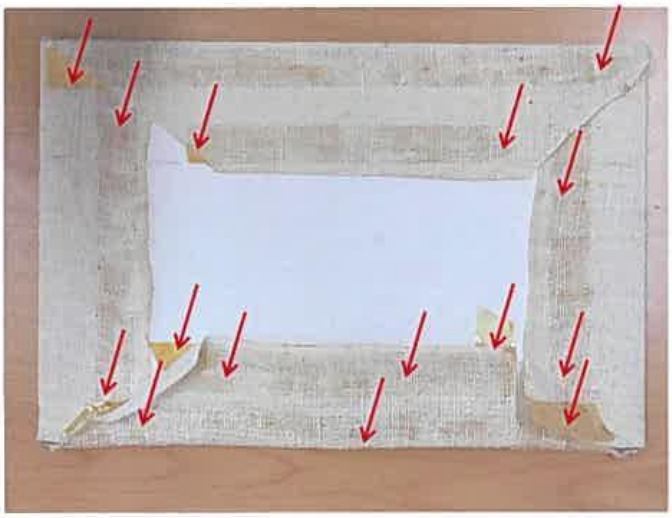
Baseline photo (front) taken 4/02/16



Baseline photo (back) taken 4/02/16



Annotated Image 1



Annotated Image 2

- The red arrows areas of discoloration from where textile was taped down

Names:

Thomas Flannery

Frank DeGiacomo

Date: 4/02/16

Date Completed: 15/02/16

Appendix F. Te Papa Staff Interview Transcriptions

Interview with Anne Peranteau

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD) and Thomas Flannery (TF)
Interviewee: Anne Peranteau (AP)
Interview Setting: Interview conducted at textile conservation bench at Tory Street facility at Te Papa
Date Interview Conducted: 1/18/2016
Time Duration: 45:44 sec
Transcribed by: Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

AP: So here, I guess I have probably not have that much dissimilar stuff to say than what Nirmala was talking about. So she kind of walked you through K Emu, I assume, and showed you the different kind of tools that that has. So I guess I can kind of talk about the ex-K EMu stuff, the other stuff. And this is a really good example, this is currently the easiest way to annotate images. We take our own image, print it off, and then we lay a print of clear plastic overhead transparency film over the sheet and marking it with a pen. In this particular example I marked all the places where I noticed damage. So I guess the shortcomings with this are the layers don't exist in digital form, only in analog form. I'm comfortable using Adobe, so I guess it's not a comfort thing, it's really just ease, because we only have one computer that the team shares that has Adobe software on it. So it's really not possible for me to use a laptop next to the object to do digital annotation of an image.

RB: Is there a reason why they don't have –

AP: License fees, I believe. Now, the other thing is that once this has been done, there are a variety of ways this could be made digital. It could be a scanned I suppose, and made a JPEG image in K EMu. The reason I haven't done that is I'm not confident photocopy would actually – I've just never done it, I don't know if that would be…if I'd be happy with what that looked like. So I guess it's just a matter of feeling like there's a better way, but we don't have it. And to just kind of scan it into a photocopier, seems like you'd ended up with something very ad hoc and probably not…whose knows if this would be visible. I've just never tried it, I've never seen what the outcome is to scan it and turn it into a PDF file. But let's say I did that and it was serviceable, the layers would not exist separately. How important this is, I don't really know, but this is just a single item for exhibition, if you imagine an entire object list of objects going on tour for years, and subsequent markings sort of collecting on this image, and then coming back with hundreds of this, it's just an overwhelming about of administrative work that people just don't have time to do., and it wouldn't get done. That's my sense about things. The other types of records that we have are spectra. So here's an example of a collection item that was analyzed using x ray fluorescence. What we're looking for in this case is what elements are present. With the mucoseens(?) looking at glass beads and determining what type of glass it is or what kind of elements are used to produce the color in the glass. And with the cloak, that's an item that's going to be on loan to the Bishop Museum in Honolulu for a long time, for more than a year. And we're looking at evidence of inorganic pesticides. So, historically a lot of objects were treated with mercury and arsenic to deter pest activity and those are now a risk for handling for human health. So we look at what could be present – that's a JPG image layered on a JPEG image – that was all done using Adobe. So that could probably be easily attached to the K EMu record. But what would be ideal is to be able to, from the point of view of generating a single condition report - we cannot, without – Nirmala may have just showed you, how when you go to the reports, and it gives you the option to print out a condition report, currently there are no images that get attached to that. So we would not be able to

generate a report with all those images, so from our point of view, in terms of sending this information to Honolulu, about the cloak, for instance, they might as well exist as separate things, because we have to collate them separately anyway, because the report tool does not print off a report with all the images attached. Does that make sense?

TF: So the images aren't attached, and you would need those images to better convey what exactly damages are on the object.

AP: So the visual information does not go along. If you're in the institution and you can open all these JPEGs and things and look at that, but in terms of having one report with all that stuff is one thing –

RB: You can't necessarily attach the media files to the report at the current moment because those exist in a separate module.

AP: That's right.

RB: It seemed strange to me it is not auto populated usually, you have to re-put every field, even if it's the same object.

AP: There's a ditto function, did Nirmala show you?

RB: Yeah.

AP: You have to go through that. So I guess, from my perspective, I think for us I would like something that I can use, take along with me, that does this, that easily produces something that can be easily attached to K EMu, that interfaces well with the collection management system. And then, once it's put into KE EMu, you'd be able to have a hard copy printed off with all this information; all the JPEGs, all the media files you'd put in there.

RB: You're receiving this data, I'm assuming from a third party right? Cause I'm not sure if you guys –

AP: We generated it.

RB: Oh you actually do have that? That's really cool, sorry, from a scientist perspective it's very neat. And this is the accession number?

AP: Yeah, all this stuff was put in through Adobe. This is all layers. That's a text layer, that's an image layer on top of an image.

RB: So there isn't currently a best practice in terms of how you would present this information as kind of ad hoc, like you make the Adobe file yourself, the statistical analysis, and you put it in your own terms? And this just one giant JPEG that goes into the media file?

AP: It's not stored on K EMu at all, at the moment. I think the other issue is that once images – we're generating a lot of these media, these JPEGs and things ourselves, and we attach them to K EMu, but we don't – I think most people are reluctant to then delete the image. So we keep this all on our H drives. So it's probably from the institution's, like from the Wilhelm Fried's point of view, it's probably less than ideal, but it's just that once something is incorporated into KE EMu, it becomes difficult – it's like another administrative task that we have to go through to then generate, go back and get the high resolution image again so we'll just – it's just better, we would prefer to just keep it so we don't have to go through that – we know where it's saved, the quality it is, and all that stuff.

RB: Do you happen to know how much storage per year these images take?

AP: No, but I would say I probably have easily 500 images. And that's probably not unusual. They're not temp***inaudible*** images, so they're deteriorating I guess. With

compression and stuff. But I think that's one of the conversations that hasn't taken place, is from a conservation point of view this is essential documentation about the object that should not be degrading over time, but we just aren't sure, we're not confident about how it's stored. There are conservation standards about photo documentation. We've never been asked to produce any kind of guidelines about that or anything. I think that that's why we prefer to just hang on to it, but everybody's probably doing different things and from that perspective of this information should be accessible to people outside conservation like collection managers who handle this stuff - we do kind of label boxes and send emails saying "we've done this analysis, just so you know, Grace, that this object does definitely have pesticides present." But then once Grace leaves - she's no longer employed here, she's retired or whatever - somebody else comes on board, how is that information – it's kind of 50/50 that would be known to them, unless the conversation happened to take place.

RB: I would imagine, when dealing with garments or more intimate apparel, you kind of run into the issue of treatment and dyes and pesticides – I mean there's ton of things we don't even know now are probably going to be toxic to us later – but all this analysis and stuff, there currently isn't – cause I know they have condition and treatment reports – but there isn't a really an object elemental analysis kind of report?

AP: No, not for every object. If we do an analysis of materials – either using XRF or whatever, like fiber identification, that is put into the materials field in the catalogue record. So probably not necessarily to generate a whole report – and especially for exhibition, that process is kind of forced to be a little bit more rigorous because of producing label text, which normally includes materials, so that's the mechanism by which we will say "we've looked at this and updated the materials field and that's all correct."

RB: And then is it just that certain people have access to that field? So whoever that person is that's going to be the curator would have access to that?

AP: Yes, and we put our names against any identification. We say "fiber's been IDed."

RB: And is that kind of a security thing that they don't allow access between multiple parties, or has it just never been brought up before?

AP: I think the curators have access and we have access so that's fine, there's no problem with that I don't think. I can show you a treatment that I'm doing, because that might show you the changes that take place to an artifact and why it's important to document those? It's back here in this other room.

Moves to another room

AP: So this is an example of a kanitori(?), tori(?) is the Maori word for dog. It is made of strips of dog skin with fur still attached. This is a really high status garment and it was only worn by chiefs, and it probably dates to before 1850 because the dogs sort of became extinct through interbreeding. When it arrived in the lab…***inaudible***...exhibition, it had these fold lines you can see there, and there's a vertical one there, so that suggests it had been stored over the long term in a folded state. And correlating with those bold lines that makes sort of these quadrants, it has differential soiling along the quadrants, so this one – I can't remember now cause I've been working on it – this has never been touched, I haven't done anything to this. And this all has been cleaned from something like that – that gray color. So I'm going along and just removing the soiling locally, just using a dilute soap solution and just treating a group of 50 hairs at a time, something that would fit along this way. That's kind of the nature of what's removed in that process. That's the kind of change that's going on, that's happening over 3 years. I've done a little bit of documentation as I've gone along, so I've probably generated maybe 12 to 15 images of the whole process. It's really important to record that sort of change, as well as things about the construction, how these strips of skin are attached, so when it's finished, what the condition is as a result of treatment. And then people can refer back to that image over the long term and make

decisions about if there's discoloration - let's just say in theory – if there's discoloration happening or hair loss or something like that, then it's known that it's actually happened since it was treated, not as a result of treatment. That's an example of the sort of thing that I'm doing.

Moves back to desk

AP: You talked to someone from LA, is that right?

TF: Yes.

AP: [cannot make out what is being said] – note taking application?

RB: The one where you use the iPad and it almost looked like a surface layers of annotations – it looked like a 3-D image of the object and stuff like that. I think we looked at that a few times, cause it was kind of attached to our proposal. Some things in general, it's always kind of a cost-benefit situation, cause I think they might have access to a kind of 3D camera, or something that can multi-dimensions and not just a 2-D image, but also we were talking to Will and a big issue right now is storage of data, and metadata is kind of hard to keep track of sometimes, and it just – the collection as civilization goes on you have so many objects – I don't even know how many artifacts could exist – and that's just kind of number increases. Every picture, every file, if it's not protected will get compressed, and if there's not backups you don't really know a lot about it. So it depends on what the application is because sometimes in that layered I feel like it could probably take more data than you originally anticipate. So, the layering is a good – I like the concept of having those because I feel like that's very user-friendly and gets the point across of the different dimensions. Whether that's going to be something that we can pursue is kind of a different question depending on what IT is planning doing for their upgrades. Because I know they have right now – it's a certain limit in terms of what storage they have for the entire building. Which, it depends on how many images

you're taking and the quality they are and then where you're putting them, how much is being stored. I think he was saying 3GB a day of photos of the week prior Christmas – which is a lot of data.

AP: It is.

RB: Especially given the size of the institution and the general limitations of 10TB of data going on. I'm not sure if any of this is making any sense.

AP: Yeah, it does.

RB: I didn't know what a terabyte was until two years ago, so – it's a lot of data, but at the same time it's not a lot considering a ton of things. If you're looking in terms of what we're thinking of doing I'm not sure – stuff like this is also dependent on who takes the photo I feel like too, cause if you're taking a professional quality photo you're not probably going to see – and it depends on the printer too, cause with a lot of dark ink you kind of lose the minute resolutions along the sides and especially the contrast here is a little harder to see cause you are surrounded by a black backdrop. And then, with the coloring on top of here it's kind of like you have to think of what ways would be good. We were thinking along the lines of, maybe there are some apps out there that allow you to do – it's almost like Paint on a computer, it's a very simple analogy – sometimes Adobe is a little more convoluted than it should be cause it's a lot more detailed, but just having the ability to work with a stylus or something to write on an image digitally, and maybe if the first step is to just save that as a JPEG and be able to upload that. What I'm hearing from you is a lot of questioning about where the data's going and where it's being backed up and where it's being stored – I can see where you're coming from. If you have all these images and their objects are deteriorating at a certain rate in time you want to have the most accurate image and you want to be able to say "this is what it looked like 10 years ago, and this is what it looks like now," and to be able to have that detailed information. So maybe we could probably look into long-term storage

or backup of metadata that's extremely essential and stuff like that. Because it's impossible to save everything, but it would be possible to save certain things and probably be able to keep track and have the information between IT and you guys. I'm just thinking out loud. I process very much in the air.

AP: I do too. I just think there's the issue of the image quality and storage, that doesn't necessary mean that has to be sorted before some options for doing this kind of thing are explored. I think for us this would probably be the focus, how to generate this, using not an overhead transparency piece of film, and exploring what those options are. Again, what resources are required takes time and money. The resources to not only do it, and then to make that data – how to sustainably attach it to the KE EMu record in accordance with what Te Papa wants. But I don't think it's necessary to have all of our stuff – if we do that I think its accessible enough, I think the focus really has to come from our ability to do this efficiently without a huge learning curve. Not only that, but once all that is generated, all that information, say a JPEG that's annotated, we have to be able to put that information back to KE EMu from mobile to a desktop without emailing it to ourselves, printing out hardcopies and scanning them through. Ideally this would be via USB. And when we talked to some of the collection information people last year, or even before, that was a really big limitation because a lot of the apps were developed for iPad, which is not USB compliant, and the tablets don't have the apps. So apps like "notability" for instance, which is a note taking app, have all your images on Google Drive and you can download them from Google Drive, write on them, and then that's a JPEG that you've made notes on, and that's pretty straightforward, but how do I get this off my device and back onto here? I have to email it to myself. And it's like, am I going to spend two days emailed 200 images to myself? And then that's not even the end of it. Then, I have to attach each one of those to KE EMu. And then if I wanted to print off a report that image is not going to be on it anyway. Do you know what I mean?

RB: Yeah, I'm wondering if – well we're going to talk to Carol later this week to explore what options are out there and what we can do. Because I think there's a whole bunch of things that are potentials for us to say "this specific app or this

specific solution will work," only because – and we're thinking long term, you're going to have a new app in two weeks and what if that's one even better? You wasted all this money on one, and if everyone's walking around with an iPad and that iPad is outdated – there's ton of stuff that's capable of being implemented, it's just where does everyone fall on the spectrum. I'm kind of getting – I don't know if you get the same sense from Nirmala and you – she was saying it's something between 20 and 30 minutes per object for a condition report.

TF: It's very time consuming to put an image onto a report.

RB: Or not even just that, just updating the reports themselves. And I'm thinking you have 200, if it takes up to an hour that's 200 hours you have put into administration work where you could probably be putting it somewhere else. So we think time is the number one thing we have to be very considerate of because time is definitely a resource in this line of work, very essential to keep in mind.

AP: And people just won't do it if it takes that time.

RB: Exactly, and I think in terms of preservation you need to have details like this because if you don't have the annotation or someone just doesn't have the time to put it in, and then you don't know if this damage was this date or the year before, or after, and especially probably if there's insurance involved, and stuff like that.

AP: I think if they could look at – and I'm not sure if it's licensing that's involved, it could be something else. But if we could just look at having Adobe on laptops for each lab, that would probably ease – that would make it easier for people to generate these things as JPEGs in the first place. And it would be more likely that information would be preserved with the KE EMu record.

RB: Has anyone ever considered anything – I mean, the learning curve is kind of one of those things where it's like – cause I'm envisioning at some point Adobe

probably will not be able to meet the system requirements. There's going to be something, because there's always updates that don't update.

AP: We haven't really had issues with this one computer that we have that has it is networked – as far as I'm aware, and we've had that for several years now.

RB: If there was a way to – cause I know as much as emailing isn't great – I mean there's probably a way to do it, I don't know, we have to look into it, some of the things we were thinking about conceptually would be if you did have some sort of digital mobile device that you were able to take a picture with, even if it's not high-resolution, if it's something to at least see what you're looking at, and being able to, with whatever app you're comfortable with, annotating and then somehow wirelessly connect to the system…

AP: I think they had – well I guess you can use Google Drive or something.

RB: Yeah something like that, or like an airdrop system where you can kind of take it and put it into Google Drive – that might be a way to –

TF: Would Dropbox be suitable as well? This is just me thinking out loud.

AP: Yeah I think we didn't actually have access to either of those things until a couple of years ago.

RB: Yeah, it's always funny because they don't even have Hulu here and I'm using that back in the States – I think there's plenty of options that we can look into and I think it's good to know that everyone's – at least in this general area – on the same page. I know given this and processing this it seems that there's definitely a more efficient way to push this data because there's probably so many hours that we can save you guys.

AP: But I think you're right that having a really high quality image to start with is important too and we don't always – for whatever reason – it often takes two weeks. We are asked to schedule a session two weeks prior to needing the image, so that can be a barrier too if we need to produce some information on an object in a hurry you're kind of forcing into taking your own image.

RB: Is that a legal thing that you have to use them? Or is there a way to go around that?

AP: Not really, it's just because our in house imaging team is probably a little bit under resourced as well. Because they do a lot of last minute jobs taking photos at events and they get called out to do stuff.

TF: How many people are on the imaging team?

AP: There are three photographers.

RB: Oh my gosh.

AP: And there is one person who does – I shouldn't actually – among other things – I'm sure he does a lot that I'm not aware of – but he's kind of the person that – if we have old photos, which is another thing that we have to deal with, he's the one that stand in the black and white and the slides, and then he also looks at the JPEG images, or the images that the photographers have captured, and makes sure there's not a weird, bizarre mannequin stand sticking out of the bottom – do you know what I mean? I'm sure there's a word for it – he starts them up in Photoshop. So…let me find a goodie. Okay, here we go. Back in the day this is what the mannequins looked like. So we'll get something like this requested for exhibition and we'll look on KE EMu to see what kind of stuff exists about this object. And it will say "hard copy report only." So none of the data is actually in. It just says that there is, somewhere, there exists a hard copy report. So we'll go back to our lovely condition report from the typewriter days. This is from

1981. And it's really lovely because it has a very detailed condition report and diagram of the structure of the garment. Which is really awesome, there's this gorgeous drawing of the tassel and the measurements of the pieces. What this is, is she's diagramed the flounts(?), so this width of fabric and measured how much fabric is between these decorative bands. So this is all really cool and definitely of interest to people who come in and research the collection for historical costuming purposes and everything. This is the treatment report. They had somebody back in this era that did the typewriting of reports for them. Sadly, that position was disestablished, because we could surely use it now. And then, we have all manner of historical photos of this object that record the treatment. This is a treatment I mentioned that shows how the garment was stuffed out with netting to dry, I think. It was probably bathed in solvent, which is also something that we don't really do now. This is important because it shows that it was treated at some time in the past. And it's the condition record from thirty years ago. So we can look at that, and look at it now and decide its damage, because its storage format is inappropriate for it, it's suffering from the way it has been stored for the past 30 years. In a lot of cases there might be some confusion around the registration number or its location. So let's say we go into KE-EMu to look at its registration number and it will say "brown silk dress." So there's like, 200 brown silk dresses in the collection. And we'll say "is there an image of it?" and quite often there isn't, this will be the only image that exists because it hasn't been – since this time – digital imaged. And so if there's confusion around all these brown silk dresses; what's the registration of this one, it has no storage location so it's missing in the collection. We can go back and say "we're looking for this one, actually." So that's why – I mean it's not only from a condition point of view, it's reconciling some unknowns about items and – so that's why we always send these to the imaging team whenever we get something out that has no image because at least they can scan these and put them in.

RB: How many reports are there that are just a paper copy?

AP: There's probably…I would say it would be at least a 100.

RB: So there are just a hundred objects that are not listed in EMu at all?

AP: They are listed in EMu, they wouldn't necessarily have all this information. It just will say in the conservation module that there is a hard copy report. But none of this would be in it. It would be up to the person to come down here and look in the physical files. And with us having curators that aren't in the same building, that is another barrier for them. It's unlikely. Sometimes this will be the only image of an item that exists for the moment. So it's a whole hodgepodge of things. So I guess, this is apart from the question of annotating things, this is more about the kinds of things that aren't on EMu. But it's more straightforward because we do have a person that we can send this stuff to. We've put in the information, if we're getting the object out and doing a condition report anyway we'll go ahead and pull the hard-copy and enter it all in. But we don't have the time and the resources to go and look at all the hard copies and pull it all out, and put it in. But we do have somebody assigned who does do the scanning in of this stuff so it does get attached to EMu. So that's good, there's somebody that can do that.

RB: It's very interesting. So do you have access to digital cameras here?

AP: Yeah, we do, we have three. We could probably use another couple of cameras. Because I think ideally, each lab would have their own. Yeah we do quite a bit of our own image taking.

RB: And USBs are kind of like your go-to? Because I think they're relatively good, you probably have to delete the images off them at some point.

AP: The cards, yeah. We each have our own card. I know some people have hundreds of images on their card and they don't really know if they've – everyone's kind of in a different place with it depending on how much other stuff they have going on.

RB: And is there a best practices – I mean like operating procedures for how you do your report and how it's structured, kind of like how it's inputted and what time

frames and anything like that? Because we don't really know much about the administrative aspect of what has to happen and when and what has to be included and how it is and if everyone's doing the same thing or if different groups do different things.

AP: I'm sure different people are doing different things, so I guess that you guys being here and talking to people about what they do – and not the process but the time frames around. Like, "do you take notes?" "Do you take paper notes and then input them into KE-EMu later?" "Do you work with a laptop next to the object and do the condition reporting as you go?" You'll probably get a range of different answers. And then, I know for myself, I keep an excel spreadsheet of all the objects that I work on, whether it's just doing a condition report and putting in the light level requirements. Or if it's full on treatment, making sure I have the before and the after treatment images attached, so I know what I have to do if I don't do it right then. So I'll probably have two chunks of time every year where I go through and I audit myself, and I do anything that's outstanding. So maybe I'll print off one copy of that.

RB: And there's no way to put a status report on *inaudible*

AP: Nirmala may have shown you the – putting in like, how to track light exposure, so I'll show you that.

Anne retrieves files

AP: This is everything I've done since arriving here in 2008, so it gives you a sense of basically – 1, 2, 3, 4 – it's like 5 pages. This is all the exhibition, what is involved. Each exhibition has a module number in EMu, so all the objects that are in the exhibition are attached to that module record. These are the particular textiles that were brought into the lab and assessed. The condition report was done – if this isn't checked it could be because somebody else was assigned as objects or it had an existing condition report that did not need to be changed. This one for example, the photograph was – so the before

treatment photograph was done, they were treated – this is particularly relevant for costume, to have to put it on a mannequin. Imaged after treatment, and sometimes it has to be imaged after it's put on a mannequin because there will be no existing photo of it on a mannequin, it'll just be somebody took a photograph of it on a table. And then, information about the environment is inputted. And so the environment tab, which I'll show you later, is not really essential from the point of view of annotating images. It's just being able to record how long something is on display so we have an idea historically of how long something's been out. We try to limit that for certain objects that get requested all the time. So, then, I think there's a column missing – when I've got all the images attached to the record, the exhibition's over, there's an accurate record of how long the thing was out on display, and all the documentation is complete then I can check that. So in terms of the time frames involved and best practice and everything, it's often that you can't really completely completely do it until the exhibition finished. Especially for a tour. So it could be five years something's out and about. But for a normal six month exhibition, you should be able to do that within the year, and have all that.

RB: And this is just your personal task management sheet?

AP: That's right. So, I don't know what other people do. And I don't know how they find it in terms of being able to keep up to date.

RB: Well, thank you.

AP: ***inaudible***

(End of Interview)

Interview with Carol Stevenson

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD), and Thomas Flannery (TF)

Interviewee: Carol Stevenson (CS)

Interview Setting: Toroa Conference Room, Cable Street facility at Te Papa

Date Interview Conducted: 1/29/2016

Time Duration: 15:53 sec

Transcribed by: Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

RB: Do you consent to use any of the information gathered in this interview in a formal report that will be published and publically available?

CS: Yes, that is fine.

RB: Perfecto. So, what is your name?

CS: My name is Carol Stevenson.

RB: What is your job title and description?

CS: I am the Collection's Information System's Manager. And so my job is to manage the collection's database, which is EMu. But my job is also to manage the information. Whilst I manage the physical and technical side of EMu in terms of troubleshooting and user issues, my job is also to manage the information and ways that we can record that

information by following best practice and international standards. And also how we can extract that information and get it out and use it for other people as well.

RB: So can you describe the digital infrastructure of the museum?

CS: So I had to make a few notes on this, because I am not a technical person. My job is not – part of it is technical, it's not the big technical picture. I just need to make sure my thing's working when it needs to work. So my understanding of our infrastructure is we have a virtual environment. Some people, and I'm one who uses the local environment as well and uses the local machines for certain processes. I understand that we do have some Wi-Fi in the museum. And there's a hotspot by level 2, that's the main area where users can access our free Wi-Fi. But there are other parts of the museum where you may get Wi-Fi as well. And there's also some Wi-Fi back of house, but I think it's quite sporadic and you need to be in the know as to where that is. In terms of software, so we have the main software suites here. But also if you require additional software, which I do sometimes for my job, it's made available via IT, and they are very helpful in giving me access to what I need as long as it's required for my job, so I use things like python so they installed that for me and got that up and running. In terms of the EMu environment, so we have our own server called Gruarowa***inaudible***. And we have live and test environments on that server. We also have regular patches made to that server by our IT department. And an external supply called RSS. So IT sort of looks after all of that side for me. We also have our three multimedia repositories which I showed you a diagram about where all our media is kept. So I think yeah, that's kind of the limit of my understanding of how it all works here, hopefully that all made sense.

RB: So then, moving from that, what are the technological constraints with the current infrastructure?

CS: So I think speed is an issue, particularly around the virtual environment. That doesn't seem to be working as well as it could, or should work. I also think storage is an issue for me in terms of EMu, and particularly our media repositories. Of late, we have

increased that and I should add that's been one thing that's been really good with the relationship with IT in that if it's flagged that we're reaching capacity we have been able to extend that storage. We are always growing and I think that's the thing with our storage and particularly our media, it's not going to get smaller, it's just going to get bigger. And particularly high res images and stuff like that. Storage is an issue for us, but that's an issue IT are aware of and looking into. And also I think back of house Wi-Fi is a bit of an issue. Particularly in the stores, so for me in terms of EMu is that staff can't update live there and then in front of an object. They have to go back to the PC and update the data there which is a lag and things can get missed at that point. So if they did have Wi-Fi in the stores it would make our data much more accurate, I think. So that's question 5?

RB: That is question 5. Question 6: how often do you work with the conservation staff and can you describe your working relationship with them?

CS: So I work with conservation staff as required, at the moment. So when we implemented EMu we worked very closely in designing what they wanted, how they wanted the process to flow, and how EMu worked. Whenever they require a change or they – like recently, Gillian and I worked on some new pic lists – and cleaning data associated with that. So sort of they came up with an idea of what they had recorded ten years wasn't quite what they wanted so we did some data cleaning and changed those terms and those lists. So it's usually as and when I'm contacted by conservation. If they have problems with reports then they contact me. I am in charge of creating all of the reports in the crystal suite that EMu uses. So any changes to a report have to come through me so I work closely with those who require those changes. And again, we've recently changed a number of reports for conservation really around touring and style guide and things like that. I do that as it's required. In terms of regular contact it really is at the moment as they contact me.

RB: So, that would lead you into seven. So what is your understanding of the conservation team and the role that they perform at the museum?

CS: So I, in a previous life, was a collection manager. So as a collection manager you work very closely with conservation and so I think I have a very good understanding of what they do. Part of my role is process so in terms of acquisition and loans process as well I have developed guidelines around those so I sort of understand where conservation needs to come into that process and what they need to do as part of that process. Same with touring exhibitions, I've recently been doing some work with touring exhibitions and doing some guidelines around when a conservator comes in, when they need to enter their information, and what they need to do. So I think I have a pretty good understanding of conservation, what they do, when they should do it, and how they do it.

FD: I have a question. Were you a collection manager at here or at another museum?

CS: I was the collection manager here, so I was the collection manager for paintings and sculpture collection. So I worked closely with the paintings conservators and the framing conservators and installers.

RB: Is that how you and Matthew know each other? He said that you guys are super close.

CS: Did he? Yes we are very close. We are yeah, Matthew's a good guy. And actually I worked at the ***inaudible*** in London for a number of years and he came over and visited me over there.

RB: He was giving us a good background on the whole frame stuff. So he was like "yeah, I don't really work with EMu that much but I do know Carol very well personally" and then now it's like "oh that must be why." Sorry, side tangent.

CS: That's fine. I do know quite a lot of the team already there so that helps with the working relationship as well. There's been a few changes.

RB: So then we're not going to ask you question 8, because I'm pretty sure you're familiar with EMu – I would assume!

CS: One would hope!

RB: So question 9, to the best of your knowledge, how does the conservation utilize the software?

CS: So, in practice – well no, let's do theory. In theory, EMu is set up as conservation wanted in terms of arrival and departure of objects, in terms of recording treatment and condition information, and when we implemented EMu we also created a preventative conservation aspect to EMu. Unfortunately some of those areas are not used, particularly preventative conservation. There was only one preventive conservator at the time and he was trained and helped in the development of EMu, he didn't really do a lot of work with EMu. And he since left, so no one's really picked that up, I think. I think EMu has a lot of fields for conservation, there's a lot of data that could be recorded. I think there are fields that maybe don't necessarily need to be there, because they aren't used. You know when you develop a system you think of everything you could possibly want, and then when you're using a system you're only using this field and this field. I think the fields they do use are the fields that they require and the fields that they report on. There may be instances where we need to do a bit of tweaking around lists and using those lists. I know some conservation staff find the lists a little cumbersome. But there are reasons that we do have those. But again, we can add to those lists at any point and we can add information that you need. Yeah, I think they are high end users in terms of entering the data and extracting it for their condition reports, because they do only use EMu for their condition reports, which is great. Yes, I do think they utilize EMu.

RB: Perfect. So, what is your opinion – hot button topic here – what is your opinion on the use of images and other media in condition reporting?

CS: So the images that are used in the condition reports are as they were specified by conservation. So the little thumbnails are what conservation wanted in their reports. I think the use of images – I think the annotation of images in condition reporting is required. I think paper form of that is not really the way we want to go or should go, or is the easiest way in terms of – I'm think of particular touring or out of the building, you want to have it digital. And also digital, you can do more with it. You can zoom in more, gives you more flexibility than a printed image on a page. I think what they have at the moment is the best that we can offer them at the moment. I think it's not what we really should be doing in terms of our images in condition reporting.

RB: Cool, do you have any additional comments about the museum's technology?

CS: In general?

RB: Yes.

CS: Like I said, the technology is not really my side of things. I think there are smarter ways that we could working and using technology. I think Wi-Fi, I think tablets, anything that just makes life easier than having to go to a desk and sit down in front of a PC is really useful. I think a lot of our work now happens outside of these four walls. So the ability to do work – well the technology that enables us to do work outside of these four walls needs to be looked at and thought through.

RB: And then our last question: what would be your ideal system for the digital infrastructure, in a perfect world.

CS: In terms of the condition reporting?

RB: Yes, and just in – conditioning reporting being the focus but obviously digital infrastructure influences all the processes at the museum so that would then kind of backwards infer that anything in the digital infrastructure would then improve that

process or hinder it depending on what you think – where you see it going now. Obviously Wi-Fi is probably the number one thing, but I don't know if there's anything else.

CS: Well I think Wi-Fi but I also think we need to think about instances where there is no Wi-Fi. Whilst in an ideal world we would be able to connect anywhere and access what we need to access. That is unfortunately not the case. So when we think about what we're doing and the future of our technologies we need to think about the processes around when worst-case scenario doesn't happen. Because those are the real problems, when you've got Wi-Fi and you can access the systems and the technology's and everything's fine, but when you can't it's about the process about how we then get the data back into our existing systems as well. I don't know if I have an ideal vision of what I want it to look like, but what I want is ease of use, the ability to extract and import back into our core system and repository for our data, and the ability when worst case scenario isn't there. So, how we can actually then do that. That's quite a tricky question that one. Maybe we need to look at that one.

RB: Is there anything anyone else wants to ask?

TF: That's it.

CS: Oh phew! That wasn't so painful.

(End of Interview)

Interview with Jenny Cauchi

Interviewers: Ethan Coeytaux (EC) and Frank DeGiacomo (FD)

Interviewee: Jenny Cauchi (JC)

Interview Setting: Interview conducted in tea room/break area at Tory Street facility at Te Papa

Date Interview Conducted: 1/26/2016

Time Duration: 57:31 sec

Transcribed by: Frank DeGiacomo and Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

EC: Our first question is do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available?

JC: Yup I assume unless there is anything someone above my level decides is information they don't want out there, but I don't have a problem.

EC: So the basic questions, what is your name?

JC: Jenny Cauchi

EC: How do you spell your last name?

JC: C-A-U-C-H-I

EC: Got it. What department do you work for?

JC: Conservation. Are you using specifically paper and textiles or just conservation?

EC: I guess yeah specifically would be fine.

JC: Paper. Yeah paper conservation.

EC: What is your job title and description?

JC: I think it's technically Conservator paper or Conservator works on paper. I'm one of the conservators responsible for the collections that fall under works on paper, which includes photography and things that aren't actually paper, but they fall under paper.

EC: For question 5, what is your role in the conservation process? We'd love to hear I guess the specifics of the paper side of things.

JC: Yeah, well there's a sort of range of things, so there can be things that don't necessarily involve remedial treatment work. I mean that's one side that's a big basic side where we are actually working physically on objects that have an issue whether it's some kind of damage or some inherent sort of vice condition issue like say poor quality attachments or mating that kind of thing might be working on the other side. I guess assessment and advice and sort of the research side of things so that might be for things like exhibitions where weight, review objects, look at objects, and consider if they are suitable to be displayed or suitable to be loaned, if they're going out, what requirements they would have around how they're displayed, the light levels, the length of display. If it's a loan, or a tour, could they only go to one venue? Also if we have proposed acquisitions, so things worth thinking about, acquiring for the collections, conservation looks at those first, since I'm from paper we get sometimes several every week of things and they're might be multiples like something we want for purchase but it could be donation so someone might be giving us hundreds of photos to do with something or other and we have to assess them and provide implications so that's where we might be

saying while if we acquire this the impact it will have for us would be are the conditions really good? Stable? Maybe we don't have to do anything to it, but if we display it could be considered sensitive. Letting the curators and the acquisitions committee people know what impact it might have or if it's in poor condition you can say, ok if we get this it is going to take many and many hours of treatment. It's going to require this or the materials involved with it have inherent condition problems so they are actually going to deteriorate even in good storage quite quickly and therefore if we get it, we need to know that with our eyes open. If we want to show it right away, will it still be in good shape or take really good care of it and not show it normal so that it lasts for many years. We have to give them a brief summary of what our thoughts are on the implications. Doesn't usually happen with the conservation side, but if its financial things. If there's a work that's a joint textiles and work on paper…there's lots of works that have mixed media, so we work closely with other conservators a lot of the time too…that is made from poor quality materials and we've acquired it unmounted from the artists. We have to mount it, so it's actually had a lot of implications in terms of cost, as well as, our work level – dealing with it once it is here. We put in financial things as well, if there's materials we specially have to get for this piece that might impact its acquisitions, so they include it in the budget. It's quite important because often, we've had things get acquired that have had no money included for money or matting. Those things cost actually a fair bit. There's always some research projects that ideally are working on that might be to do with things in the collections specifically an artist and their technique and their materials or a body of work or it could be to do with preventive things. One that I'm meant to be doing and I haven't had much time for is looking at microclimates for framing, which is not ***inaudible*** I'm not reinventing the wheel…people do a lot for that, but I'm trying to look at it at a point of view, specific to Te Papa and New Zealand's kind of climate and things that are really pragmatic and kind of low tech, low cost to look at how are existing framing performs versus changes we might be able to make that would enable us to travel it to more venues that we would right now isn't a suitable venue because the environment just isn't within the parameters we want, so there could be things like that. There's things like supervising interns, professional bodies within New Zealand there's a New Zealand conservators' professional group, and a lot of us are involved with that in various

different ways, big members, and that's something that Te Papa supports as a national organization. They support our time to be involved with things like that as well. There's probably a few other things but that's kind of the basic things we do all the time. With exhibition work there can be that combination of assessment and treatment for preparation of things and collection maintenance, which it's not needed for an exhibition or it's not going on tour but needs work on it, so you just do the work that might come out of surveys we do that would collect information. I rarely have time for collection maintenance.

EC: When you look at artifacts to acquire, does that involve a lot of traveling out to where it's going?

JC: It can. It can, so sometimes they're already here at Te Papa often if it's…we definitely go with a few things. I went to Sydney to look at something obviously it was a high value thing. It was cheaper for me and a curator to go and look at it than to pay someone in Sydney to look at it and give feedback to us; that is the other thing we do is when we are getting things from overseas, we often ask an external conservator to review it and write a condition report and we put our own comments on it based on what they said. Sometimes for things that are not high value and not the easy to go to, we might only have images to go off of and in that case I need to just be very much have a blank statement because you can't tell a lot about the condition and there might be things we can't see, so you kind of make something that covers a very broad…this might need work…this might need that, but you can't actually really tell. If it's something that we are going to get no matter what even if the condition is kind of poor depends on what important***inaudible*** and it kind of almost doesn't matter really, but it's a good reminder for us when the thing actually arrives that at least we look at it once we've actually acquired it, actually check the condition now that we have it and that is when we enter something in EMu. There's a little drop down brief sort of survey tab one where we would say this is just exhibitable or it just might need object support or need minor treatment. I think the next one is active deterioration, which is a little bit not always true but it's what you have to click that's in between minor treatment and can't be shown at

all. I've gone actually this year to actually a few places to look at things and sometimes it's quite a large volume of stuff. We often do those trips with someone else so it would be with a cultural manager or a curator depending on what we're assessing. I went with one of the curators to look at one hundred Japanese prints not a few months ago. I don't know if we get them yet and then things can come up very last minute like the curator hasn't been paying attention and suddenly they realize there's an auction two days from now that has something they want to bid on and they literally can't get that approval to bid till people put in the things that we have to run to the auction house. But those condition reports that we get externally, they stay with the loans and acquisitions team. I know they get put somewhere in the file, but they don't end up in EMu because we may or may not get that object. I think they end up in Pou Mataaho or records system somewhere and depending how short it is I might just extract the whole information and cut and paste it into that field in EMu, but I may just say that it's attached to the file.

EC: Where do you work with the condition reports? Do you usually do it at the same table that you're working on?

JC: Depends what stage I'm doing with the condition report. Often like the initial one where I'm just literally writing the condition report, I would do right next to the object and I do it by hand unless there's some big reason that it's a survey thing and I actually have a laptop and I'd be doing it, but ninety percent of the time it's not like a survey type of thing. I have a notebook. I write them by hand when I'm next to the object.

EC: Do you have to transcribe them to the computer?

JC: Yup. I do. For one or two things it's pretty quick. If it's a lot of things and they're very similar, I tend to do lots of dittoing, copying, and that sort of thing so you can repeat used information you put in. I don't have one template that I sort of copy. They follow the same format but I don't have like…someone asked us about this if we had templates already set up for those and we don't, so it's either you copy an old one or you just start from scratch, but they always have the same format in terms of…more or less…it

depends how brief and again if it's a very minimal treatment something really quick that you're just doing, you're going to focus on the condition that maybe relates to the things you're doing. You're not doing a full condition report of the object where you might be describing it in great detail to the nth degree. Most of our reports we are doing, especially for exhibition work, things that might have a time crunch, are like that. They're fairly brief, but if I was doing one for something where we are going to do a lot more study and analysis and it's going to be a big project. We do a really full detailed condition report that might be quite lengthy and we don't do anything as laborious as we did in school ever. I still write a reasonable amount.

EC: Do you work with condition reports?

JC: Yes I do. I have a notebook. It's almost like shorthand because I have a lot of abbreviations for things I know. When I sit down in EMu, it's quite quick usually to create it. Again if there's a group of things, I often do them in bunches so I can just copy some of that stuff that's all for the same exhibition, same date…you can kind of just chuckle that in and catalogue it in and just cut and paste the bits that pertain to that particular object. I don't find it too slow, but I'm sure there is a better way to do it. The reason why I still like handwriting is there's already enough things on my bench with the object to not also have a laptop or something that takes up room with cables and the Ethernet wire. It's just too much clutter on the actual work surface. I find for myself and I can take the notebook anywhere and it's handy for me when I go back and for my own sort of record keeping. I know what things I still have to enter. The only problem right now is that means I have a backlog. I always have a backlog of things to enter. I probably still only have forty to fifty percent of the treatments I've done entered because I do need to take chunks of time and I can't do it every day right when I finish. I just don't tend to work that way. I need to sit down and take a whole day. Do that entry the whole day and not do it again for a while, which probably isn't the best way to work, but I do get caught up now and then, but I'm not caught up at the moment. The reports exist but they're not always in EMu right away.

EC: How much time, about on average, does it take to create a report? I know there's a lot of different scenarios.

JC: Yeah I think it really really does depend. Let's say for an object that's minimal and you're not actually doing the full report and probably…is this including looking at the object or actually creating the entry in EMu? What are you thinking?

EC: I guess just creating the report after you've looked at object.

JC: After you've looked at the object? Ok, because the looking at the object could be the thing that takes the most time. I would say the exhibition…yeah different things would definitely be different for different time frames because I think the loan and the tour ones can sometimes take a little bit longer because you are actually marking up images, which for the exhibition are under treatment when they are acquired you might not be because you have images that are getting to be taken, but you're not actually sitting there marking condition issues on those images at that time. It's something you might write when you are writing a condition report, but you don't physically mark up the image. Whereas with the loan and the tour where you've got a physical report accompanies the object and we do the image markup. I think it could take as little as fifteen minutes to as much as a couple of hours and then some objects might take days depending on the complexity. Like a group of prints going off on loan, if there's four or five of them, they're the same. You know like the same series, same artist, quite similar. Again you can do a lot of things for all of them at once and then do the specifics. You could probably do that work in probably fifteen to twenty minutes of work if that, but if we just acquired this late seventeenth century wallpaper panels that are huge. They're panorama wallpaper that goes around the whole room that's just been acquired. It came in before Christmas and it's still in quarantine right now because it had a bug. We haven't been able to open it up fully yet, but condition reporting that would probably take several weeks because we'll look at it in different ways with three different types of light. We'll maybe take some samples. Do some bits for analysis, so you might have a condition report that's just here's the state of the object but then you might have further things: here are what

pigments are present and here's this and that, so it will probably keep evolving as it goes on to a massive one maybe not quite as detailed as Linda has been doing to the Turanga, but a bit more going up to that scale. It's not an easy average to say…I'd say I'm fairly quick so what that translates to…yeah…the other kinds of reports we might do, I just thought of this, as we do sign offs of Dreamworks that's a brought in show. We condition report those objects, which aren't ours, but their condition reports that they've supplied that we check and might amend at its sign off and then I think they have all been scanned. Dreamworks has kept those scans and we have the originals here because the objects are here, so if something happens, we can pull those out and check the dates and stuff…that might not actually relate to this. Let me clarify for exhibition, we don't do condition reports for everything that's going on display. We just don't have time. I think it would be good if we did that, but we don't. I mean what we often do is just assess on the counter fact of the spreadsheet for the exhibition that's from EMu, it's the exhibition items and in that we write comments. There's a tab for conservation, collection management, and we can write condition comments and that's where you put this work is stable, it's good to go, etc. To me that suffices in a way as its condition report is not detailed at all, but there be special things I know there's certain works that more vulnerable where the conservator does a specific condition report. It's less likely for paper because pretty much all works on paper, not all the time, most of the time are framed, glazed. They are more protected than some of the paintings where some of the surfaces are quite delicate or some objects and we want to know if they've changed when they've been on display. Sometimes that can just be really good images that are taken once it's up, but it's not like a set thing that we can condition report everything that goes going out on display here. We definitely do if we treated it before it goes up. I think that is something that we should be doing, but it's getting difficult with time and resources we have at the moment. The volume is huge. When we're assessing things Gillian likes us to and I don't always remember to do it, but I've been getting better at it is to check off in that survey tab a quick thing like exhibitable, meaning it's ready to go, versus minor treatment, so we try to do that as well, but then as soon as you prepare it for the exhibition that's changed and you don't always go back and update it right away.

EC: Can you describe your experience working with photos and other media in the condition reports?

JC: Yeah, so mostly that would be images that I would take or I would have the imaging team take for two things. Ones that we create and use for treatments, so they might be created by ourselves. There would be ones that would already exist in EMu that we would use for loans or tours and those would be ones that accompany the works with the conditions reports, so some of the ones we create or some of the ones that are already existing or our imaging team creates. Right now, what you've probably heard from everyone else is that most people have them stored in their H Drive and then you try to…it's very time consuming. I think it's probably the worst thing in time consuming to put photos in EMu. I've started to do it, but I've only done a few of the ones I have. But otherwise ones that already exist in there that we use for condition report depending on how high res we want it, we ask the imaging team to put a high res copy in a file for us on the shared drive because we can't download the highest res thing directly from EMu. You can get a big JPEG but you can't get the biggest GIFs sometimes it's not enough for JPEG, depending on how they are printing it and then we print them off the printer in there. You put a little bylar overlay and then you mark it up with markers, basically with pens, so someone looking at it can right away see how it's a big stain there, things like that.

EC: When you mark it with pens, you then scan it back?

JC: Then it gets scanned in and put in Poh Mataahu in the related loans or tour file, but for an object that we just acquired and it's not worth going out somewhere, we might take images and then generally mark them up, so ideally the image would get attached to that work in EMu, but it's a bit a laborious. People probably have thousands of pictures on their computers, not great and you may have had some discussion with others about this but the problem in the past of why we haven't been putting them in there is because they have to get attached to the catalogue module, so everyone can see them, which is fine. There is a worry that they might get misinterpreted or misused because sometimes

objects in mid treatment can look and even with a good description people who don't know what it is can…that was the concern, so that's why we're putting them in their but I think it's worse to potentially lose them if something happens to a person's H Drive or that person leaves and it gets worse. I think we've all started putting them in more which is good and just making sure they are linked to the right condition report or the right treatment report file. One thing I can say though about the condition reports quite often if you're doing treatment on an object rather than making a separate condition report and then a treatment report, you can do the condition report and that treatment report all in that one treatment report record, so that's mostly what I do. I have attached I think a PDF once with notes and something like a diagram so there can be other things besides just photos that's useful to be able to attach to the file. I know they can do bulk uploads you can't always do the individual annotation for a particular image that way and you have to go back in and do it, so I've only done one by one. I haven't done any bulk or haven't asked the EMu to do any bulk loading for me yet. The image thing is one of the bigger problems.

EC: What are the advantages and the disadvantages of the current process?

JC: On the other hand the image quality you get from looking at an actual printed image with a marker is very high. It's not ambiguous. I think some of the things I've seen more digitally like I've played around with some digital things on iPad. It's crude in a way. I think if you could zoom in and see things probably that would be great but often an installation in a venue, you need a physical thing that you can look at there, especially if multiple people have to sign it off, so it's having that portability and clarity is really important that system still works very well with that even though it evolves extra steps of putting that information back in the system, scanning and all that sort of stuff and it could get lost. It lets people at the other venues observe some change or something different and they can add that to the markup and we can put that back in when it comes back and say this happened. Disadvantages? I think there are a lot of steps you sometimes have to go through. You have to open a lot of windows, dragging things around, just to get one record completed. And you're sitting there waiting a lot of the time, waiting for things to

open. So I find it a little bit slow in that sense. But I think it's got a lot of the adaptability we don't fully take advantage of really, yet. I've gotten used to it, so I guess I like it because I've gotten used to it. There are certain parts of EMu we probably don't use fully because they haven't been set up quite right for us so we just avoid them. Like there are some drop down menus and things for condition reporting, which we should be putting things in because of its searchable fields, but the list of items doesn't include the things I want or the terminology I prefer, I guess, and you can't change it yourself. If you have to go to EMu and say "can you add these things to the list," which I just haven't done, or change these words, which would be an easy thing to do, so I should probably do that. But there are pick lists like that where I wish we had the ability - and I know they're trying to keep it consistent and put some control on it, so I get that, but it just does create a bit of a stumbling block when you want to do something right away and you go "oh, I can't actually edit this myself" so I have to go through EMu and say "can you add" - I don't know if you've looked at EMu or any of those lists or that, but it's under the part of the condition report tab that's not free text, it's the one that has the kind of field search.

EC: I think we've seen that, we saw a lot of EMu at once, so it was a lot to take in.

JC: Yeah, I find that it's hard - if you don't put something in exactly right, it doesn't find anything. I always forget how to do it so it's a wildcard to find part of it, there are certain things like that that I don't search enough that I forget every time and have to ask them again. I have one little cheat sheet but I need to add more things to it. But I like that we have - I've used different systems at a lot of different museums and it's just as good as any of them have been. None of them are like amazing, but it's better than some were. I don't know from the back end if it's good or bad. Other disadvantages, let me think. I do think having to do the whole scanning, that sort of thing, that's a pain in the butt. And certainly not the best use of our time to stand there and have to scan in the hundred reports you've just done. So that would be a disadvantage. If you want a report that's slightly different from the ones we already have, that's, I don't know, months for them to do a new report, to make a new report template and that costs money so they - sometimes some of the ones we use are mostly good but it'd be nice if we had more flexibility

around that, because we can't do them ourselves, again you have to just work with what already exists in those templates for the reports.

EC: Are these EMu templates?

JC: Yeah, but there are one's that we've done, we've made up. And they have been tweaked over time but there would be like condition report, inward loan, outward loan, multiple venues, touring condition report, the different treatment reports which might be like, there's a damage condition report, which is a regular one, which I think is more specific to a damage that may have occurred on display or something. Gillian's done a lot of work the last couple years I think trying to tighten those up a bit and make some improvements but there's still a few things in there that's like "hm why's that one useful?" because you don't know how to use it. And maybe you've look at some of those lists.

EC: Do you often work with the - or how often do you work with the IT or K-EMu staff?

JC: I'd said fairly frequently. I often don't hesitate usually if I have an issue to ask for their help. I lost it momentarily and then I found it again, I have to actually type it up, but I keep a little list of things about EMu as I come across them, because some of them are just really minor and if you don't write it down right away you forget. So I keep this little list, which I should send now because it's got enough things on it, to Carol to say "these are just things I've observed, or what's up with this?" Because it has some errors or flaws like we - it was doing something with dimensions where it was pulling the dimension you were seeing on this one printout - it was pulling one dimension from one area and one from a different area, which one might be a primary support and one might be a secondary support so it was creating things that were completely wrong, which had a big impact because they sent the dimensions to a tour venue and then of course their layout didn't work because they had these wrong dimensions, and that was just a weird error that it was doing. But you don't find those things until you're actually doing it a bit.

But I find them very helpful when - maybe IT is more when we have actual problems with hardware, whereas EMu - the EMu team's quite good.

EC: You've kind of touched on when and how you use EMu, but is there anything else, any more details you'd like to give on that?

JC: I probably use it every day. I use it a lot with the exhibitions, and it might be useful for you to see some of those reports. A particular exhibition will have a number like a module number and then it let us see all the objects they're considering and whether they've been proposed or selected and then we can put in stuff like lighting, it's fine, good to go, whatever it needs. It's really really useful, we use that more than anything else in EMu. But then that links to - it shows any existing condition reports and that sort of stuff. So I use it quite a lot. I don't use it very often on a laptop anymore because I think our laptop is really - they've replaced it but it's still a really really old one, so it's just too - I think if we had a better laptop I probably would possibly use my laptop at the bench a bit more directly, but I just don't know. I've done all the training that they've often, like whenever they've offering training. We just a refresher about images which was really good. I think some of those is good to just keep doing because you just forget if you don't keep doing it every day.

EC: I'm curious to hear what you think are the advantages and disadvantages of EMu.

JC: I guess I was thinking of that with the earlier one too, I just had EMu on my mind for that as opposed to just condition reports. It is fairly - you can put in a lot of different types of information which is good. I think the things I find trouble with are searching sometimes for specific things, it is a little bit slow and you do have a lot of windows open a lot of the time. Inadvertently sometimes I put too many things open at once and I put the wrong information for the wrong thing - it's pretty good though, I don't mind the EMu software. I guess there's not really a link to - we can put a cross reference with a record that's in our record keeping system, Pomatahu, but I don't think people do that

very often I feel like there's a bit of disconnect between it and that system, and maybe that's not a problem, but it might be nice to have more links between those two somehow.

EC: Any additional comments about the condition reporting, digital infrastructure, EMu?

JC: We don't - and this is probably more a resource than time thing - I feel like we don't get any - other than our own quality checking that we're putting in - I don't know if Gillian's ever done a proper say, audit of the quality, type of information being putting it. I feel a bit strongly about that. You might be entering all these records but if they're complete crap they're useless, they're not useful, and I certainly come across old ones where someone hasn't remembered to complete it, they would say it's in progress and they haven't written anything, it's just blank really or they've written stuff and you look at the object and you're like "I don't think they really did that," but anyway there's no - even just things like grammar and spelling. I don't know how good the quality of what we're putting in is, whether someone's gone in and done a random audit of multiple records just to see are these basic components all here and is it a good record or not? I feel like it's kind of a waste of time if what's going in there isn't any good. It's just frustrating. Sometimes when you look at a few of them you're like "hm, what's the point of it?" And if you just run a report and you see someone's done it, it looks like "oh great, that's done" but if you actually really look at it might not be that good a record.

EC: During a typical work week, how many hours do you spend using digital technology in your routine? And this includes laptops, computers, smartphones, anything really.

JC: Quite a few, some weeks actually most of the week I don't get to touch anything. I'd say it's got to be 75% of the time, easily. If you think about it you're doing - even if you're sitting working on the bench, if I'm waiting for something I might still check my email on the phone or whatever, terrible. You're kind of doing things all the time. I work as the lead conservator for one of the bigger exhibitions, ***inaudible***, I have quite

a lot of stuff that's a bit more coordination and administration and going to meetings so there's a lot of that besides say sitting at the bench doing some work. I'd say some weeks it 75% of the time, and I try to block out time where I just stay away from the computer and try to get some work done in the lab.

EC: What aspects do you think have been improved by digital technology?

JC: Oh lots of things definitely. I think about if we had to sit and type up these things or something, back in the day. If people tried to read my handwriting, it'd be awful. I think definitely the condition reporting and documentation in general, I see now the imaging we can do - well people were taking good photographs before but we have other things we can do imaging wise and other types of analysis we can do that relate to digital in the sense the information might end up in a digital file at some point and really enhance what we can do. I think, if I think about the hindered, I think some of the technology that we have which is a bit old and slow and probably verging on obsolete doesn't help that immersing, when things are quite clunky and slow to use and you have to wait for them to work. I think some of the admin aspects of printing and scanning all that, that's definitely a pain. We don't have any admin assistance here for anything actually. In other places I've worked we had like three volunteers just in paper who compiled documentation for and created files and did the basic thing that you could put in your notes, I'm spoiled, spoiled rotten! And also a conservator photographer team who - anyway, we have to do a lot of that stuff that takes away from time we can spend actually in the lab, which definitely is a hindrance I think. So if there were things with new technology that would allow us to spend more time with the objects that would be great.

EC: Do you prefer, when you're doing these condition reports, to use paper and pencil?

JC: Yes, I definitely do. I don't know what it is, I think keeping the bench sort of clean is one thing definitely. And keeping them all together, and just how I can find them is quite good for me that way. But I think it's also to do with I'm doing something with my

hands, it makes sense for me to be writing somehow in my mind, and not typing. I don't know if it's to do with feeling more limber in my fingers or something but I just prefer it. Less likely to have cords dangle up on something and knock something over.

EC: I suppose you are a paper conservator!

JC: Yeah, why not. My handwriting is awful but it helps me - people just don't write anymore so it's quite good just to - this is not my treatment notebook by the way, it's really messy - but it's also if you want to take a little sketch or something, you can note right there really quick. It's definitely quicker than right now, even sitting there with a laptop, it'd be way quicker. But that being said, I definitely have used a laptop, tablet - I have not used a smartphone for condition reporting but I've done the others. Laptop's okay, the tablet I've tried - I wish I could remember the name of the software, what was it? I'll look on my email because they've been sending me updates about it.

EC: Was it a tablet with a stylus?

JC: No. And that would be useful actually, it was just on my iPad at home. I wonder if I put it on here.

EC: If you had a stylus, would that fulfill the same benefits as pen and pencil?

JC: It might, depending how sensitive it is. It's not something - like I haven't used one at home for anything, I'm sure they can be quite sensitive. The sensitivity of being able to be quite detailed and having the image - when you have the overlay it's quite clear if someone comes in and adds something they have to initial it and date it. It's that thing of not being able to alter what's already there so if you're sending it out somebody wouldn't have changed something, we would know if they were adding something new or they could only look at it and that's it. So it's being able to make sure it's a secure record once it goes out. That's one thing that would be important. That would be a reservation I guess, because it would be being able to track - have that audit trail of who made changes

and what changes they were. One thing I don't like about EMu, is say for that survey tab I go in and someone's had it as exhibitable, but I know it actually needs some treatment, I change it to minor treatment. That previous record is just erased, it's gone, there's no history kept of other past - the latest one just overwrites it for that particularly tab. Maybe that's me being pedantic but I feel like I wish I could see back what it went through or the dates that somebody changed it to this or that. So I think that'd be quite important for, especially condition reports going out for loan and tour, that you could lock them down and see what changes - or would it be a completely new record, I don't know. You'd want some kind of timestamp, this date and this time.

EC: What do you like about the current system that's in place?

JC: I guess, in some ways, everything has the ability to be quite good if we know what we're putting in is good, which I do have the worry that some of the things in there, it's not always very good. But obviously we wouldn't have you guys here if we didn't know we needed something better and more improvements on what we do have, because I know it could be better and more flexible, and again what would be great is if you did have something that worked well enough that went right into the system and it's done and then you could - if you still needed hard copy printouts to go with things, just print them out, but it's already in the system so you don't have to go through that other step of putting in back in the system. Because when those things come back, we don't scan them back in but we have to check them and go into EMu and either annotate or put in a new record saying "no changes seen" for all these different venues so there's that bit of additional reporting we have to do that's quite - it doesn't seem like a big deal when it's one or two paintings but when we have like 50 works of paper come back, our volume is quite high compared to some of the other areas where you might only have one or two things. That's not always the case, sometimes they have huge bunches of objects or paintings too, but we need to have multiple numbers, so we spend a lot more time on EMu then some people. Describe my ideal system? I don't know. I think it would be flexible and secure, and able to be very detailed and have enough clarity to actually see what we need to see, whether it's on a board or quite specific level. Adaptable in terms

of being able to use in with different formats and different purposes, so again might be for loan, might be for acquisition, what have you. Something that wasn't - I guess it's a different between, what is it, like open source versus something really proprietary, and I don't know how EMu works around that obviously, that probably is more proprietary, but not having some technology that's going to step us up in a few years where we can't do anything with it because it doesn't talk to anything else. I guess something that we would have confidence in professionally, so we would be quite happy knowing that other people look at it and knowing that it's great, can we adapt that to our thing? There's probably some other things. Fast. I wonder if you could do something with audio, like voice, because sometimes you might have your hands actually full trying to look at something, manipulate it, stop, go, write something down or type something, almost if you could just dictate again too and have that be translated into the report, that could be quite cool.

EC: No one's suggested that yet.

JC: Sometimes if something's really vague you're crawling around under it with a light - often you're doing that with someone else and they might be doing the writing as you're talking. I don't know if that would be a must have but it's something that could be useful for somethings. There might be types of objects that have slightly different requirements than others, like I'm thinking of something like - they'd be less likely to be things that we in conservation worry about, but we don't have a digital, for lack of a better word, time based media conservator I suppose, that might include digital or audio. We have some of that but we don't have anyone in conservation who kind of specialized in that. Have you talked to Adrian Kingston, are you going to be talking to him?

EC: I don't know if we will, but we haven't yet.

JC: He is someone who would create, when we get something more digital, say from an artist, he creates the information around that work in EMu in terms of it as an object from a digital preservation standpoint. But it would interesting to - I think that material should mesh in terms of type of reporting that we're doing with the physical things as well,

because it is another object even though it doesn't have a physical presence except in the computer. I don't know what he captures in terms of the quality of the file. I think he has information on the type of file, how it came in, if it's a CD, or what they've done to it, whether they make a preservation copy. I'm not actually sure. This is much more in the realm of where I used to work where they have a lot more of digital stuff but that stuff should - because it's collection material, fall in line in a way with ours in terms of condition reporting. It might be interesting to chat with him too, he knows a lot about digital types of stuff, so he'd probably be a good person to talk to.

EC: I think we will be actually, we've been trying to talk to as many people as we can.

JC: Yeah, so Adrian Kingston. Say we get, for example, I think we got some photographs - we sometimes get photographs that we just get the digital file and then we can make prints if we get permission with the art, but we retain these images as well, but he's the one that comments about the digital part. So it would be good to talk to him. Maybe one day we'll actually have the time based media conservator people. Do you want me to show you - we can do it another time but I can show you just really briefly some of my reports if you want to see a little?

EC: Sure, that'd be great.

(End of Interview)

Interview with Tijana Cvetkovic and Linda Waters

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD) and Thomas Flannery (TF)

Interviewees: Tijana Cvetkovic (TC) and Linda Waters (LW)

Interview Setting: Interview conducted at painting conservation bench at Tory Street Facility at Te Papa

Date Interview Conducted: 1/19/2016

Time Duration: 58:11 sec

Transcribed by: Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

RB: Do you give consent to have this recorded?

LW: Oh sure!

TC: Yeah.

RB: Great! The recording will not be published, because I hate the sound of my own voice, so.

LW: Me as well.

RB: So our first question – we kind of have this structured as a semi-structured interview and I'm sure you guys have the stuff in front of you but in case we have to quote you for anything we obviously ask you first, but we need to have your full

name so we don't misspell anything or do anything funky, so with that, question 2: what is your name?

TC: Going to try to get the spelling right on this one! Tijana Cvetkovic.

EC: If you don't mind asking, just out of curiosity, where is that name from?

TC: My dad's Serbian.

LW: And I'm Linda Waters. It's nice and straightforward.

RB: Okay, and what department do you work for.

TC: Conservation.

RB: We assumed, but we had to ask.

LW: Here you are, in conservation.

RB: So what is essentially your job title and description? This might get a little lengthy so we'll probably take notes.

LW: We're painting conservators, for both of us. Description? Let me get a document that will show you what we do.

TC: You're making us think!

LW: We're "changing hearts, changing minds, and changing lives." That's what the institution's doing, did you know that? So essentially…yes, we look after paintings physically, and work on them. We provide conservation assessments and advice to inform decisions by other staff around the ongoing wellbeing of paints in the collection.

We carry out remedial treatments of paintings for loans, exhibitions, acquisitions – we give professional advice to the wider community, so that can include liaising with other colleagues but it's also liaising with other institutions, with members of the public individually, with other groups, the iwi and so forth. That probably covers it, do you think? Is that enough information?

RB: Oh yeah, definitely.

LW: Because we do have a spreadsheet.

RB: Thank you for going through the motions, I know –

LW: No, no, that's alright! It's good to get an overall framework. And even though there's ***inaudible*** around it, it is serious.

RB: So, kind of going off of question five, what is your personal role in the conservation process? Kind of the details of the ins and outs of that, what does that look like?

LW: You mean in more specific terms?

RB: Yes, like what is your role in the conservation process. We know that you guys are responsible for paintings and stuff like that – you kind of gave that in your description, but if you were to say it in more specific detail *inaudible* what's a work day? I know that's not a very…

TC: Well it's different every single day, and things will change depending on what we're working on. I mean, there's no one set thing.

LW: So say, for example, we might be examining something with a view for it to be acquired. We might be examining something with a view to treating it. There's those sorts of activities.

TC: We can also be helping people like curators, and historians – other people if they want to know more about an artist's practice and techniques, we can do analysis and study around that.

LW: Or have a discussion with the curator about an artist's technique, so discussions. And the analysis, that's one specific line of activity…so physically taking paints samples, setting them, looking at them under the microscope; those sorts of activities.

TC: Then there's giving advice to people like collection managers and how to store the objects.

LW: What materials to use for storage. Those sorts of things, so we might also search through information about proprietary materials if we're looking for a particular material to do a particular job.

TC: Also transportation, like the best advice for how to transport an artwork.

RB: And do you guys get this – do you get to pick which artifacts you're working on? Who gives you the guidance to do say "this is what we need right now and the artifacts" –

LW: Sort of generated by the exhibition program and the loans program primarily. And then after that, acquisitions.

TC: And there might be special projects for some particular reason.

LW: It's out of our control. I think over the longer term we might get an opportunity for something to focus on over the long term. So it's generated by the program.

RB: This might be a very lament question, do you work with condition reports?

LW: All the time. But just going back to the other one, you mentioned solvent cleaning. That is part of our job. Surface cleaning with acquiesce solutions or other – with organic solvents. Sometimes it's just removing dirt and other times removing ***inaudible***. Adhesives, we work with adhesives, do you want this sort of information?

RB: Yeah, and the goal – what we wanted to know and what we're getting is that the goal is not to restore the object or the artifact to its former glory, it's to present it in its whole state, preserve it almost.

LW: That's right.

RB: And restore it in a sense is getting rid of non-original *inaudible* that isn't integral to the artifact.

LW: And making decisions about what is and isn't with the curators. And all the work we do needs to be reversible, hence the consideration that goes into the selection of what we work with on the paintings.

RB: So kind of a technical question is, where do you work on the condition reports? Do you tend to bring a laptop next to them? Or do you tend to write down physical notes come back to your desk?

TC: I'm old-school, I have pencil and paper and a clipboard. And I go to the artwork. We have one ancient, well we have two ancient laptops here that are used for specific things. And not for making condition reports. We don't have anything at the moment.

LW: And also, I do the same. And what you find is you're physically close to the object and it's about the physical act, like how you do that activity. Paintings are more often than not vertical when you look at them. Sometimes they're horizontal, when you look at them under the microscope. It's suitable to have something in your hand to do that. That's what I find.

TC: Yeah, absolutely. And often we get artworks that are too large to come up here necessarily and arrive and be down the road, so we have to go to them. So we also take our notebooks.

LW: And so, we work off site, in that we work down in the storerooms sometimes to do condition reports. We try and do the more complex ones here, because we have different ways of looking at things and the equipment available here. We do condition reports at galleries that have loaned our works.

TC: We go to dealer galleries and other places that potentially we could acquire. Houses, or all sorts of situations we go into.

RB: So, you kind of touched on this a little bit with the pencil and paper, but when you're creating and editing the condition report, you first go and you're up next up to the object, what's the process of translating that then into the system and how you guys go about that?

LW: Well, I type my notes into EMu, then I print them out as a rough copy and then I use that when I draw – do the overlay, the photographic overlay indicating areas of concern.

RB: So not everything from your notes ends up in the condition report.

LW: The text of the condition report is more general. And this is how I do it. I keep the text fairly general, and if there's something specific that needs to be really drawn – you

need to draw attention to something really specific. And then I put all the detail in the diagram, in the photo overlay.

TC: This is for loans.

LW: For loan, sorry, for loans.

TC: We've got quite a few different condition reports.

LW: That's right.

TC: Depending on what purpose you're doing that for it can be a little bit different. So when they do go on loan we have the overlays.

LW: Have you seen these?

RB: Yes, the almost projector style plastic.

TC: That's so much easier for people to – because it used to be this old system that, for example there was a paint loss here they used to measure it from the bottom and from the left, this many millimeters, and to sit there and try if someone else has gone – this has gone, to say, Auckland Art Gallery, check it to make sure that's still like it is. For them to find that loss they would have to go and measure it physically is a pain in the butt, so to have an image where you can clearly see where things are is just much more user friendly.

LW: And I have to say there's a different culture around the work in each area. What's sort of acceptable – just within the profession and within specialties, we approach things slightly differently, in terms of in painting and the detail in our reports and so on. It' does vary from specialty to specialty. So you can look at these later and you can get copies of these but that's a typical loan report.

TC: And then they can change for example, for something like an acquisition. I don't make an overlay if I'm going to – like if it's a newly acquired painting I'm not going to make an overlay but the photographer will come and take photographs of the work and then I will take my own detailed photos for any kind of treatment or if it needs any details. And then you make a more detailed condition report, and this has information for example, if there's labels on the back of a frame we write exactly what's on the label. Or if there's information that we would never send to someone at a loan institution, if we're just sending them, because we don't even talk about things on the condition and damages.

LW: And the things on the front.

TC: Yeah, we wouldn't talk about these things in detail, that's more for us to keep in our records. So that's a different kind of condition report. But I have two condition reports for this one particular painting, for example. I've got the detailed one once we acquired it. At first it was on loan to us, but it was going to go into an exhibition and it needs a lot of work. So I did a very basic condition report, and then this is called a loan treatment authorization. The painting loaned to us by an outside person, and we wanted permission to be able to treat it before we could put it on display. So I had to do a quick condition report and ask "these are the kind of things we want to do. Can we have the authority to do it?" Completely different to this one, which is much longer. Once we bought it, we didn't need the authority anymore because it was ours. We can just go ahead and do it. Things change a bit.

LW: There's treatment reports, have you gone through those before?

RB: No, that was actually our next question. We know that there's a ton of different areas of the EMu system from talking to Nirmala. We wanted to know what the different processes were for those different reports and how much time those took in relation to each other.

LW: Before we do that, I just want to give you an example of another treatment report for loan that was very heavy on visual documentation. It's a very long work painted on hessian, and it's probably 20, 30, something feet long. And writing about it in detail would just not be a good thing to have to do work with whist it was on loan. So this is all that was written about it. So just a short paragraph. And then we got really high-res photographs taken in sections of all of the panels. And the visual documentation the most important aspect of this. And we talked about having this available digitally to compare with the work on the wall. But to cite it on the hard copy, because it was easier to mark up, and I guess the beauty of a digital image is that you could blow it up to see in great detail the characteristics of what you're looking at. But the other thing too is that we thought this would be a way of keeping a mental order to about where you were on this work because the surface is pretty homogenous. So this is an interesting example of scale affecting how we do the condition report, just to point that out. It's quite varied, and it's on a sort of work-by-work basis.

TC: I think we also have to think that it's not just for our use. If we're sending this to another organization, and if we send a digital thing, do they have the equipment to be able to digitally have that up close next to the artwork to be able to compare and look at it. They might just have a computer at the desk, they might have any kind of tablet. Because you need to be able to look at artwork to compare to the report.

LW: And the other thing is, is having a hard copy image, but knowing that back at the institution, the lender could check with our digital image or we could send them the information digitally, against which to check something they're looking at about which they're unsure.

RB: So it might be a hard question to answer then, just to get a hold of almost – inquiring about the time of each of these reports, I know if can probably vary from work to work. But are there certain reports that take longer than others, kind of what is the general sense of each of these in terms of scale of time, almost like a resource.

LW: Well, first up it takes longer to write one from scratch, to prepare one than it does to check a document. And it does vary enormously. That took days, whereas these might take – perhaps half a day. The whole process of looking and writing and recording took around half a day, for an average size work. Are we overwhelming you?

RB: No, this is good.

TF: How would you define an average size work?

LW: I would say, you know…average.

TC: Like a basic size of a painting.

LW: It's really hard to generalize, even with average.

RB: So, and I know we're going to imperial measurements here, almost size, a couple square feet?

LW: Yeah, so three by four feet…actually that's getting a bit big, what's three feet?

TF: Approximately a meter.

TC: But then it depends on the surface. Some oil paintings are quite straightforward. Then we've worked on other surfaces where the grid like and trying to do an overlay where you're marking and you have to sit there and count every little thing along – that can take so much time to make sure you're marking things in the right place. But also, just to make the ***inaudible***, which the surfaces are so difficult, and depending on which way you shine a torch to look at them you find more scratches and things.

LW: So we take multiple images of the surfaces against which other museums can check because it's too hard to describe and it's too hard to mark on the photo, on the main photo like that. It can take days as well. Often it's the more minimalistic surfaces that present a lot of problems in condition reporting. Because the features are so open to interpretation, and so hard to document.

TC: And quite often the places where we're sending these works, there aren't conservators there who can interpret what we would.

LW: The language is like this technical professional language that other conservators understand, and it's consistent with museums around the world. And it is – so we use a slightly different language to objects, different language to textiles, different language to paper, so there's that. And there's the consistency around that. But then as you said, we have to account for that.

TC: So often then the photograph can be so great for them. It becomes really important.

RB: That sort of leads into our next inquiry of your experience working with the photos and other media in condition reporting, and how you guys in your niche of conservation approach taking the photos, uploading them or editing them, annotating them.

TC: Well, we just recently learned how to upload them. We've got this terrible thing at the moment that especially if we're taking photos for ourselves, mainly for details and treatments and things like that, we take our own images and we store them on our H drive. So we haven't been uploading them anywhere. But if we're getting something like that, that's going to be an overlay that we're making up, the photographers from Te Papa will take those images and often we just ask them to send them to us so we can print them out on photo paper.

LW: So we don't actually have access to high-resolution images and so we have to request them from photography and get them sent to us and then we print them. But sometimes the photos we want to add – sometimes we will add photos like a raking light for information.

TC: Currently the system is very time consuming. And we're not talking about – maybe on a big treatment, we're not talking about putting up five photos, we could be putting up 60, 70 photos on an overall treatment. You can ask the EMu people to bulk upload all these photos connecting to the image, to the object in EMu. But that would just give them all the same information. You would have to eventually change all the details. So it ends up just being easier to do every single photo individually, you can write the description of the photo how you want it.

EC: The photos you have stored on your H drive, if you were to say win the lottery and decide to retire tomorrow, would they not be accessible by other people?

LW: Um, no.

TC: I think they can go on somehow and get them, but if you look back at a lot of old reports that have been upgrading from the old system into EMu, we often don't know where any of the images are for these things.

LW: The other thing you mentioned, access, I think that's an issue too for conservation because other people – I would be reluctant to give access to non-conservators, our photos of treatments and other details because they're taken within context of the treatment. They give us certain information, and other people would not know how to read them or it would be inappropriate that they have access to them. So I don't feel that our condition report photos should be accessible in the way as the general image of the work. That's my view.

RB: Because they misinterpret photos that are strictly for work purposes on your end aren't necessary in terms of exhibitionists or –

LW: That's right. We need to control who have access to those. I think that's really important and other people would probably feel the same way.

TC: Currently we don't have that. Once it gets uploaded into EMu it's there for everyone.

RB: Sort of like Facebook.

TC: And the thing is you can go in and alter and delete things. I think even if you're not the person who uploaded them. Which for me, I don't – I'm pretty sure that's true that you can do that.

RB: We can inquire about that.

TC: It's a good thing to ask, because I had a feeling…

LW: You can inquire as an independent…

RB: Of course. We need to know things like that anyways.

TC: But as not as if people are doing something on purpose, someone could be doing something unintentionally, wipe out something. You know what I mean? That would be good to know.

RB: So, you kind of touched on this a lot but if you have additional comment on the advantages or the disadvantages of the current process that you guys are using.

LW: To create the reports?

RB: Create, edit, anything with photos, just your general – what you like about your current system and what you do not like in terms of documenting your work.

LW: I like drawing directly on the hard copy. I like the flexibility of that, and the ease of it being close to the object. I think it works fairly well, the way we can generate reports in EMu. There's some things between when you're making certain reports, we used to have quite a few problems with depending on if it was touring or if it was a loaned one, or whatever. Pulling up certain information like handling instructions, light levels, and things like that would do different things depending on what type of report you were choosing to print out. And it would be really frustrating because you would have go into all these different EMu tabs and fill in different things to try and get something.

LW: Generate the information that the report would pull together. Are you aware of this report?

RB: Yes.

TC: So you would, for example, have to go into, not into the main catalogue part of the painting, you would have to go into some random thing like into the exhibitions items tab that it's related to, and go into this stupid little tab to write. You're handling notes which had to be exactly the same as what you had in the catalogue notes or it would print something random. Or not print anything. So it's that kind of consistency that wasn't necessarily there. Which was frustrating. With the whole EMu process, some things about it I find annoying. Like for example, if you don't know the number of something and you're trying to search for an artist. If you've got one letter wrong it won't find what you're looking for. So you have to make sure you have everything perfectly written or you won't find anything.

RB: It seemed very specific and if you had to make a report you had to go and fill in every single tab, like even the most generic information. The title, the artist, all this

stuff, even if you were connected to the catalogue you still had to repopulate all these fields that probably could've consistent. But I don't know if you guys have a problem with that, I don't know if it takes a lot of time to do all that.

LW: Well sometimes if you forget to fill in the part, if you've for example written a condition report or treatment report and you've forgotten to write the acquisition number of the object in that certain part, it gets lost. So you'll think "I've saved it, I've closed it," and you go back to find it and be like "where the hell is it?"

LW: And the only way you can search is under your name and the date that you created it. And you have to go through all your records to find it.

RB: How often, or if ever, have you guys worked with the Information Technology staff or the EMu team that's staffed here.

TC: I had, when I started, one set up kind of meeting to go through it, but mainly I learned things from my colleague at the time who showed me things. You obviously miss out on a lot of stuff that way. And then since then it's usually, if you've got questions.

LW: I'm the say, my use has really been – I can't even remember if I had a session…I think I did, but I'm a bit lazy when it comes to this stuff and so I just sort of make do with the little I know and I contact EMu if I'm desperate. But I generally don't tend to approach them.

TC: We recently had a session, as I said, to learn how to upload images into the catalogue.

LW: I have to say, I'm very old school and I'm afraid I duck and weave a bit when it comes to this stuff. Don't publish that in EMu.

TC: I have an old school diary, I don't like putting things into my iPhone.

LW: You know it's very good for your brain, writing. Did you know that?

TC: Yeah it makes you remember.

LW: There's a link.

TC: I can't find mistakes if I write straight onto a computer screen, I can't proof read. I need to print it out and read it.

LW: Same, I thought I was alone in that, it's good to know.

TC: I wrote my thesis with pencil and paper.

LW: But IT staff, I've used the IT staff to help set up stuff for ***inaudible*** I got a new laptop through the project, and a screen, and we worked through what I needed there, and they were fantastic. Will Humphrey and Steve. And the good thing about it was they came up here and got an idea of our requirements by physically being in the space with us. I think that was a very useful thing. There's probably still more room for them to understand the sort of functions we require because it's so particular.

TF: And them coming here to help you set up the laptop, do they usually come here often to help other people out or not often?

LW: No not really, it's usually done remotely. But Steve said it was a very useful experience.

RB: So I guess we can kind of combine 13 and 14 and just kind of – could you describe how often – how you use the system and if you had any training that has helped you

figure out how you should approach it? Or do you learn from your colleagues, and that's kind of how you learn about what's going on?

LW: We use it daily. I use it daily and I've generally learnt from colleagues.

TC: And by trial and error.

RB: So there's not a system, like for training…

TC: There is a training thing that's a short training thing, but it's a little bit often an overload at first, and you get a little handout, but you're not using it so much so it's not until you really start doing your work that you learn how to navigate it properly.

LW: That's really true. And I know EMu staff used to really make themselves available, and maybe they still do on a weekly basis upstairs. I think it's partly demands of the job. The other things you have to attend to in your working day, I feel like I – it's sort of a conflict, putting in the time you need to, to get a good foundation. Using it, versus just sort of crisis management in a way. Does that answer your question?

RB: Yes, definitely.

TC: But we do use it every day and it could be something ***inaudible*** looking up to see where a painting is in an art store so we can find it.

LW: Or checking a loan, the day the loan's going out by using the loan tab.

TC: Looking at past treatment records, past condition reports, historical ones that are in there.

LW: Checking the dimensions, just other things like that.

TC: We often, if something is going out on loan we have to write out comments, or if it's going into exhibition we have to write our comments on whether or not it has to be treated, how it should be displayed and that kind of thing. And that information all gets put in there so everyone can access it. So we do things like that all the time. Same with acquisition, we put all our comments *__inaudible due to power tool noises__*

LW: And then there's documenting our treatments, which you know, you do that spasmodically as you work.

RB: So, you kind of touched on a few of your likes and dislikes but if there's any additional comments on the digital infrastructure here in general, or the condition reporting system, or the software, what you particularly like or dislike.

TC: There's EMu but then there's also Poh Mataahu. But that's new –

LW: And it's not part of this realm. I guess it's related in a way.

TC: Because there is are ***inaudible*** information that's kept in there as well.

LW: Some of these reports, say for loans, will go into Poh Mataahu. Do you know that system?

RB: We haven't gotten briefed on it yet but we've heard about it.

LW: It's sort of the general documentation system for Te Papa generally. So things have to get scanned.

TC: When it's scanned, before the condition reports went out with the paintings to wherever they're going, these would be scanned and kept in the loans folder. So if we ever need to go back and look at things we could look there and see.

LW: There's a lot to do there, it's cumbersome. I don't really have any further comments about it, because as I say I'm a – it's just I use it on a need to basis. I'm sure there's a lot more that I could do and I could become a lot more fluent in it.

RB: In terms of what we mean by digital infrastructure, is it ever frustrating to not have Wi-Fi or mobile – the ability to be mobile with your computer, anything to that effect? We're used to having Wi-Fi everywhere so for us it's been kind of a challenge to be down here.

LW: It doesn't bother me, because I don't work with them.

TC: But if we want to hook up to something, we're limited by where we can plug in.

LW: Oh, that's true, very limited in this space where we can be online within the lab space.

TC: Especially, also, I think it would be more annoying if you were travelling somewhere with objects and you don't have that ability to connect to the digital aspects – if you need to look something up while you're away, you can't. And we can't access EMu remotely.

LW: I don't think so. Well, I haven't tried.

RB: That's helpful. How much time do we have?

FD: Right now it's 4:10.

RB: Oh perfect, so we can probably get through the rest of these. And this next section is kind of broken into more of the technology aspect of the condition reporting and technology and work in general. We were wondering, just in terms of getting some tangible quantitative data, during a typical work week, how many hours would you spend using digital technology in your role here in conservation.

LW: You mean like portable digital technology?

RB: Anything. Phones, computers, scanners. We would consider this kind of, more not digital technology, but anything that has to document it or goes into the Internet, or being able to use any type of…

TC: I use the Internet a lot for references. Scanning just a bit.

LW: Yeah, scanning spasmodic. How many hours a week…it might be half a day.

TC: It might be nothing.

LW: Or it might be nothing. And for example, say, today I was down in the Maori art store and I didn't bring a camera, so someone took photos on their smartphone of the details and sent them to me. Things like that. Occasionally, half a day-ish.

RB: So do you think that any – since it is very limited, the limited time you do spend with it, do you think it has improved your work routine or made it at all more efficient?

LW: The ability to take photographs is really useful. To take details while you're on site is very useful. So that's a great improvement. That amount of information that's on the net, the amount of professional information, I mean that's definitely a plus.

RB: Then the second question is just is there any aspects of technology that you feel would be hindering to your routine. Is there anything you find annoying or inefficient?

LW: I suppose the printing capacity from our computers is limited. Is this on the right track? I'm not sure.

RB: Yeah, and even the operating system not being able to handle bigger jobs is definitely a hindrance.

LW: Well our computers, we can't open Photoshop on them to get super high-resolution as we would like, so we have to do that on the computer in the photography studio. And that is – we also have to use that printer to create these of a decent quality. So that's one thing that doesn't work smoothly.

TC: And we can't actually just put any sort of program that we necessarily want that could be helpful for us unto our computers. IT has to come and download things on. They just did that for you, was it on your laptop?

LW: Yeah, I've got a program written by ***inaudible*** it's a massive program so that requires an independent machine. So I suppose there are limitations –

TC: The time constraints of having people to come and do that for you.

RB: So you kind of already answered this, so creating condition reports, you guys prefer to use paper and pencil?

TC: Yeah.

RB: Because it is more tangible and accessible for you. Would you be comfortable using mobile technologies, almost like – not even just laptops but tablets where you have – it's not the same thing as paper and pencil in terms of material, but tablet, being able to write on the tablet and hold it with you or something to that effect? Do you feel comfortable using that?

LW: Probably, yeah. I guess the thing that concerns me is how one – the ability – so yes, definitely yes, but the ability to, the flexibility of marking things up in the way that we do on these reports is sort of paramount really.

RB: So then that would be kind of your reservations, because that's a follow up question is any reservations you have about utilizing that technology. I know going hundred percent digital isn't always feasible in any situation, because you do have to have some reasonable amount of paper records. If you could take a picture on your iPhone, zoom in on a specific point, put a little fictitious marking on it with some sort of system, is that something –

LW: Oh that's really useful.

TC: But we wouldn't be limited by the ***inaudible***. For example, if we're doing that, I know some people here have spoken before about "all the abrasions will be marked with red, and it'll be this symbol, and it'll be this." But we want to do our own things, because when you're marking over certain color paintings, certain colors won't be so visible. You want to be able to choose every aspect of that yourself.

LW: Yeah that's really important that's it's not a standardized thing, even within paintings you need flexibility about how you approach things and how things are.

RB: So I guess to wrap up, and after we finish with this if you guys have any other questions for us or comments, we just kind of wanted to gather if there's anything outstanding that you absolutely loved about the digital system we have in this area. And then some things you wish you would change about the system. And then, even more broader, if you could have your most perfect condition reporting system, what would that look like?

LW: Well I think flexibility would make a perfect condition reporting system, whether it be hard copy or digital. So flexibility choice about the medium and then within that

flexibility, to manipulate it as you want. Especially the pictorial mapping. It would be perfect, and I know it won't happen, to have the ability to do high-res stuff on our desktops, but I know that's an institutional issue about the way that whole thing works. Yeah, I don't really have too much more to add. I've been working like this for decades so the little hiccups in the system aren't too unbearable.

TC: I think that if we did have something ***inaudible*** that worked, it has to be fast enough, it has to be – you know, if it's something that we going out having to write and do things and it's so slow then that's going to be more of a hindrance than ***inaudible due to background noise***.

LW: Yeah, that's very reasonable. And also, in ***more background noise*** copies of whatever you generate, of a high quality and the color is true. I'm not particularly techy but that's what I have to offer.

TC: Yeah, because we set quite specific things on Photoshop through the color quality that comes out. Otherwise things will come out completely wrong. Not the same color ***inaudible***. They've just changed this printers so these ones – the old ones that we had out there, if you printed two sheets of full color it was jam. It was just useless.

RB: What do you use for high quality image printing? Is this a very – because there's probably multiple printers, one that can multifunction just very basic like printing out a sheet of text. In terms of being able to print high quality photos, what is the available tool, is it just that one printer?

LW: It's the Epson printer out in the photo studio.

TC: So you can use photographic quality paper. It's expensive, you go and get it from the photography shop.

LW: Is it an Inkjet? I'm not sure.

TC: Yeah it's an Inkjet. And we get to file images of photography. They have to put it on the network folder, because they can't be sent by email. So we just go down to the I drive and access them on Photoshop.

RB: Do you know what resolution it is?

TC: I don't know.

LW: By the time it's printed…I don't know. We can walk you through that if you want to see that. I mean, not now, but later. It would be good for you to see that slightly cumbersome process.

TC: It can be really time consuming, you can be sitting there for ages. Because sometimes these images are not cropped properly, so we have to crop them. Then we fit them on to the page size, we write that information about the painting and then ***inaudible***.

LW: Yeah, we'll walk you through it.

RB: And you don't have access to Photoshop currently?

LW: Oh we do only on that computer.

RB: But not on any of your work stations?

LW: No we have Earthenview that just generates some low-res stuff. It's not as –

TC: Which makes it more of a pain if you want to adjust your images to save onto EMu, because sitting at those computers trying to – I use Apple at home. All my products are

Apple. And I find it so much easier to go into iPhotos and put it in really quickly and *__inaudible__*

RB: Would you feel like you would be more comfortable, or have a more efficient workday if you were able to use your primary computer to do – I know the restrictions may be here or there but if you were able to choose the system you were working on and had that flexibility the use a program that you knew more…

TC: Oh definitely, it would be faster on that.

LW: You're private computer?

RB: Like if you had a personal computer.

TC: It's too much of a pain to try to do anything like that. But if I was in a report and something, I'm much quicker on Apple. Especially with images.

LW: I grew up with PCs.

TC: I grew up with PCs too but I was forced unto Apple, and now I love it. At first I was frustrated.

FD: Me too, the right click function was the biggest frustration when I first got a Mac.

RB: Do you guys have anything you want to add?

FD: I'm good.

TF: I don't think there's anything else. At least I don't have anything

RB: Thank you so much, it's really cool to see this type of stuff and we appreciate it so much more knowing that someone spent so many hours making sure that it looks as good as it can, and as original as it can.

(End of Interview)

Interview with Matthew O'Reilly

Interviewers: Rachel Brown (RB) and Thomas Flannery (TF)

Interviewee: Matthew O'Reilly (MO)

Interview Setting: Break room at Tory Street facility at Te Papa

Date Interview Conducted: 1/26/2016

Time Duration: 54:46 sec

Transcribed by: Ethan Coeytaux

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(Start of Interview)

RB: Our first question is do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available.

MO: So the question here?

RB: Is the first one on – does you have the sheet?

MO: Yeah.

RB: So it's just giving consent to use information from the interview –

MO: Yeah, completely.

RB: So we have the general questions, what's your name?

MO: Matthew with two T's, O'Reilly.

RB: Is there an apostrophe?

MO: Capital O, apostrophe, Capital R, e, i, l, l, y.

RB: Irish?

MO: Oh yeah.

RB: You and Tom would get along.

MO: We're already getting along.

RB: What department do you work for?

MO: I actually work for the object support, I'm slightly anomalous, somewhat anomalous, because I don't actually work in conservation territory as well, but it's far more limited in what functions fall in conservation. So I do treatments to picture frames. I'm a framer, frame making and a conservator of frames and in the nature of picture frames due to their function ***inaudible*** they don't exist without the other. They have to perform sort of functions that are about presentation, aiding in the reception of whatever it is they're enclosing, usually an artwork. And because of that, they're ***inaudible due to background noise*** start to degrade more of restoration than conservation. Does that make sense?

RB: Yes.

more background noise

RB: So I guess that kind of answers our fourth question, which is what is your job title and description. You said frame maker and restorer, and kind of supporting

the work – I feel like when we first talked with you, you were talking about the historical references and how different times periods were different types of frames and there different styles that go with different kinds of work and stuff like that. So our next question would be what is your role in the conservation process and what that looks like in terms of what you do.

MO: What I do mostly, as I said before, it's really more about – in terms of conservation itself it's when we decide when a decision is made that we're going to work with an existing frame how I will approach what it done with that and that usually goes – an assessment, there's an assessment process, which, I don't tend to think of condition reporting although in effect that's what it is, but it's an assessment process to see what requires to be done to the frame itself. Sometimes I turn that into something formal if it's quite complex or particularly if the frame exhibits any kind of importance. ***inaudible*** in relation to its status as an object of value or that is integral to the total frame so those things all kind of become part of the process at moment. I would strip it down to the thing ***inaudible*** but they don't have the same rigorous importance as an original framing. Particularly when it's called an artist frame, an artist frame is one that's chosen by the artist or modified by the artist particularly to use by additional paint sometimes actually making the frame itself as much rare, or choosing the frame as a found object because it really suits some aesthetic values that the artist wants to promote about the painting. So it's still ***inaudible*** but it's more closer bound to the future of the work, so those are really kind of sacrosanct and your team to go about the process just as I do as a conservator ***inaudible*** evaluating the condition in a much more rigorous kind of fashion. Because the frame, one of its functions is to serve the painting. Sometimes I evaluate it more on that basis and therefore the implication straightaway that I'm allowing in the possibility for restoration as opposed to pure conservation as well at the beginning of the process. So it's an assessment as well of what is this frame and what is it's relation to the painting, historical, and is what I'm looking at what the artists put there, visually does it store ***inaudible*** the same way, maybe with a bit of patina. How do I think about that patina, what effect is the patina having, to what level do – make take back levels of history or not. As so you need to consider those things. And those

assessments I'm making are less concentrated on the precise details of condition and a measurement of here to there, that's so important in an assessment. Because those build up into histories over time that feed into the museum's understanding of what the objects had done to it by others, and how you can approach it in the future. So for me that's important, when it's an original frame at the most, absolutely if it's an artist frame. They're all so really, if it's an original. The longer it's in the world, the more important that become. A lot of the material in this country and this museum will have is not ancient. There's some quite old, but almost nothing that's quite ancient, you know? Everything we have is modern period, basically modern period. The earliest paintings we have here is one from the 16th century and then ***inaudible*** It's a museum of very new objects and mostly collections that are not about connoisseurship, they're about historical associations, until you get to the modern period, then you get notions of connoisseurship in the collection of what we have. A lot of things end up here serendipitously, they're not chosen by curators, they've arrived in the process of people migrating and passing things, leaving things, family's not caring about them, but wondering if the museum might want them. I think that's common around the world but it's certainly very common in New Zealand. It's people largely, but most people come are not hugely wealthy – base of people who are determined to ***inaudible*** in the world in the country or to their homes. ***inaudible*** It's far more modest. It's not less important to value it anyway, it is their patrimony that we have. Right, I've just diverged a bit, but you can that from that what you will.

RB: So do you ever work with condition reports or is it just mainly assessment.

MO: I do, mostly it's written assessments and what gets into EMu for me tends to be a very generalized statement of a condition report.

RB: Perfect. Do you mainly do them at your desk or by the object?

MO: Mainly by the object.

RB: What is your process of creating and editing those reports? Do you pull up a piece of paper and write down notes while you're looking at it or do you bring a laptop?

MO: I tend to make note. Actually, it's probably a mixture. I will do it both ways. Because there are a few particulars that tend to get recorded, although I can think of instances where the frame is old and considered in its – the nature of its injuries and trauma that have occurred to it over time. And those – if there's going to have extensive ***inaudible*** that actually needs to be recorded because it's less obvious once the restorations are done. Things are often missing off it that need to be replaced and recorded. Again, it's not that many out of the total number. Thinking more a cover in a year, how many works would I be doing that too. It's not actually that many.

RB: So it probably depends on what you're doing but how much time would it take to do one of these kind of reports?

MO: Uh not very long usual. Usually it's a ***inaudible*** thing but probably no more than 2 hours but it could be 2 days of really intensive stuff if you go to those unusual ones.

RB: Do you work a lot of photos or have a need to attach those to the reports?

MO: Less on condition – but actually in association – I see it is a part of a treatment. The notion is more if I'm considering a major treatment – I need to document those things more thoroughly, and that would include images. I do tend to take quite a lot of images. ***inaudible*** so where there's something which I've recorded has been some kind of compromise, then I want to take a photograph of it before anything's happened to it. And I tend to take photographs anyway. As part of the team approach to the artworks when a painting – before a painting in unframed, originally, it's coming into our institution for the first time, we've just acquired a work, those processes should be in place anyway and include the frame, but most often it does. Sometimes I will do work on top of that and record details. I'd like to know the difference – be able to know the difference, tell the

difference of when other people see the difference the way it looked before I did anything to it and the way it looked after I did something to it. And that's really important for everybody. But I'm interested to see.

RB: So what are the advantages and disadvantages of the current system that people use to create their condition reports or any kind of treatment reports?

MO: Which number are we?

RB: Eleven.

MO: I don't have any problems with – I suppose I see it as this is the way it is, I don't consider that it's likely that it could be different so maybe what you're doing is throwing up possibilities that could be different. But I'm reasonably okay – I just sort of accept it as the status quo.

RB: Okay, so the next one – everyone gets different answers for this question, but how often do you work with the IT or the EMu team?

MO: I don't work very much at all with IT but I do work with EMu from time to time. It's a ***inaudible*** thing, just sort of like processes of – like recently my interactions have been about the uploading of images into EMu. I've got large amounts of images which I want to load – I've got loads of images on my H drive which is my personal drive, before we have a more corporate kind of system of electronic management that we've now got in place. Somewhere between 5 and 10 years, I suppose. It's quite short. That's not EMu, but that's the management system for the museum. Infinite information management, which IT is responsible for in a general way. But before we had that we had a Microsoft drive and I just put them in the personal drive because I didn't know yet quite how they were going to be used. So I've got lots of these. And I want them eventually to go into our systems. Whether it's right for EMu or as an historical archive of the frame, or images of frames. I've got actually thousands of those, literally

thousands of those from all of the world which I've taken myself or gotten from various sources. Those things can go to our general ***inaudible*** of the system. I'm getting near to retirement, quite close to it, and I need those things to be attended to, so they need to go – they have to rely on my mind because my mind won't be there eventually and that needs to be passed on to the system so they have the benefit of those things I've accumulated. Largely as a result of my own passion, but I actually think the institution will benefit from having access to those things so they can make comparisons so can say "this frame I've got here, I wonder if something's in file, this bank of photographs that resembles it" and find something more out about it because of that. Because that's the kind of thing. I don't know if that's got anything to do with where you're at. You're in EMu particularly I know, and I don't really see how what I've got there is going to be able to put into EMu.

RB: They were describing EMu as a way to – as a collection management system in general. But I'm almost wondering if you would then try to consider the frames as objects that would be needed to have documented in the management system, just in general as you would know what frame was part of what work at what point.

MO: Yeah that sort of thing I think – if it has a direct association with any – if it is a part of a collection object or is a collection object then that should be in EMu, if it's an image of - I'm quite sure of that. But I've got this archive of things from other museums and places in the world which I've taken a number of, but I don't think that's where EMu is or considered it as being useful to EMu. But it might be something like – for example, images you might find in natural history, natural environment which can be used for comparative ***inaudible*** Like taking a type specimen and all that sort of thing, that could be the kind of relationship that I see being important for a museum to hold, even though they don't have the particular objects they have that type of object in the collection of they have an interest in. That's the kind of thing, it's not an object but it's related to objects that we have and can aid in scholarship or knowledge of collections can be useful in accumulation of knowledge.

RB: How do you personally use EMu, just for the reports?

MO: I use it to write condition reports, I use it to do assessment of works for loan, for acquisition, as you must know we do – when we acquire a work – or when we propose to acquire a work it goes out to relevant people to find out whether that there's a good reason or not to. To counter that, the desire of a curator to have it in a collection. And if you're deadly against it, like for example, if it'll last for 5 minutes, this no point in getting something that will last 5 minutes. It's so ephemeral or so badly damaged and that's what a conservator does. And I'll tend to be slightly on the side of that for frames but my assessment about the significance of the frame is a significant process in making those judgments so if the frame should be in or potentially out of the discussion then I can give that implication to an expert ***inaudible*** in one sense I'm not in the least bit, in any formal sense at all, recognized as a curator of frames but in effect that's the kind of set of behaviors that get set up by people who understand I am the expert. And so people – doesn't mean to say I know everything, I know more than the curators, the art history curators, about the likely authenticity of a frame to a particular period, things like that. I understand those things and tend to be given leeway to call those judgments.

RB: So did you ever complete any training with EMu?

MO: Yeah I went through the stuff just like everybody else.

RB: Just like a basic training?

MO: Yeah I suppose, and when I want to know something else then I go and ask. Which has happened, when I found that I had a bit of time when I was able to ***inaudible*** finally to uploading all the images. How do I do that? I don't really know. ***inaudible*** and then life got so busy and I hadn't done it enough to kind of remember and I went back and then realized look, I've got this listing of one or two particular frames, particular artworks that required a lot of documentation, and hundreds or images that needed to go in. And so I needed to know what is the process of getting batch loading

done. Who do I give it to and what is it supposed to look like, the thing that I give them? So I went through the process of that last year so I now I know what to do there. I think I've practiced that enough now that I think I can come and go from it.

TF: When you spoke with the EMu staff did you go there in person, did you have to email them for help?

MO: I went there in person, I much prefer personally to sit and talk with something because things come up as I'm going, and if I'm writing emails I can do that too but the whole process takes much longer to resolve, the questions don't come up necessarily in a strict sequence that I can predict, they come up by way of response to something. That makes me go "oh, I need to ask that." So it's better if I'm there. If then of course it's not that easy, you walk away and go "why didn't I ask about that" or something else. In general that's why I prefer – Sunita is the person I need to talk to. She's stationed here quite frequently upstairs, when things pop up I see here on the days she's here. I know Carol well personally, but I don't tend to go to her so much from a business point of view.

RB: So do you see any advantages or disadvantages of you using EMu right now?

MO: No. I personally think it's – I really like it. I understand why people complain. The complaint is usually revolves around – it strikes me at least, that's my interpretation – it revolves around its complexity and because it's complex it's hard to understand. But its complexity is the thing that gives it its capacity to cover a lot of things. And it just takes a lot of time. I don't really think – there might be something around that and when computing becomes more intuitive then presumably that will make it quicker. But at the moment that's the state of play. Unless someone tells me otherwise and teaches me "no, that's old fashioned and you can do this" and I'll go "oh, isn't that really easy" and then I'll work with that one. At the moment this one I know about as being a system that can handle a great deal of complexity and because of that it's going to be harder to learn, just

one of those things. I don't know if that's your experience with it or you're sense of it, but that's the way I feel.

RB: We're getting some feedback and we still have a lot – we're getting a training ourselves so we're going to figure it ourselves. It's very interesting to see there are a lot of different perspectives on it, which is definitely interesting and very helpful for us because we're trying to figure out what we want to do.

MO: It's about the system's ability to cross reference things and pull stuff from one place to another and if it's going to that it's going to be quite typical, at least initially. If that's not all you do all day long then it'll take much longer to get to know.

RB: So do you have any other comments on the digital infrastructure of the building, like connectivity or anything like that, or the condition reporting process or even just the software in general.

MO: No, I don't think I really do. Again, I think of the difficulties that I think I hear more ***inaudible*** sitting around this table going "ehhh this and that, K-EMu" but in my head at least, cause I don't have to deal with quite as much as some people because it's a slowly truncated thing that I do with it, and then an objects conservator, or a paintings conservator, or a paper conservator, there's a whole lot of things that relate to exhibitions that I don't do as much of, things like that. So for me it's already this complex that I'm having, I'm not asking it to do a lot of the complexity that's probably required from others. Although, I hear people go – I go "I'll just do something in a simple way." Because I'm not doing as much I can afford to do things which if you did a lot of it would be – the way I'm doing it would be seen as a waste of my time. "Or you can do it this way, that's a lot quicker", and they go "oh that's a good idea." But because I'm not doing it all that often to me I just clunk my way through in a fairly simplistic fashion. Not that I don't want to know, it's just how much can you retain when you're not doing it quite as much? Certainty for somebody who's not a native digital person, I come from an era quite before that, so it's not the way I natively think, so I'm happy to apply myself to

pick up those things that I need but not more than I need. If I don't need it, then why bother putting in the effort. And on the other side of it is I'm probably not noticing things that would be handy to notice. Bit of a tradeoff.

RB: So during a typical work week how many hours would you say you spending using digital technology in your routine at the museum? Digital technology being a personal computer, or cameras, or whatever.

MO: Is that any use of a computer?

RB: Yeah, in terms of your work at the museum.

MO: Actually it's really hard. Sometimes I'm not near it for quite a lot of periods but then my phone's in my pocket and my phone's connected to the system. So I guess I'm using a computer or I'm using the phone, I'm using that. That's more about communications. I will say – what will I say – I think an hour, two hours a day, that's probably as much as I do. There are days where I don't go near it, hardly at all, and there are days when I spend – there are times where I spend several days writing something out. It might be more than that, an hour or two a day, but it's hard to be clear about that.

RB: So what aspect do you think of your work routine have been improved by digital technology?

MO: My work routine? Positive and negative really is –

TF: Which ones are more of the positive side?

MO: Definitely much more positive in my sense, but in a way it's not about – in another sense it's not about positive or negative, it's just different. It's different world that I'm now operating in, and that we all find ourselves operating in unless you happen to be one of those people who – it's the state of affairs that you were born into or that you came

into your life very early. So it's so different, and it's something – a way you need to abide by and I'm certainly happy to because I see a lot of benefits. What are the benefits? Communication is a major one. The potentially for the quality of documentation is much greater, particularly when you conserve – it's much less just about the written word now and much more about all forms of communication, including imagery, images are very important to the modern world and to give an understand of what it is that needs to be known or communicated and images can do a lot of that work really well. And we're slowly learning to do that more and more, socially as well as in a museum context. The graphic world is far more important than it used to be. The word always used to have primacy and something to be believed, but now we believe images just as much and sometimes more than we believe the words used to describe things, because seeing is believing. On that idea, and because cameras are so good, or making a movie about it and document it really well, of course they can lie but they don't – you can usually see where there's a lie. On that basis, communication, documentation.

RB: So what aspects have been hindered by digital technology?

MO: I don't know how much is down to digital technology and how much is down the different management types – ways of managing. Because with the growth of digital has come the modern ways of doing business, doing museum work in which every person does all of their own work. Whereas we used to have somebody, like a secretary, doing that work. But then, what you said, if you're high enough up, but even when I first started at the museum in conservation we had somebody who wasn't full time but she would write all our reports up. We would write our reports in all our various different handwritings and she was great at interpreting it and she would write beautifully set it out, format it out in the days of electric typewriters, but typewriter none the less. And we wouldn't have to spend the time doing that. And I could go ***mimics writing*** and my handwriting, scribbling away and she'd get it right. And you'd always check it. There were people who were absolute masters at doing that, that was her profession. It was her profession to do that and she did it extremely well, and we loved her for it and she saved us a lot of time. You can actually have your head over the object doing things – maybe

that might involve writing. And so there's a lot of that, you hear of people having *__inaudible__* for the past about that. You have to be careful to differentiate between management systems that have come in simultaneously with digital – with the introduction of digital technology. They obviously drive one another, each one drives the other. It's completely clear that they are really like that, that's the way it now is. However, I now have to spend more time, I imagine, than I would have if we never had the digital, because we would have to be driven still by some of the older ways of doing things, I suppose. So I guess you could say that, just include it in the digital. But I personally would try to separate them into strands. Because managers can make decisions about how we do things, and supply us with resources if they have the means to do that. To do it in a different way. I'm one of those people who thinks in terms of – I prefer to go more narrowly and deeper. And a lot of people love to go wide and therefore *__inaudible__* it's a more shallow experience. That's why. Whereas I like to go deep, deep for me is the thing that's really important for me, knowing the object's that I work with. Knowing them the best that I can is giving them as much attention as I can. And you cover as much ground as you can within the given time.

RB: I think you already answered this question, but when you do your condition reporting you prefer pen and pencil, right?

MO: I love my pencil.

RB: Are you more of a handwritten –

MO: I just like writing with a pencil. Actually I like writing with fountain pens.

TF: I like the way it feels, personally.

MO: They're quite beautiful, anyways to answer the question, yes. And why: because I can think through my pencil more readily than I can through my keyboard, because it's native to me, I learned it as a child, and I think that's the real reason. People who the

keyboard is the first tool that they used or close to it, then of course those people have a much greater facility than I have. I can't type without looking at my keyboard, I can't do. Even though I learned the finger placements and all that, I learned that stuff reasonably young because I had a typewriter, but I never did it enough to consolidate it, and I'm constantly clunking the wrong thing. And I'm one of those people who can't stand those bloody red lines underneath, but I see them as being useful. Tells me where to go. But I have to go back – chops off my concentration, my thought, and I have to go back and correct it before I forget or something, I don't know what the reason is. But it is something I notice about myself and it does tend to break up my line of think, sometimes I'll lose it. On the other hand, I do like writing, but I do like the act of writing whether it's on a keyboard. I do like thinking and then putting it down somewhere, whether it's through a keyboard onto a screen or onto a piece of paper. I do like the process and I value the word very highly.

RB: So are you comfortable using mobile technology like laptops and tablets and smartphones?

MO: Yeah I'm very comfortable using them. Doesn't mean to say I'm good at using them, but I'm very comfortable doing it. And I adopt those technologies quite quickly.

RB: Do you have any reservations or comments about using digital technology to do the condition reporting process, making them or editing them?

MO: Well, if it could be done on *__inaudible__* I would see that as being a very very useful possibility. Or a laptop obviously, but I think tablets are just as good in that respect, they're big enough. And you can park it next to the object. I suppose that means in a sense, if you could put things into a series of checkbox answers, or whatever, if you could formulate – if it was possible to formulate things in that way, there's a sufficient degree of clarity in the ability – the problem with that is it's again about complexity, that you might be after. If you want something more complex than I use now, does it fit in this

category, this one, or one of five categories, then you need to start writing in a field especially for a – in terms of efficiency it would be nice to check things off.

RB: What do you like about the current digital system used in the museum and what things do you wish you could change about it?

MO: I don't have anything. No, I really don't, and that's partly because I don't trust myself to know it well enough. I just think it's much more capable than I know and probably will ever know, and that's good, that's how it should be. And there are people who use parts of it that I would never need. So for that reason I suspect that it's perfectly capable. Doesn't mean to say it can't be improved, and that'll be down to you to find out. We are willing to hear it from enough people that there's something wrong there, but I personally don't see it – as I said before its complexity that's probably one of its strong points. And if I need complexity than I have to learn that aspect of the system that increases my ability to grasp the complexities or to communicate the thing that I need to communicate, and what part of the system it needs to be fed into. To learn what those connections are, how they work, how I will then participate in that. Until I need to know, I tend to not bother to know. I like picture frames. You know what I mean? Technology is a tool, and it's a great tool, and I love it for that.

RB: So I guess, you might not have anything to say on the last point, but if you could describe your ideal condition reporting system would it be any different or would it be the same thing?

MO: No, I think my needs are fairly primitive relative to the other people, most of the other people I talk to at least. I'm very happy to declare that, I just don't think – the ways that I require to report the condition of the objects that I work with requires the same degree of complexity, partly because of the nature of them as I explained before is to do with the differences between restoration and conservation. And partly because of the ***inaudible*** note that they have as well, just as a separate aspect of what both things are that I deal with. So yeah. I really think I have a very – simply don't need as much

understand of the need to address it in any complex way. So what would I have to say would be interesting and need to be accommodated but won't be in terms of increased complexity or decreased complexity, I'll just have to grasp what I need to grasp when I need to do. Which I think I'm capable of doing. I've got enough stuff in my head.

RB: That's all we got. If there's any other things you wanted to ask us?

MO: No, not really. I think it's a good thing that we're taking part in what it is that you're doing.

(End of Interview)

Interview with Neil Dixon

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD) and Thomas Flannery (TF)

Interviewee: Neil Dixon (ND)

Interview Setting: Britten Conference Room, Cable Street facility of Te Papa

Date Interview Conducted: 2/1/2016

Time Duration: 15:47 sec

Transcribed by: Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

EC: So our first question is, do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available?

ND: Yup, that's fine.

EC: Alright, thank you. So, question 2: what is your name?

ND: Neil Dixon.

EC: I guess we already knew that one. What is your job title and description?

ND: My job title is Senior Systems Engineer. Description? There probably isn't one, but I basically look after the IT systems at Te Papa.

EC: Can you describe the digital infrastructure of the museum? Such as Wi-Fi, bandwidth, software, Internet.

ND: Where do I start? So Te Papa's got two Internet links. There's a dedicated 50Mb circuit for conferences to use and there's a 250Mb circuit for staff and free Wi-Fi Internet connectivity. Wi-Fi, so Wi-Fi's available in most of the public spaces of the museum. I say most, a lot of the public spaces in the museum. And that is a free public Wi-Fi capability, where people can sign on the Wi-Fi, click on a little disclaimer button that says "I accept," and they can get on the Internet. There isn't really much backend Wi-Fi, so we're looking at getting some out there but at the moment that's not really available. The network itself is a 10 GB backbone switch network, with one gig to distributed nodes around the building and from there one node to the desktop. That's for staff. Although some staff are still running on some gigabyte switch under desks and possible even some 100Mb switches. Just cause there was a bit more growth in IT since they built the building, so there's not quite enough cable to go everywhere. So, that's another reason the Wi-Fi in the back office would be quite useful.

EC: Do you know the infrastructure at the Tory St?

ND: Tory St is very similar, there's actually a 10 GB link to Tory St. So from here to Tory St is 10 GB data fiber that we rent from one of the local fiber shops. Basically we've just got some fiber switches that go through. And again at the other end is 1 GB switch network everywhere. What do you want to know around the digital infrastructure side? Do you want to know server type stuff as well?

EC: That's probably a little more technical than we need.

ND: Fair enough.

EC: Yeah, what you've given us it good thank you. In your opinion, what are the constraints of the digital infrastructure?

ND: From the network side, the hardware has all been replaced in the last year and a half. So that's all brand new HP switches. The constraints around the network are the way it's configured. It was configured as a class B subnet, but it should be multiple class C's instead, so there's a bit of broadcast traffic which is causing issues.

RB: Could you explain what a class B versus class C, I'm just totally –

ND: That's how many nodes you can have on the same segment essentially. A class B is quite large, 65 thousand, something like that. We don't have that many on there, but basically they can all talk to each other and makes a bit of noise when it's broadcasted traffic, so it'd be nice if we could chop that up into smaller chunks.

EC: So, how often do you work with the conservation staff?

ND: Not particularly often. I basically just look after the backend systems, so I look after all the infrastructure, the email, the main controllers, all that sort of stuff. I deal more with the K-EMu team from that point of view. The only reason I'd really deal with conservators is if they had an issue with a desktop machine or an issue with the network, something like that, printing. Wouldn't be very often.

EC: So do they just contact you for troubleshooting?

ND: They go through the service desk, so they ***inaudible***. Phones, or building, or anything.

TF: How often do you get these helpdesk requests?

ND: There's a service desk and you'll be talking to Yu-Yu tomorrow, she deals with service desk and that's more dealing with dealing with the staff. I deal more with the backend service staff and the network. They don't come through to me very often.

EC: What is your understanding of the conservation team and the role that they perform at the museum?

ND: In short, they look after all the interesting stuff. So basically they look after all of the items. Look after them, catalogue them, write up stories on them, put them on display, do research, all that sort of stuff. I don't know to be honest a huge amount about what they do.

EC: For the next question, you obviously know of the EMu software, but what is the extent of your familiarity with it?

ND: I know the basics of how it works, but I don't actually use the software. I look after the backend – the server itself is a Linux box. I don't look after that, that's outsourced. I look after making – I get the***inaudible*** stuff to do things if we need to, like expansion of disks. But I look after the backend SAN for storage, the networking to it, all that sort of stuff. I know how the client works and how it connects through, but I don't know any of the specifics about how to use the K-EMu tool itself. I can do a basic search to test it when I do some changes but that's it.

EC: More than we know. We had a short tutorial on it, and it's a lot of different things –

ND: Yeah it's kind of odd looking when you first start it, you get the little bar, where's the rest of it? So yeah, I don't know a huge amount about the software itself. Just about the basically – I can push out the client and that's it.

EC: So you probably won't have much for this next question, but to the best of your knowledge, how does the conservation team utilize the EMu software?

ND: Couldn't even comment on it.

EC: Okay. So this one also might also be somewhat of an irrelevant question, but what is your opinion on the use of images and other media in condition reports.

ND: I have no opinion.

EC: Do you have any additional comments about the museum's technology?

ND: No, not really. The technology's actually pretty cool on the back end. I don't really use K-EMu or any of that sort of view of how it populates. Because I know that K-EMu also pushes out to the online portals, but I don't really know much about how it works or how fantastic it is. Soft of look after and make things run.

EC: So our final question is what would your ideal system be for the digital infrastructure?

ND: To be honest what we have now is I think reasonably good. We do need to sort out a bit of networking that we have, it would make it a bit quicker. Probably the only main thing would be –so the way we do backups currently is – I do all the K-EMu backups as well, so we do backups onto a disk system here and we replicate to Tory St. And we do tape backups, but it can take a while to do all of those. It'd be nice if it could be faster.

RB: Do you have outsourced backups just in case something goes down here?

ND: No, so we've got the onsite backups, we've got the Tory St backups, and we've got tape backups that get shipped off site. So they hold it at one of the tape storage companies. We don't have any sort of cloud backup, yet. It's I think been looked at.

EC: Is storage ever an issue for backing up?

ND: They store a lot of stuff in K-EMu, but it hasn't been an issue yet. There's quite a big new SAN in the server room so.

EC: Alright, well thank you very much, I think that's everything.

RB: Do you have any questions for us? Because we're trying to basically take what you guys have now and improve it because what we're noticing with the conservation staff is that they're having a lot of trouble with image downloads and annotating files and if – I don't know how familiar you are with Tory St in terms of what it looks like down there on scene, but it's very interesting to see Ethernet cables dangle from the ceiling. And have to have them plug in company laptops to an Ethernet cable in one specific location, and then bring a precious object to that location and bring it back. Because they – I think one of the main workarounds is just Wi-Fi, which I know Will was saying was going to happen, or should happen.

ND: There was a plan to have new Wi-Fi put through the whole both buildings, and it included backend, so back of house Wi-Fi. But that hasn't happened yet. That would be nice. And in theory, if they did that, because of the system we run with VDI, if you had an Android tablet or a iPad, or a PC, any sort of laptop device as long as it's on Wi-Fi you could connect to your VDI desktop and do stuff, wherever you are, as long as you've got coverage available. Walk down and check an item, in theory, on your cellphone. Just click on it and do stuff. I think that would probably make it a bit nicer for some of the staff.

RB: So they would be able to use their personal computers as long as they had access to the virtual client?

ND: I don't know yet if they'd be able to use personal computers, but they would be able to use wireless devices that the company supplied. I don't know if the whole bring your own device has been brought through yet.

RB: I know right now we're working off of our own personal computers on the virtual client.

ND: You've got a token?

RB: Token-thing, yes.

ND: So in theory anyone can do that on the free Wi-Fi. But the free Wi-Fi coverage in Tory St is not great. And even in the conservation labs around here it's not too great. If there was back of house Wi-Fi, then Te Papa owned devices would be able to go on that network and connect directly in, instead of going out. Basically if they're connecting to free Wi-Fi you're going out onto the Internet and then you're coming back in. And that's going to obviously be a bit slow.

RB: So we're connected to the FoH Wi-Fi, that's the front of house one?

ND: Yup. So there's no real difference between the FoH Wi-Fi and the free Wi-Fi.

RB: Except that every 30 minutes you don't have to hit the accept button.

ND: But there's no difference besides that.

RB: So the next stage in development, for at least for digital infrastructure is to kind of open that back of house Wi-Fi.

ND: I would hope so. And basically any device you have, any laptop or surface tablet or android or whatever, would connect straight to VDI, so it would be a lot quicker.

TF: One of the issues that we heard quite a bit from the conservation staff is the uploading of images and the annotation of those images, and the reason why that's a problem is that takes up a lot of memory with the condition reports. That's the

reason why we had the opinion of uses of images and other media in condition reports, but have you heard of any complaints that have arisen from this issue?

ND: Not really. I've heard from some people in the past that image uploads can be a bit slow. Some of the images they're uploading are quite large. I think some of the photography guys downstairs are uploading batches of 250Mb images, it might be 300 of them at a time and that pushes them all up so, so that's going to be a wee bit slow. From a conservator's point of view, using VDI and doing this stuff in K-EMu, I haven't personally heard of any complaints.

RB: Well a lot of their issues also revolve around access to high resolution images. Which is a different type of problem. I know Will was saying sometimes – the week before Christmas it was like 3 GB a day of data and storage.

ND: We just assigned another couple of terabytes of space to the K-EMu server for basically uploaded images. The photography teams keeps taking pictures and taking pictures, and they're big ones.

RB: We've seen a few that were very hi-res and I was like "oh, I've never*inaudible*"

ND: They stick it up there and I guess lots of people look at it, that's the theory. Do you guys have anything else?

EC: I'm all set.

TF: Nope, asked everything we need.

RB: Thank you for your time.

EC: We very much appreciate it.

(End of Interview)

Interview with Phillipa Durkin

Interviewers: Frank DeGiacomo (FD) and Thomas Flannery (TF)

Interviewee: Phillipa Durkin (PD)

Interview Setting: Interview conducted in Phillipa's office at the Cable Street Facility at Te Papa

Date Interview Conducted: 1/22/2016

Time Duration: 26:48 sec

Transcribed by: Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

PD: Things cause it's just easier for taking notes. Ok, I'll try to speak clearly.

FD: Do you have voice memos? (addressing Thomas)

TF: I should. Hang on, oh there it is. Got it.

PD: Ok, good

TF: Can't remember...

PD: Ok, right. Well, I am a paper conservator here at Te Papa, so my role is to look after works on paper and where I come into contact with doing...needing condition reports is for loans, outgoing, and sometimes incoming. Sometimes objects will come to us and they haven't...they don't come with one of these (shows a condition report), so I will generate a Te Papa condition report for it to cover ourselves and I'll take photos and

document it and put it under a temporary accession number, oh...no just a temporary number on the computer that's to cover ourselves, but on the whole most institutes will give us something similar to this. I mean you have probably seen quite a few of these in the last week.

FD: Yeah, we've seen ones that are really small, some that are really big.

PD: Yeah, yeah. These are what I produce for outgoing loans and touring shows. We don't tend to generate this piece of paperwork for our own objects in our own exhibitions, but if something has changed then we'll treat it and document it, so this is an example of what I do. I'll take...I'll get a photograph of it, a good photograph of the print and drawing and then I will just generate this (shows an annotated image), which is all you can see there. It's pretty generic. Well these are framed works. I don't know...have you spoken to Jenny, my colleague? Cause she would've given you, probably the similar thing, so I document the frame, the matte, whether there's any scratches on the glazing...the backing. I'll explain how it's…so that you know we can tell if anything's sort of interfered with the frame and then I'll just scribe the work on paper and it's not like a technical description. It's just a visual understanding of what it looks like if there's any original marks or anomalies that they haven't created. I mean it's a legal document just to prove that we are giving them this print, they received it in good condition, they look after it, they gave it back to us in good condition, and it's like a legal document, so that's an example of what I do. This is recently returned, so I've checked them all and I've signed them off.

FD: So, when you check the artifact or object do you take notes on a piece of paper when you are out there with the object then you come back and do it on a computer or do you have some sort of mobile device where you do it all in one sitting?

PD: No, I'm quite old school. I'll jot it all down into a notebook. Sometimes if I got the crates nearby I can do it straight into the computer. If I have a crate nearby I'll lift it out of the crate and I'll sit here and put it in. On the whole, sometimes they are not near my

computer, so I will make notes, and then I'll generate them, so yeah it's like double handling I suppose, and if I did have a laptop, I could probably cut out the note taking stage and just put it straight in.

FD: If you did have a laptop, so you don't have a laptop?

PD: I do...we do have a laptop. I probably only used it once or twice to do condition reporting. I tend to just revert to a quick notebook, jotting notes.

FD: So, the department you work for..is it loans? Is that the official title of the department?

PD: Yeah well...I'm a conservator. I do work on them. It's just that's part of my job, which is to condition report items that have been requested by other institutes and we send them to the other institute and that's the whole point is this proves what condition it's in that we've sent it and it's like an insurance document.

FD: Ok, I was just...you take loans in, you do loans out, you do conditioning. I was wondering if there was a fancier title or something.

PD: No, just loans. Loans and touring. There are actually two different departments, but there you go.

FD: What is your role in the conservation process?

PD: Is it purely in regard to condition reporting items or my role overall?

FD: I think role overall would be better.

PD: Ok, works on paper. I specialize in prints, touring's, and photographs. I will treat as in conserve objects and that can be anything from a full treatment or maybe minimal,

small amounts of treatment getting them ready for exhibition, assessing and survey work to keep an eye on the stage of the collection and like I've mentioned treatment, preparation, and condition reporting of outgoing loans and outgoing touring shows and I get items ready for our exhibitions and when we're not doing all that we do elective collection maintenance, which means we can work on things that aren't necessarily earmarked for an exhibition but because we've treated them and they're now ready, they might be called off, so yeah.

FD: How long does it take you to create...when you have the crate beside you and you are doing the condition report...how long does it usually take you to do? Does it vary from object to object?

PD: It can do because some objects are quite large and have a lot wrong with them and you note everything, so say for example I've had really large photographs that are two meters by a meter and 15 like really big. I've had to you know...there's lists of what's wrong with it. These are quite small they are about 8 4, so they're not overly, I'd say 20 min. Looking at it with a torch assessing it and jotting it into the computer, that's if I had my computer here. 20 min on average

FD: If you had to do the paper and then put it into the computer would that be longer?

PD: Yeah it would be a bit longer, 30 min, but then I've also got to generate the photograph and then stick the overlay on it and then write on it, so that's also another stage, so maybe half an hour per image.

FD: How many do you usually do a day?

PD: It varies. I don't do them every day, so for example this is quite a big one because I think there's forty seven works went out and then they came back in, so I could probably I think these took me two or three days to put together. I think the 47. I did them all in

one go over three or four days because the idea is you do them just before they leave. The crate is sealed and off they go, so that you prove it left Te Papa's hands in a good condition and then the receiving institute opens them and checks them and goes yes, nothing's happened to them. They look after them and then they repeat the process. It's like a legal document.

FD: Again, this with the smaller photos?

PD: Yes, photos like I tend to deal with the framed works. See mine is quite straightforward. They tend to be crated, framed, nice and straight forward. My works go out framed.

FD: Do you like doing the overlay for the condition report?

PD: I do at the moment. I'm liking this process because I feel there isn't anything as good yet. I've seen electronically generated condition reports and they seem very vague. They're either a circle or an arrow. They're not specific enough. I would use it if it was more precise. The ones I've seen I feel are not quite detailed enough.

FD: You scan the photograph onto the computer. Would you like the option of maybe having some sort of technology where you can write your notes and have them automatically uploaded or something like that?

PD: Yes, I would use that. I'd use a tablet and be able to draw on my drawing and then print it out. I'd happily do that. It's just that I suppose you right that this is very old school, writing it on an overlay, but if I could be perhaps given a tablet or phone that allows me to scribble on my drawing. I would be happy to print that out.

TF: When you perform the layovers with the plastic and the annotations, can you describe how you create these photos, how you annotate them, how you put them onto the computer, and put them into the report? We've heard from other

conservators that placing the photos onto a report can sometimes be time consuming.

PD: Yeah it is time consuming. For this lot, I was there all afternoon just doing the taping and then the drawing. It does take a while. It is time consuming and then now that these have come back and I've signed them off. I have the unenviable task of scanning them all into the computer. I've got to scan all these, so I'm going to be standing there for quite some time.
I might have to do it in sections because that is a lot of standing next to the photocopier.

FD: What are some of the advantages and disadvantages that you have with scanning and creating these reports?

PD: I think that it is very time consuming to create the image with the overlay that is time consuming and it is time consuming that I then have to make this an official document by scanning it into the computer, so if that was already computer generated, you could just put them together or you probably wouldn't have to then scan all this in together. It only started a couple of years ago, we used to just give the hard copies to the loans people and they used to just hold, but now we have to scan them in. It's added to the task of condition reporting.

TF: What about any advantages to this process?

PD: The only advantage I like is I can be as detailed as I need to be with these. I would need training on Photoshop or whatever you use to, but I'm sure that will be fine.

FD: How often do you work with the IT staff and EMu staff? Can you describe your working relationship with them?

PD: Yes, I always really appreciate EMu help because I sometimes go in and preempt needing new knowledge and going ask them. I find them very accessible and very

helpful and IT as well whenever I need help I'll do it. Although my role is more hands on, I probably wouldn't need them that often, but they are very accessible when I do need them.

FD: If you need help you'll email them and they'll come help you?

PD: Yup or I'll make an appointment or I will go to one of their clinics because they usually have a set time when you can go and ask them questions.
They'll be in a room on Tory St. on a Tuesday afternoon and you can go and ask them stuff and get a little lesson on something. I went one day just to refresh myself on how to add photos to the database because I don't do it enough and then you forget how to do it so you got to go do it again.

FD: By the database you mean EMu?

PD: Yes, adding photos to the reports

FD: Can you describe when and how you use EMu?

PD: Yeah I use EMu a lot as it is part of my work. I'm either putting a treatment report on to it, condition report on to it, survey information when I've done surveys, condition reports, outgoing, loans, touring, incoming, my treatment reports, survey, and acquisitions, updating my implications for acquisitions, so I do put a lot of information into EMu. I try to keep that up and add photos to my reports

FD: Before you started using EMu, did you get any training on EMu?

PD: Yeah, we had those full workshops. I think it was a whole day or it might have been even been two days. Yeah I'm sure. Before we changed over to EMu we had a lot of training and I find them… I'm not as aufe as some people are. Some people drive EMu

like a Ferrari. I mean I wish I did, but I know enough about it do my work. I don't mind going and seeing EMu for help if I don't know how to do something so it's fine.

FD: What the advantages and disadvantages of KE EMu?

PD: I don't know about the disadvantages. I think it's pretty looked into drop down suggestions when you've got condition and it's got drop downs and you can't write in what you want to write in, but that is because they want consistency of information that which I do understand. For me, I don't think it's any less a disadvantage to any other database. I find it quite good. Actually I find it better than Vernan. I find Vernan very difficult.

FD: Was Vernan the old system?

PD: No, Vernan was one that I had used in Christchurch. No, we had one called Kahoee. I don't know where that generated from. I don't think it was an international one. I think it was probably a small one. Advantages (going back to EMu)…I like being able to find information. Searching. I probably could do with a bit more help on how to improve my searching abilities, but that's just me not EMu.

FD: Do you have any additional comments…what?

PD: Condition Reporting System. For me for generating these ones it's fine but then I have to scan the whole lot back in. But if there was an improvement, I guess it would be to attach the photo that's been drawn on like there's an app for that.

FD: Right, or possibly you can scan the photo or have someone take a photo and it's automatically uploaded onto your tablet device…

PD: …and then draw on it. That would be nice and then it's there and then you attach it to the file that would be nice.

FD: No additional comments on the digital infrastructure or KE EMu?

PD: I'm afraid I wouldn't be able to comment. I'm not an IT person. I struggle with (laughs).

FD: On average how many hours do you spend using digital technology in your routine would you say?

PD: I'd say a mix. It's very mixed. It's very varied. I'd say probably maybe thirty percent by week? Sometimes fifty percent if I'm doing survey and adding more information.

FD: Fifty percent of the work day?

PD: No it varies so much because for example I've spent the last two days working on the taupo and I'm going to spend the next two days, so I haven't been on my computer, but then I can do survey and spend a whole day on my computer, so it's very varied.

TF: Since you've been working at Te Papa, has your work routine been improved by digital technology?

PD: Oh yeah I'd say so, because the whole advent of digital photography. Because I used to have to take slides before treatment, wait to get them processed, and get them back before I could begin my treatment to make sure I did have a good before treatment photo of it. Now I just bash off twenty photos, download them, check them, and go back and do more. A digital camera has really improved how I do my treatment reports because I can begin them straight away. The photos there in the computer I can send them to somebody aw yeah that's lovely I love that. What has it hindered? I feel some of the processes take a long time like uploading photos onto that. There's so many aspects of

that and I think because KE EMu is information hungry you spend a lot of time adding the same information. You have to keep doing that to just add to the database.

TF: When you say trying to upload photos and scan it in, does the computer want to know what's the title of this photo? What file you want to put it in?, etc?

PD: Yeah all of that and then there's a certain way of attaching it to my treatment report through EMu and it's about I don't know…it's about ten steps. You just start to lose the will to live after about the twentieth photo (laughs) and I have a backlog I must get on with it.

FD: (laughs) When you are creating a condition reports, you do prefer paper and pencil? Why?

PD: Yeah and why? I guess I'm just used to using a notebook then I've got it to check back on. I just use a notebook. It's probably my age.

FD: Are you comfortable using mobile technology, so say like a laptop, an electronic tablet, a smartphone, or any type of app when you are doing condition reports?

PD: I would be. I would be fine. I'd be quite happy to move to that.

FD: But it just has to be as specific and accurate as you preferred

PD: If I can draw on the photograph with my own scribbles that's what I'm after not the generic shapes that some programs give you.

FD: Do you have any reservations or comments about using mobile technology?

PD: No it's more. I'm not technically minded, but I pick it up if I'm taught it but I'm not naturally sort of a geeky type. I don't take to it quite easily. I catch on if I have full training.

FD: In the museum, what are some things you wish you could change about the digital system? Besides I know you already mentioned previously before the uploading the photos.

PD: Uploading the photos takes so long. I wish you could just drop and drag and add it in that way, nice and quick. I'd be able to get things done a lot quicker, but no. It's just KE EMu information hungry and you got to fill in lots of information just to update say one thing, but I do understand the background to that. We're a museum and documentation is important.

FD: With learning all this new stuff in mind, could you describe your ideal condition reporting system?

PD: I suppose it would be really nice to able to have the laptop or the electronic device. Be able to go to the object and do it and like you said upload a photo onto the program that allows you to draw on it and then to be able to attach that the document and there it's done and it's a legal document all nicely sewn up. Some sort of way of annotating the photograph in the computer would be really cool instead of the time consuming overlays and colored pens and then also having to scan them at the end of the day when the process is all finished.

FD: Seems like a pretty good system to me.

PD: Well that one, yeah.

FD: Well yeah just get everything goes boom, boom, boom, all done.

PD: In the computer all ready that would be really good, yeah. I think Nirmala was suggesting or somebody was suggesting then that tablet goes with the exhibition, so that there's not even paper generated.

FD: So the tablet could go with the condition reports when they go on loan

PD: Well not even paper ones. The person just has a…

FD: So just have a tablet for each object I guess…

PD: or the whole show

FD: the whole show, right

PD: Or a desk or whatever or whatever you store it on. It doesn't have to be produced with paper. It can be downloaded and all that kind of stuff. So you bypass doing all this even (the paper form of condition report) Save trees.

FD: Save time too

PD: Yeah save time, so you just hand that how's it stored…what are these called? USB things?

FD: Yeah, a USB

Interviewer: Yeah, not necessarily a tablet go with it, but a USB.

FD: Well I think that is all the questions we have for now. If we have any more questions is it ok if we email you?

PD: Oh yes certainly.

(End of Interview)

Interview with Robert Slendon

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD), and Thomas Flannery (TF)

Interviewee: Robert Slendon (RS)

Interview Setting: Interview conducted at the object conservator's desk at Tory Street facility at Te Papa

Date Interview Conducted: 1/26/2016

Time Duration: 53:21 sec

Transcribed by: Thomas Flannery and Ethan Coeytaux

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

RB: What is your name?

RS: My name is Robert Slendon.

RB: What department do you work for?

RS: I work in conservation, Collections Services, Te Papa National Museum of New Zealand.

RB: What is your job title and description?

RS: Conservator in History and Natural Environment. I am an object conservator.

RB: What is your role in the conservation process? Please be as detailed as possible.

RS: My role in the conservation process is that I'm involved in all aspects of the conservation process. That is exhibition development, touring exhibition, inquiries from the public, national, international, remedial conservation treatments, working with interns, training, outreach work as well, and research as well.

RB: That's quite a lot to juggle.

RS: It is quite a bit to juggle. I mean that's what we all kind of do here.

RB: Do you work with condition reports?

RS: Yes, absolutely. We create condition reports, write them, do condition reports for internal work, and also external work as well. If I am working on a touring show that is coming in, so either a venue or a third party, I'll be working with their condition reports. Updating is required.

RB: Can you describe the process of creating and editing the condition report?

RS: It's variable depending on what they're for. If it's an internal one, for just Te Papa or if an object is damaged or if I'm working on it for any particular reason, it'll be through the KE EMu process using the central databases; and I'll just update as required. If it's a touring show, I do that a lot. I spend more … (something about whale touring show). With that touring show, I generated condition reports, other conservators make condition reports, worked with collection managers and Te Papa staff, and also the EMu staff, undertaking condition checks; and people will write observations or changes of condition on those reports. Now it's all paper based, which is not ideal. So editing process for that is unfortunately handwritten. I will be updating the ones on KE EMu when I get the hard copies back, which we're going to go through the process now of having them scanned and sent back over. And I will update, edit and generate another set that will then go out

as a fresh 2016 set because the reports are too thick and too difficult to actually work with.

Also the images on them have faded, which is not ideal also. We've got large specimens, for example, there's a show on marine mammals and one of them is 50 feet long. Having a condition report of a 50 foot long object is not that useful. So we're wanting to work out a way of how do we have those sweep of images, and we have laptops and tablets, but a sweep of images which are very easy for people to scroll down to look at changes in condition and update any changes in condition, and have first, second, third generation of images depending on what …

RB: I have a question from what you were saying before about objects that tour, that are coming in. So you edit those reports for that institution but I know we had interviewed Carol a while ago and they said any acquisition, even if it's being considered, it has a condition report in EMu and it's found in the catalogue. So everything that's from a touring exhibition that's from another institution, do those also have condition reports that are in EMu?

RS: No that is strictly their material. I'm thinking of the DreamWorks, which is a show at the museum and they have various objects there that I will be doing some work on because they're damaged. So one way of approaching it would be basically noting the damage, treatment undertaken by me, please refer to condition report, which I will generate. Now for the DreamWorks, we've got temporary TMP numbers, which are temporary numbers, which are on EMu which relate to the DreamWorks project, which I will then prepare a hard copy that then goes in the folder for the touring. That is also emailed to the touring manager who will then incorporate that into their database if it's compatible. If it's not, we'll just do a PDF file that we can input with what we need to put in. So that's what we'll do for that particular situation. Now it all depends with what infrastructure they've got as well and issues of compatibility. There's not a point in me sending something that just sits there and can't be used. So that's why sometimes I'll do hardcopies, which can also be scanned as well. So it depends on what form they want. But normally a hard copy will be sent with the reports because for me, as a conservator,

when that object comes on tour, I'll be giving a hard copy of that or a report that is a hard copy …

RB: I know it's kind of hard depending of the object, but could you give a ballpark estimate of how long it takes to create or edit when you come back to an object? How long does that take in the reporting process?

RS: Again, it does vary but say for the DreamWorks. When the DreamWorks show came in, we were doing our condition checks against the reports. Now, it could take five minutes per object, or it could take twenty minutes per object. It depends on the size of it. So if it's an eight foot print in a frame and there's minimal damage already, scanning and seeing if there are any changes will take maybe five to ten minutes. Not very long. If it's a large, modern, contemporary artwork, it could take days, it could take hours. It's that thing of seeing what is there, being observant, and then reporting observations. Now, the question about touring reports are also are we doing condition checks or are we seeing has the condition changed. We are more interested in has the condition changed. And this is something the whale show has really shown me because whale skeletons will have different colors and cracks, they'll have knife marks, and they'll have all sorts of things and we'll look at the object and say, 'Okay, this condition hasn't changed.' But for someone who's never seen it before, it's in terrible condition. It's stable, it hasn't changed and that's what I'm interested in.

So it could take a while. The time for creating a report for an object on internal exhibition, again, depends on the artifact. If it's a relatively simple construction such as a ceramic, am I going to have any scratches, any chips, any losses, or am I only interested in if it's stable. It also depends on what time is allowed for us to do it. We can get very busy in this lab so a job that may take a recent graduate five hours, we may only have ten minutes to do it. So it depends what you're doing. And if that be it, we may just take a bunch of really good images ***inaudible*** and do some notes that talk with the image, which another person may come in five years later and look at that report, that they would at least have that image. And that's high res[olution]. Sometimes there's a means that's far more important than writing.

RB: How much time does it take to create a report for an object on tour?

RS: Depends on what we're touring, if it's an incoming tour or an outgoing tour.

RB: On loan?

RS: On loan, same thing as well.

RB: Under treatment?

RS: They tend to be a little more involved than just a condition report because it'll say this is the condition, this is the treatment, this is what we did, this is why we did it, investigation maybe, analysis of materials, we may have to come up with treatment options, we may have to do a few tests for things, so that will take days at a time. And that's okay.

RB: Newly acquired objects?

RS: As they come through we'll do condition reports. They could be a two liner saying the object is mechanically and chemically stable or it may be a lot more than that depending on what the time allowed is ***inaudible***.

RB: Departing objects?

RS: If it's a touring show it's usually has the condition changed while it's been under the care of Te Papa. Yes? No? Yes, these are the issues with it. Do we do treatments, yes, no. And then that could take, coming in for example the DreamWorks, five to ten minutes, five to ten minutes doing the checkout. If we need to do treatment, it could be a couple of hours depending on what the damage is. So it's all variable.

RB: How often does Te Papa look to acquire objects that you know isn't fit for going on display?

RS: All the time. Just because we don't necessarily collect just to go on display. We've got the natural environment collection, which is like a biological library. So a majority of that material will never go on display, it is a reference collection. So you have your reference collections and they're there for scientific research. An example would be a collection item of an albatross that was collected in the 60s from a fishing ground. And, they were caught, they were preserved, people are now sampling albatross ***inaudible*** and they can see from the analysis in their feathers what types of food they are eating. So what is the impact on the fisheries being over there. That's why we have those collections and they are not for display.
Also, we have objects that are … ***inaudible*.** That is the animal that describes ***inaudible*** its feces … ***inaudible*.**
So, I will do condition checks for those objects that come into the collection

RB: And if you have these objects that are just acquired or for research purposes, how often do you go back to check on them?

RS: Well I don't because I have got about two and a half million objects. So I don't. So we tend that to our collection management staff, otherwise we're responsible for the day to day. Almost like a care management of those collections. Now I won't work with the objects but I'll go into the collections storage and do cycles, and circle around and check on them. I tend to only get involved when the seniors ***inaudible*** go, 'hey, we have a problem with this.' And if that happens then yes, we will start to do documentations on them, which is all on KE EMu.

RB: I know you've mentioned a little bit before but what is your experience with working with photos or other kinds of digital media? How do you go about the current process with creating them, annotating them, and then attaching them?

RS: So, it's variable depending on the situation. The ideal situation is that we would generate a condition report on EMu, and that's the main one, and we would take images and then upload them to EMu and then go and annotate them as well.
That's not always possible because of time and also the system in EMu I find very clunky to use. Sometimes what I'll do is just print an image out and write directly onto it and scan that, convert to PDF, and load them up. Otherwise, I'm just loading them up onto a memory stick and then they go and travel. So you may get a hard copy, which has ***inaudible*** so EMu, if there's a problem***inaudible***
For the whales show, as an example, we've got hardcopies but there's also a couple of memory sticks that have about a thousand images on them. There's 120 objects with about ten images. Some have more, some have less. And when we're doing condition checks I'll load the images so people can actually look at those images. And that'll solve the problem of photos that get lost, photos that fade, or photos that get so badly annotated that they're just junk. That's also dependent on who's doing that work and how proficient they are and comfortable with that system.
I would love to have a system that is basically a digital device that you bring it up, change whatever you need to change, and save that into a folder for the object; and you know that it's dated, and you know you have a whole series of generations of them. One, because every time we go to a venue, we need to do condition checks. So, inward coming condition check, outward going condition check, and we're up to our eleventh venue so there are twenty-two of those and we have got about five years to go. So by the time everything comes back here, there's a lot of documentation. There are advantages to hardcopies, people have comfort in using paper work, as opposed to where everything is kept on a memory stick. There's, of course, issues of obsolescence, hardware and software dies, corruption, loss of resolution as you upgrade, and there's issues of migration, ***inaudible***

RB: Have you ever worked with IT (information technology) or the EMu staff?

RS: I have over the years. They've had a lot of change in those departments. But EMu staff, yes definitely. Working relationship with them seems to be quite reasonable,

they've always been approachable, and they understand that we're their clients. Which is great, not in a nasty way but they're a service based providers and that's fine and that's why they've been employed. There are aspects of EMu that they will actively try and change for us but sometimes people and people and what I want to get across is not necessarily what people hear. And sometimes people will come up and say, 'This is what you need because this is the product I've been trained in.' But I'm going, 'I would actually like a product that does all this.' 'Oh I don't know about that because a product like that doesn't exist.'

RB: Do you go to them if something isn't working or if you say, 'I have an idea on how to improve this?'

RS: Sometimes, yes. Or a questions regarding how do I do this. Usually simple things like how do you upload images, how do we annotate images, or how do I filter; just basic stuff. And that's usually just a phone call.

RB: When you call them for help, do you email them and they come straight away or do they make an appointment for you to come see them?

RS: That depends. There's an official way of doing it and an unofficial way. The official way is we'll email a request and they'll schedule a meeting. Sometime, they'll say, 'We're up here, you're down there. Why don't you just spend five minutes, find a desk somewhere and we'll log on and do it? The official way is to send a request and that's fine. Sometimes when you're busy or you need to have something now, sometimes that doesn't work. However, nine times out of ten, that's not an issue. And you got to understand that there's only a couple of them.

RB: Do you talk to the IT staff a lot? Not just the EMu staff but the people responsible for the actual network.

RS: Occasionally, however my experience with them has been not the best of times. I'll be overseas going, 'I can't get into my email, I can't do this, what do I do?' and I'll get a reply that says to email the Helpdesk.

That's a personality issue, however. The people from the … staff are a lot more responsible and outgoing. They are more of a service provider. But do they understand the business that I'm in? Do they understand what I need, what I need as a conservator? Probably not because they've probably haven't worked in a museum before or ever worked with conservators or collections managers. So what I need is probably quite a different thing and why I need it may not be that important to them. So then I'm understanding what I need is my business as opposed to their business. We could work on communication there.

But in the last couple of months, people have been showing up going, 'What can we do for you?' We've always wanted to be able to take our laptops around in this lab without having to tap into wires. That hasn't changed yet. But until a few months ago, we went from, 'This is the way it is, this is not possible to make the building wireless,' but apparently it is very easy to make it wireless. And that just comes down to who was on staff. So there's a bit of that.

RB: Do you know what the time frame is for shifting to Wi-Fi?

RS: Who knows? It's possible, whether or not it does happen is another thing. So people have been investigating for us. This building does have a lot of metal in it and we do have a lot of cement walls so there is a problem to solve on getting through especially with security data and all of that. Another thing is I don't want to be … ***inaudible***. It's pretty frustrating. …***inaudible*.** But in the ideal world I would really like just to grab a laptop or a tablet, jump onto a collections store, get online, get onto a database, and go, 'Okay this is what I'm looking for,' as opposed to having to drag a blue cable behind me, and get the artifact moved to where I am because we'd really like to minimize the movement of any of the artifacts. That's all about object safety.

RB: So can you describe how and when you use EMu on a daily basis? How much time do you want to spend with it?

RS: As much as is required, I've been away for the last week or so. So I'm coming back to an avalanche of emails which I'm going through now. I've really been on EMu five this morning to look as acquisitions, loans, incoming loans, outgoing loans, condition reports for another object as well. So I'll just log in fairly regularly, to say on a daily basis, absolutely. I can't say how many hours I would, but quite a bit of the time. But that is the main ***inaudible*** I use, Pomatahu as well. And I use that infrequently. K-EMu and emails is what I use.

RB: So did you ever have any training with the software, or is just kind of a -

RS: There has been training, but it's also - if I need to find out I will find out. Sometimes you don't know what you don't know until you know you don't know. And sometimes the training I need is very focused on "this is what I need to do, this is the big picture." And it depends on the learning style as well. Some people will be brought in and they're quite different from me, and maybe some of IT trainers are used to more of a - Te Papa is a corporate organization, but more of a, say business corporate entity than what we do here, so some of the technology and language is not the language that I would be familiar with, in the same way that if I talk as a conservator on treatments. ***inaudible***

RB: You've touched on a few of them, what would you say are the main advantages and disadvantages of the software where it stands right now?

RS: There are an enormous amount of advantages to it. Accountability, accessibility, we can change it as required. The disadvantages to it is the remote access. There isn't any in this stage, for me. The disadvantages are the loading of images, because every image needs metadata with it, so I need to manually put that metadata in. If I've got an object that has 20 images - I've got an object that we did over 300 images. Now if I'm loading that and it takes me five minutes or minute to do every image, that's an enormous amount

of - and I'm going "there's got to be a way to bulk load this." Or can I just drag and drop? Drag and drop, drag and drop, drag and drop, that would be the preference for me. It might not be the same for everybody but for me it seems crazy that we can't - you've got your folder of images, you just go "copy paste, copy paste, copy paste." Why not? And I know that with the images we take, the cameras we have, the metadata is kept with the image. Now why can't that all just be loaded up and kept with that file as opposed to me going "okay on this day we did this aperture, we did this light setting." So there's a lot of double handling on basic information that doesn't actually pertain to my core business which is the care and treatment of the collections. So if there's a way of speeding that up, sorry do you have a question?

EC: I was going to ask about the remote access, do you know if that's because of the software or is that security?

RS: I can't answer that. I've been told several things over the years. I've been told it's security, I've been told it's our hardware, I've been told the software doesn't support it. Depends who is the IT attendant.

RB: Were you guys ever allowed to work from home? Do they give you a remote login?

RS: Yup.

RB: And that just brings you to your desktop -

RS: It does.

RB: - but it won't have the application in it?

RS: But it won't have the application for EMu on it. So it'll come onto my desktop, I've got remote access for whatever, email and such, but if I want to get on the EMu database

I don't have access to that. If I'm sitting in a hotel in San Francisco, trying to find some information on the object I have to email Nirmala here, saying "can you please?" - or make a phone call, which is a bit silly. But if that's needs to be done then it needs to be done. But the remote access is a big point for me. It's also a big point for our touring managers and collection managers. It would be really nice to, if they're so far out making a delivery of artifacts to wherever, they always carry a hard copy, but if there's an issue they could look on the database and go "okay, these are the images, this is the report and now I understand." Also with EMu you've got your history as well, so I'll look in the conservation module, I'll look in the security module, I'll look in the curatorial module, the display, the designs and stuff. The history of an object, what people think they're made from, and the exhibition history, which will give me light exposures and environmental if it's been an issue before, where things have been and why they've been there. And that will inform me of my job here.

RB: So do you have any further comments about the digital infrastructure?

RS: I believe that it's been looked at seriously. It will be improved, which is great. And there should be products out there that, hopefully off the shelf, don't need to be built for Te Papa, so therefore you've got the compatibility with other organizations so you can go into them and go "okay, my system actually works here." As opposed to "oh, it's only specific for Te Papa, it only works here." Therefor for touring applications, it can be useless. I would really like as a conservator to have a device, whatever that device is, a phone or tablet, laptop, whatever, that I go to a venue or we give the lending venue access to that particular folder within the database, they can login and look at it, or I login and look at it, update immediately online to the database. We have it there and if necessary just print everything out. So if the venue has the hardcopy with us they will need that to be - also we need to sign everything because that transfers liability from us to the venue, therefore insurance liability. And if you've ever dealt with insurance companies, you need to have a really serious line of identification of responsibility. And when that liability moves over, because you need to make a claim, you need to be black and white on that. So that's what I would like. I would also like a system where the uploading of

images is a lot more intuitive. And is upgradable as well, because I know that five years from now the suite of technology will be completely different, and devices will have changed and be different as well. How do we keep on track of that obsolescence? Also, the loss of data through migration as well. So that classic old thing of photocopying an image ten times, you end up having a high-res to very low-res.

RB: So then, we kind of have some follow up questions, more about technology and gathering some data for us. On a typical week how many hours would you spend using digital technology at the museum? And that would be like using your computer -

RS: Oh, I would say probably about 60 to 70 percent of my time.

RB: That's a lot.

RS: I'm think cameras, uploading images, taking images, emails, creating documents, writing documents, scanning documents, sending documents away. It's more than writing, because I tend not to - pencils and pens ***inaudible*** So I spend quite a lot of time on these machines. There's always things to do, it's just not the condition reports, it's the writing of the papers, it's the writing of the documents that are required for the conservator. We just don't do each work, there's a whole range of other things to do.

RB: What aspects do you think are improved by digital technology?

RS: Oh, enormous things. The ease of information, the ease of information transfer, the ease of creating information in a way that's accessible to a lot of people. Moving those documents around, emailing to whoever, having access to other people's information as well. And that's an issue of security as well. Having a comprehensive history of objects or collection objects and reasoning behind them, why we acquired them from a curatorial perspective, conservator's perspective, collection manager's perspective, having that. So yeah I'm a big fan of it. I've been doing this work nearly for 20 years now so I started

when people were at the tail end of using this and that, film cameras, and then using digital cameras which were wonderful but there are a lot more megapixel, which really weren't that useful, but now the technology is such that they're very useful. So the whole change of reporting, when I started doing this you would handwrite your reports and now of course who would do that? And it also means that for me, because how I work and how my brain I guess, is having things on the database, it's easier for me to get my concepts across to other people. Because a lot of what we do is about communication and being able to communicate with people. Sometimes we do that very well, sometimes we do that not so well. And for other people, the audience who we write for at times, change the time to suit the audience, so having documents out and images out fast as well because sometimes we'll get a call that says "something's happened," what could, what should we do, having an image emailed really quickly means we can make more informed decision that are more appropriate for the collection item.

RB: So I guess the antonym of that question would be, what aspect of your work routine are hindered by digital technology?

RS: When it doesn't work, when it breaks down. When I've got 300 images to upload to a condition report, to a treatment report. Why am I spending three days doing it when it could just be a file that gets zapped over and the images get changed over? That's what I find a hindrance. When we are limited with our emails, the size of the images that we can - or the size of the files I should say, that we can send. People will send us very large images, very large files, they won't come through. Because they're not optimized for our system, and the system may - might have been set up for someone who only does holiday snapshots, as opposed to very large high resolution images that I need to really scroll down into to see that marker crack, or a crack that might be only half a millimeter by two millimeters long, which is quite small. But I want it to look on the screen 30 centimeters, so I can really look into and see how that crack may develop. So that's why I get frustrated with it. The lack of accessibility, remote, is a real pain at times. And the systems we have are generally very good if you're only lab based. If you're not lab based, or not based within the building, which as the infrastructure ***inaudible***

somewhere remote, it's a pretty big constraint. I've worked in place which were extremely remote, and the IT systems we had there, the accessibility was great. It wasn't a problem. We just had to wait for particular satellites to come into our orbit, across the horizon, but it wasn't a problem. And that was working. If we can do it there, that's a remote space, or if you've got people in yachts that are out on the Pacific Ocean, weeks from anywhere, and their connectivity is a lot better than what it is here, you got to wonder, you know? Why is that? I'm not sure what the resourcing has been like, I'm don't know what the staffing can be like, but for me it's access is the bug there, particularly if you're doing touring shows, and you're out and about or you're at a venue and you need to look at something quickly and you may not have the paperwork with you in some way. And it makes us look very silly as well. Not as proficient as we perhaps should be.

RB: So you kind of already answered this, but you prefer to not use paper and pencil when you're creating the reports, right?

RS: Oh yeah absolutely. I would prefer everything to be - well, let me qualify that by saying maybe if I'm marking up an image pens if necessary.

__interrupted by phone call__

RS: Sorry about that, what was that question again?

RB: Do you prefer to use paper and pencil -

RS: And crayons as well perhaps! Depending on what the actually work is no, I prefer to have everything on the database digitized. I know that there is confident***inaudible***having a hard copy but at times you have to have faith in the system and that information might be lost, and I have no reason to believe that it will be lost. Before when I started doing this work a while ago, it was mainly paper based and now it doesn't need to be

because the technology is good enough. Images, cameras, are good enough. Why not? Why print? I am very keen on having everything in the digital world.

RB: So that answers 21, are you comfortable using digital technology?

RS: Yeah, generally. Yeah I am, but it depends on who the audience is I guess. Are they comfortable using it? Because one of the things that I do find is that "okay, English is my first language," but I work in places where it's not the first language. And the people may not be comfortable using, or may not have access, and you may be in place that doesn't have electricity, you may be in a place that doesn't have reception. So it may not be appropriate. So depending where you are going to, and also I know that you don't want to show up - it's like showing up to someone's party or someone's wedding and you're better dressed than the primary, the groom as it were or the people who are getting married, and you don't want to do that! I've been on places where I show up for work, and people are dressed appropriately, but the appropriate dress is a pair of gum boots, a pair of work pants, and a jumper and that's all, you don't want to show up in a suit and tie. So sometimes it's not appropriate. We deal with not just the physical side of the world, we deal with people's stories, their histories, some of their histories are not particularly good and they might not want to talk about it, or they may want to talk about it so there's comfort and trust, and that's why when you ask to record and there's all these things and you say "yes, I'm happy, absolutely happy with that." But I have been in places where people have recorded me and used that information and misquoted me quite badly. So other people may feel that way as well. There's sometimes cultural - some people I know don't like being photographed, because that takes something away from them. Or they go "no, photograph me! That's my gift to you." And there needs to be an understanding there as well. So sometimes a bit of paper is the best thing. That's rare. It's not common, but it does - and I probably will run into that again, but it's okay, because we are here to not tell people outside Te Papa what to do, but to assist them, facilitate, and help, give suggestions.

RB: That was a good answer! We just asked about smartphones and tablets, but you went way beyond that, it's great!

RS: I'm really happy with all of these, and there's probably something else that will come out - they'll be someone five years from now who goes "smartphone? That's not a smartphone." When a screen can project on any surface, it'll be great!

RB: Do you have any additional reservations or comments about using the technology? Although you kind of touched on that with your previous answer.

RS: Well the only reservations I have is the obsolescence of, and keeping up to date, now how much of that is driven by industry and how much of that is driven by the needs of the user, opposed to the needs of the vendor to keep in business. So it's the obsolescence, is the issue. And archiving the information. And what happens when a venue gets ***inaudible*** but at the point where it's got so much information it slows down. Now can the organization find an upgrade before we get the speed and the connectivity and what we need to do our job. So that's the reservations I have, and it also is about the training and is about the trainers, and the people who get trained.

RB: In a perfect world, what would be your ideal condition reporting system?

RS: Something's that appropriate for the objects, something's that appropriate for the audience, and I mean the word audience could be me, could be the venue, could be someone else completely different. Perfect, at this stage, my thoughts on what a perfect condition report is, is I'm happy with EMu, works for what I need it for. But a perfect condition report is something that can accessed remotely, EMu is kept secure with all these security things that we have, but something that I can remotely access and remotely edit with no issues of dropping, systems dropping out, systems getting corrupted, and something that I can upload images to relatively easily, as well. That would be my ideal - hopefully it's relevant. May not be! And a system that is - if we find out there's a new

part of that that we'd like to add to it or simplify it, then it's relatively easy to redo that coding without messing up the whole system. So yeah, that's what I would like.

RB: And I jumped over 23, because I feel like you answered a lot about what you like and the things you would change.

RS: Oh really? Okay!

RB: Unless you have anything else to add to that.

RS: Not really, it's recorded! I look at these as a conversation. And you guys are around and I'm around as well.

(End of Interview)

Interview with Shane Pasene

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD), and Thomas Flannery (TF)

Interviewee: Shane Pasene (SP)

Interview Setting: Interview conducted at the object conservator's desk at Tory Street facility at Te Papa

Date Interview Conducted: 1/26/2016

Time Duration: 28:06 sec

Transcribed by: Thomas Flannery

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

EC: So our first question, do you give consent to use any of the information gathered in this interview in a formal report that will be published and publicly available?

SP: Yup. I have no problem with that.

EC: Alright, great. The basic questions is first. What is your name?

SP: Oh good! I know this one! Shane Pasene.

EC: What department do you work for?

SP: Conservation services.

EC: And what is your job title and description?

SP: So my job title is Conservation Technician and, basically, it is to support the conservators with treatment, hands-on treatment. And with maintenance, and serving of equipment and supplies, like with the chemicals and special materials. And also I do a lot of the environmental monitoring of exhibitions and cleaning exhibitions down on Cable Street. So I spend half of my time between this place, in the lab on Tory Street, and between Cable Street. I have an office down there in the quarantine room. So I do a lot of the fumigation and piece management programs in cleaning encased objects on exhibition, as well as monitoring the environment for relative humidity and temperature. I also work with Robert and Nirmala on objects. Some projects deal with storage, and some on just cleaning or preparing collection items for exhibition.

EC: So do you work with condition reports?

SP: I do on occasion, not as much as the conservators. I don't do a lot of the loan condition reports, outgoing, which they do for touring exhibitions or stuff that goes out to different institutions around the country. Mine is usually condition reports of objects that come into the lab or stuff that we are receiving from other institutions, which we have as either part of the collection or that are going on exhibition as well. So to a limited degree I do condition reports.

EC: When you do these condition reports, where do you work on them?

SP: Usually in the objects lab here. Mostly at Tory Street in this lab. Sometimes I'll do them down at Cable Street, we have a small lab there. But yeah, it's mostly here and mostly in object support. I don't actually do them for textiles, paintings, or paper. So basically Tory Street.

EC: So we have a lot of questions regarding to condition reporting. Could you describe the process of creating and editing a condition report?

SP: Well the last ones I did were condition reports for inspiration station, which is the children's discovery center. And it was themed around DreamWorks, which was the exhibition. And it was 36 small My Little Pony's. They're a disaster because there's so many of them. And this is only a small sample of outside collections services ***inaudible***.

So the first thing to do is, because it is a TMP number, which means it is a loan, I had to match up each object with their loan number. You get a schedule which says the stuff that have been collected and being brought in, so I had to identify, oh man what are their names, like Starblazer and Morning Glory. And if you have a TMP number, you have to match that up to each image just so you know you have everything there. And then you check additional accessories.

RB: My sister had a lot of them. I understand your pain.

SP: Yeah. I learned a lot more than I wanted to know about My Little Pony. But once I've got that, then I can start working out how I do the condition report on them, because they're quite generic in that they're a loan and part of the agreement is we aren't doing any treatments on it so we're just taking a snapshot of the object as it comes in. So that's for the records for the collector and us as the lenders. We both agreed upon the object's conditions they came in. So it is a matter of correlating the objects with the numbers and then taking a photograph of them. And when you take a photograph, you take it from the front, two sides, and the back because it's a three dimensional object. A bit different if you're doing paintings and papers, sort of two dimensional stuff. And from that, you write up your report. I break it down into the surface, the medium (what it's made up of), and if there's any damages. Those are the three sort of basic ones when I'm looking at an object, I can see whether it has any surface accretions, whether it has any staining, whether it has any abrasions; and then I'll look at damage, whether it has any cracks, any lost parts, missing parts, or whether it has any damages or any breaks in it. I break those up into those parts and then I'll write up. I hand write these. I don't use laptops because I find it's easier for me because I'm photographing at the same time as I'm taking notes. I can just jot down stuff . And then later on, I'll input all of that onto KE EMu because it's

got a little template so you can fill that out. These are quite brief. The only reason why is because there's so many of them and because of the conditions of them. We're not doing any condition treatment. It's more of just a report on the condition.
Does that answer your question?

EC: Yes! So not all of these scenarios apply but how much time do you usually spend to create a condition report or when it's on exhibition, tour, loan?

SP: Well it really does depend on the object. For example, little ponies, there was 36 little horses and that actually took a long time. So that took a few weeks. There's another studio which is a big house and I'm conditioning that one. I'm still doing that one. It's been like a month and that's because there's just so many different components to it. I would say specifically if we were looking at a little pony horse, it would take maybe two hours to do that one on average. It's probably a bit less because there wasn't much data.

RB: Two hours per one pony?

SP: Yeah. And that's from identifying it, matching it up to the numbers in there, and photographing, and then writing up the notes into KE EMu. So yeah, it's an average of that time.
Something like a carving could take a bit longer because it's quite bigger and you have to do it sort of in sections. So you'd start up at the proper left or proper right side of it and then you'd work your way down from top to bottom and then you describe each little part as you go. So you know, this is on the proper left side, left eye partially missing, or something like that. So you can do it systematically so that people reading it can follow that as well. I mean, you do take photographs and you can do overlays and you can put the marks but you still have that reference. And this is probably more old school than what the conservators do because, again, they do a lot more than me so they are taking a lot more photos, and doing it digitally. So that's the idea of it but I haven't really gotten it yet.

We were talking about one time using VictorWorks, it's a program where you can take the photo and then you can do all of the digitization ***inaudible***. But at the moment it's very much just get the image, put the image up, put an overlay on it, and mark it up with a felt tip pen and then referencing it to the notes.

EC: So you've been kind of touching on this but can you describe your experience working with photos or other media in relation to the condition reporting?

SP: Yeah I think it would probably make it a lot faster if we just did a lot of imaging but then we'd have to be set up to do that all the time. And I think I prefer doing it in the lab because we do have the camera equipment here and we can put it on our computer and do all the work on there. I just don't know how to do it yet. But I mean, it's a lot easier doing it there then say going down to conservation down in Cable Street because we're set up to do all of the graphic work and then transfer all that information. So yeah, I think it's definitely a lot more accurate to do it with photographs. You can describe and people interpret it differently; or you may think this is an accretion, other people may not think it is an accretion. Or you may think this is an existing damage; and they may think this is a new damage. But if you've got the image in front of you, there's no disputing what it is. It's a lot more accurate than taking notes.

EC: What do you think are the advantages and disadvantages of the current process?

SP: I think just the variation we have in our condition reports. There's all types of condition reports that people do, like you do them for if you're going to do a treatment, you do them for loans, you do things that are coming into the museum, or you do them for touring; and you do them a textile conservator or a paper conservator or objects so you have different interpretations of what they're talking about down to what is the dimensions of something. What is the height, length, width even though they are standards of KE EMu. For example, if you get a pencil, people will describe what is the length and the height differently depending on the makeup of it. Or what is the damage

on it? Everyone has their own different ideas on that. So, it's something that I think people do slightly differently; but at the same time, I don't think it is a huge issue. But maybe there is some type of standardization we can do, I just don't know how. We do a little bit through KE EMu but people have different ways of looking at it as opposed to different conservators.

EC: How often do you work with the IT staff and EMu staff?

SP: Again, because I don't do a lot of condition reports, I don't have that much involvement with them. But I should; especially with the EMu staff because there's a lot of the functions I don't know how to use properly. I don't know how to bulk load pictures and it would be great to.

EC: Everyone does from what it sounds like.

SP: It might just be us. I mean, because it is the easiest option, we can get them to bulk load them. So we give all our photos, for example, again, getting back to the My Little Ponies, so you have 30 ponies but you have four images for each one, so that gets to be quite a lot you have to bulk load. But to do that, you have to get your TMP numbers in the right order so you can go into KE EMu. It just makes me want to go to sleep just thinking about it. So instead I'll just say, 'I have all these images I need loaded,' and they'll do it for me; but it would be ideal if I could do it because sometimes I just have one object I could load but I'm in bulk loading.

EC: So I guess you've already touched on when and how you use EMu. Are there any other times that you use it?

SP: Well implications you use it as well. If there's an object that's going on exhibition and it may need someone to put something into where it should go on exhibition, it needs this much light on it, the right humidity or temperature, so there's sort of standards around that. So you would use KE EMu for that. Sometimes I use it to find information

that the curators have put in there about it so you know a bit more about what you're working on. Or what it's for sometimes. Because we get an object and sometimes we don't know if it's for exhibition, if it's for collections storage, if it's for treatment. You have to do a bit of finding that information and the curators might happen to put that into KE EMu and see what has already been put in there; and even if the conservators have worked on it previously. It is handy. It's just knowing how to navigate your way around it really. Because it has all these different categories. You have your catalogue, you've got conservation, you've got exhibition, you've got scheduler. So you've got all these different tabs, which is good. I think it's good in a way because there are scopes to do different things but sometimes it's not as intuitive as you want it to be.

EC: Did you have any training to use KE EMu?

SP: Oh yeah. So we did the initial training, when initially it was launched, and that was maybe eighteen years ago? I can't remember. So you do your basic training and then you have ongoing training and they all have different features. They do have clinics that you can go to as well or you can ring up the EMu staff and they'll have a one-on-one with you. But yeah, again, because if you're not using it all the time, you do get a bit rusty on how to use it.

EC: Can you go over the advantages and disadvantages of KE EMu?

SP: Because I don't use it all the time, I'm not that familiar with it so it's always a bit of a guess for me trying to work out which tabs work, which ones I should be using, which ones for searching and that. It's easier for me to search in catalogue under object. And then it'll either bring up no objects matched or so many objects matched that then I have to scroll down again. So once I get familiar with that, then I can get into KE EMu and start looking at it with more details like description, whether it's had any treatment, and if there's any curatorial notes as well. And that's quite intuitive but sometimes I find when I'm trying to print up a specific report, it doesn't actually do that for me. So, I think maybe it's because I'm not too familiar with printing out the condition reports the way I

want them to be. People have different ways they want them done too. There's a different format for loans, touring, and incoming loan or outgoing loan. So there are a different variety of ways of doing it and if you have to get your images on properly the way you want them on your condition report. And people have different preferences.
I think they tried to standardize a lot of that stuff but then people still want to customize as well. So you do have the standardizing but people want to custom them so they work better for them as well.

EC: We've heard other people having issues attaching images to condition reports.

SP: Yeah, there are some people that can do it but I don't know.

EC: Do you have any additional comments on EMu, the condition reporting system?

SP: Only that it's a better system than what we had before that. It's good in that it actually brings everything together. So like the collection manager notes, as the curators', as well as the object support, as well as the conservators' and it's all on this one database and that's really handy. And it's electronic, we still have hardcopies around but not so much now. Again, it's an advantage.

EC: During a typical work week, how many hours do you spend using digital technology in your routine?

SP: Actually not that much. Well, I would say per week, uh…Are you talking about KE EMu in particular?

EC: Really just any digital technology, say laptops or computers.

SP: Oh okay. I would say on average maybe four hours a day using the PC and downloading information. It's mostly with Datalog to monitor the environments, to get the information about relative humidity and temperature, and then having to format that

on the program into a document that I can send out to other people. Not so much with KE EMu because I don't have that many collection items that I do condition reports on. I'm trying to think of how much I use KE EMu. Probably around one day a month.

EC: What aspects of your work routine do you feel have been improved through digital technology?

SP: Definitely a lot of this environmental stuff because you use a lot of meters like cyclometers for taking spot readings, temperature and humidity, and lux meters for taking light readings. It certainly been like 27 years where we've seen a change overtime from just using mechanical instruments to electronic stuff and how much easier and more accurate it is. How much information you can download to send it off, it's definitely an asset.

EC: Is there anything you believe has been hindered by technology?

SP: I never really thought of that. I don't think so. I mean even the fact that you're using the cameras makes it so much more instantaneous because we used to use film and you'd need to take the photo and then you'd have to get it processed, and then you get the prints and then you can write them up. Now it's all digitized.

EC: Well that's good! So when creating condition reports do you prefer using paper and pencil?

SP: Yeah, I do for writing up my notes. But I prefer that than doing it on a laptop and we haven't really got set up to use iPads. So yeah, I do prefer pencil and paper for my initial notes and then writing them up later.

EC: Is that just because you feel you have more flexibility?

SP: Yeah. And I think it's faster for me to do it that way then it is on the computer.

EC: So then you'd still transcribe it to the computer?

SP: Yeah.

EC: Are you comfortable using mobile technology like laptops or tablets or smartphones?

SP: If we had better access around here and better programs, I think I would use it more. I don't think we're that well-resourced to use those here. I do have my laptop around here, which is sort of a shared thing. But other than that, I don't think I have any issues with using that.

EC: Okay. Do you have any reservations or comments about using mobile technology to create, edit or handle condition reports?

SP: Yeah I suppose having accessibility would be the only thing I'd have and that we'd all have our own ones. You do have to share a lot of that material even if it's just using cameras around here. We've got four cameras, which have to be used throughout all of conservation. People want to do copy stains, people want to do studio shots, people want to shots in the lab, so you always have to find the equipment to do that. Again, it's about resourcing I think.

EC: What do you like about the current digital system that's in place and is there anything that you would change about it?

SP: Now I don't think I'm that familiar with the digital system. Were you talking about the software that we use for KE EMu or in general for everything in the museum?

EC: I guess specifically EMu but in general.

SP: I don't know really. I haven't really thought about that. What's the question again?

EC: Just anything about the technology that's in place that you particularly like or wish you could change. So with a focus on EMu but really anything else that comes to
mind.

SP: I think because my focus seems to be more on monitoring the environment, I would like programs that we use for our Datalogs to be on the system because at the moment, we have that as a stand-alone on a laptop because they don't want to put it on the system. So everything I download I have to take; I can't do it remotely. I have to get the datalog and take it down to the conservation office and download that information and then take the datalog back again. Now if I could do that remotely, I wouldn't have to go through that step there. It would make it a lot faster and I could do a lot more of their stuff. Because we have datalogs here on Tory Street but that means I have to bring the laptop up here, plug it in and then download it so that's been my ongoing beef at the moment. We only just got to upgrade it. That would be the only thing I could think about really.

EC: Well the last question is, in that same ballpark, could you describe your ideal condition reporting system?

SP: I've never really thought about that one. I do like the fact that on KE EMu, it has a checklist. So you don't have to reenter***inaudible*** everything all the time. You can go through and use the field to tell you wherever that is and descriptive words like cracking or breaks or staining or abrasions and stuff like that. And you can just go through and put that word in. But, I'd probably like more descriptive words. It's probably my fault, I need to get in touch with EMu stuff but I think about putting this word in and only when I'm doing the condition reporting I think, 'I should've put that word in.' But that's just small tweaking of the condition reporting format.
I think I'm quite happy with how the condition reporting works. I think the only other thing would be when you talk about mobile technology, having more ability to use that

sort of stuff in future. I mean, Nirmala and I were talking about how other institutions use iPads for taking an image and being able to mark it up where all the cracks and stuff like that are. If we could do that here, that would make things go a lot faster and a lot more accessible so we can do those out on the exhibition floors when we're doing the work, rather than having to take a photograph, do your notes, and then transcribe all of that. It would just make it all efficient.

EC: Alright, well that's all the questions we have.

SP: Great!

EC: Thank you very much!

(End of Interview)

Interview with Sunita Mahat

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD), and Thomas Flannery (TF)

Interviewee: Sunita Mahat (SM)

Interview Setting: Interview conducted at Tory Street facility at Te Papa

Date Interview Conducted: 2/2/2016

Time Duration: 13:30 sec

Transcribed by: Rachel Brown

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

EC: Just curious, what do you know about the project?

SM: I know basically from what Carol has told me but not too much. I think you are working with Claudia and Gillian I know that much, and I know Carol has been working quite closely with you and but um yeah maybe you could tell me?

RB: Basically our project is we want to be able to bring the condition reporting process into the 21st century vis a vi more digital rather than paper processing. We noticed that from talking to conservators a lot of people are using paper reports or you have to print out a piece of paper with every single item that's going on loan or traveling exhibitions and they get back tons of paperwork that they have to put into EMu which isn't necessarily the most time efficient process that could be there so our goal basically is to assess the situation see what the communication is like between the different departments like IT and the EMu staff and the conservation team and kind of see where there issues are and then we can better assess what we

can do moving forward to make the process more efficient and just make your lives easier. Because I know every party has some sort of investment in it.

EC: So our first question, do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available?

SM: Yes I do.

EC: Thank you! Second question, this one is an easy one, what is your name?

SM: Sunita Mahat: s-u-n-i-t-a and my last name is m-a-h-a-t.

EC: So, another easy one, hopefully, what is your job title and description?

SM: So my job title is collections information officer and I work as part of the collection information team. My role, I work mainly with support and training but apart from that there's also a lot of working with a lot of data, working with support and training; I deal with a lot of people. I am a front facing part of our team, but I also do lots of data cleaning and ongoing work that's not so much support and training as well. And also we got our collections online I work with publishing a lot of records because we are constantly publishing records that have been in generation by various staff members throughout the organization a lot of collections staff use EMu but for that information to be accessed I put it online so that people throughout the organization can access it, I mean not everything goes online, but yeah basic information does so.

EC: So, can you describe the digital infrastructure of the museum, both at Cable Street and here at Tory Street?

SM: Digital infrastructure?

EC: We were thinking like Wi-Fi, storage…

SM: I think our Wi-Fi capabilities like back of house we've got Internet, but Wi-Fi I think is more relative to certain areas and mostly in Cable Street it's the whole institution has Wi-Fi but back of house can access internet and in certain areas we have Wi-Fi access as well so yeah. You said available software? I think for myself most software that I need as part of my work I do have access to apart from EMu I use on a general basis I use things like Excel, Photoshop, and just like file renaming tools, things like that. Yeah to access those and to get it if I need something to get it installed I just need to contact the IT team and you know so just working with them to get that sorted and yeah.

EC: And you have all of this software installed on your computer or you have to use another computer too?

SM: Not so much over here if I need Photoshop then I would just my local machine has it so I need to get into my local environment for things like Photoshop because I don't have it in my virtual so I can't use it if I'm working from here so that's the only sort of problem that I have sometimes but I can sort of plan around that, but other than that most of the software that I would need I can access it from this building or there and I'm in this building once a week I try to be here because a lot of collection staff are in this building and then I'm based in Cable street 4 days a week, but sometimes if people need me here then I will come here but usually I try to do all the Tory street meetings or trainings on Tuesdays. I think I sort of digressed but…

EC: So in your opinion, what are the constraints of the technological system that is set up currently?

SM: I think we moved to the virtual environment just a few and having virtual desktops just a couple of years ago so I think they are still sort of ironing out some of these issues and with our own system we've got a program called Crystal that we do reporting and we are trying to get that upgraded as well and EMu the software might not support the latest

version so there's just the programs talking to each other and there might be some issues sometimes so yeah. Other than that and in the past few years or so we've had a lot of staff turnover especially amongst the IT, there are a lot of people who have been here for many many years till they left and then I guess for the new people just sort of pickup it takes a while but that's more the people side of things.

EC: So how often do you work with the conservation staff?

SM: The conservation staff, through email I think quite regularly because we've got a email address for our team called "EMu help" and then people just email us directly to that email address or contacts us directly and I'm physically here once a week so if there is any issues with the system or if they require any advice they either contact us through EMu help or give myself or Carol a call and if we need to meet we just meet up and we'll come usually be based down here for that.

EC: What is your understanding of the conservation team and the role that they perform at the museum?

SM: Usually I think it's mostly for either preservation of what we have or if there is a treatment required for an item, so they are involved in the treatment process if something is going out on loan they need to do a condition check if there is an exhibition they would need to do a condition check as well or if it needs treatment so they are involved in all of that and they usually, I guess how I understand it, because you know they use EMu for most of those processes so and then they do reporting through EMu as well using the crystal reports.

EC: So our next question is not really that applicable, you are obviously familiar with the EMu Software. Haha.

SM: Yeah haha.

EC: So, to the best of your knowledge how does the conservation staff utilize the software and do you know if there are any features that they are not utilizing that are there?

SM: I think the conservation module that we have in EMu where they seem to use that quite well and for condition reporting and treatment reporting and earlier this year we tried to work with the conservation team we have in the past given imaging loading training, which I showed you briefly the other day, but this year we tried to give most of the conservation staff image loading training, I think we did cover most of the staff and we had several sessions in Tory street so yeah we are constantly working with them on that one.

EC: What is your opinion on the use of images and other media in condition reports?

SM: I think it's very important it is sort of vital you know because sometimes they can load individually but we help them load in bulk as well so even not just for conservation I guess that we've got a frame maker he does frame I don't know you probably have met Matthew as well so yeah so it's the actual work but also the frame and there's various parts of the frame or work that they want imaged and before and after treatment images and for all that just description would not be enough the images are quite vital to the process I think for capturing what's been done and so.

EC: We've heard some concerns about the amount of space that they pictures take up in EMu, so just curious to know if you thought that was becoming an issue at all with the amount of space?

SM: Yeah there are some I guess it some there's some works that have lots and lots of images attached and just I haven't quite figured it out myself -maybe that's for what you guys you know, do we not put in high res images or you know like so if a work might have 200 images attached to it, so sometimes to when we open up that work or in EMu-

not the actual work it just slows up that record a bit so if, I guess that's more an EMu thing, but if we could still load the images but if we could be a bit faster I guess that's just the speed you know if you could still have high res images attached to the collection item but just a bit faster and yeah because there's a few works there that have over 200 works and it's not just conservation images its other images as well, but yeah just opening it up sometimes takes a bit longer.

EC: So do you have any additional comments about the digital technology in the museum?

SM: Just, sorry, thinking about the images again I think we are in the process of getting a digital asset management system so that deals mostly with the images that are not collection items so a lot of times the imaging team will take images that are not necessarily of collection times so they are looking for a system that would and sometimes people load it into EMu you know so they are trying to get…

EC: Do you happen to know the name of the software?

SM: I think they are sort of working, there's a business analyst, Marlena, she's working, she's sort of getting to what you guys are doing too, interviewing everyone and but they actually haven't decided on a system yet they're thinking about it yeah so, possibly some of the conservation images I'm thinking about whether it can go but no I guess it wouldn't because a lot of it is collection items you know? So that's non-collection images so yeah.

RB: Where are the current images? Are they all being stored in the same place, like the collection items and non-collection items? Is that why they require you to train?

SM: I think that most of the collection items would be stored in EMu there are some images which wouldn't like exhibition, if there's an exhibition they will load and they are non-collection items they are images of the exhibition installation shots or exhibition

shots those would be, have been loaded to EMu but I think that the imaging team have lots of other images that are of events and various other you know activities that not necessarily go into EMu but so there is images still need to managed like EMu so they are still trying to work on that system or what to get and what to, but I'm not really involved too much with that process so…

EC: So our last question for you, if you had to describe your ideal system for digital infrastructure here what would it be?

SM: My ideal system? Haha Um …

EC: You can dream big.

SM: Yeah um, I guess well um I think as the system that we use does quite a bit you know like what the existing one, but I guess I don't really know too much about what is out there that could be make things more efficient and cater to… what the you know, I think the existing sys. I'm just thinking about the collection information I guess rather than the bigger picture but and this system does like you know it caters to loans, loans process so rather than just collection information its caters to all the processes as well so then the processes are captured in it the conservation process, the loan process, the exhibition process, yeah so I feel like what it does it good but if there's ways to even make it more efficient or if it can be talked to other systems to make it more efficient I don't know, that's probably you guys would know better but yeah, but I don't know if that really answers your questions

TF: No I think what we're looking for is to see if with this current system if there are any problems that you see that would like to be changed, for example you wish there was more storage, you wish there was more Wi-Fi accessibility in Tory Street, basically anything that you would say you would like to be improved.

SM: Yeah Wi-Fi especially in the storage areas that would be really good, for especially for collection managers because you know they are constantly moving objects in and out and I think we tried to introduce the handheld gadget to store information especially locations information but then that we haven't really been doing that too much these days so if there's especially little hand-held systems or that can capture information or what is it, if location coding can be done is it, what is it just like barcoding you know, those things would make it quite efficient I don't know if conservation if there's yeah mostly for moving objects around that would be useful. In this building we only have Wi-Fi in certain areas yeah. We got storage spirit collection over there as well so so so especially collections managers and curators you know it would be quite very useful yeah.

RB: To have barcodes?

SM: Oh I mean just sort of wireless system yeah, wireless system

RB: Okay yeah, I picked up "wireless" and "barcode"… "wireless barcode" we're not sure that's a thing haha

SM: So wireless barcodes but then, sorry wireless systems… DELETE hahaha
TF: Don't worry we will skip that part.

SM: Haha yeah. So just to make it more… say we have a collection manager and his name is Tom for example you know he would need to sometimes just do it in his excel spreadsheet and then come back and then sometimes where he gets us to import the files into EMu so if there's a way to make all that more efficient rather than this like too many steps in that process, like there's so many things you could do but yeah.

RB: We definitely don't know enough about collections managers to know what the process is like. Cool.

EC: Well yeah I think that's everything we have. Thank you very much for your time and the information you've given us.

RB: Do you have any questions for us?

SM: Hopefully you will be able to come up with a good solutions for us, yeah. How's your findings been so far? Quite…

RB: We're getting a lot of similar answers which is good, I think it's pointing us in the right direction in terms of what we need to do moving forward. I think a lot of it is communication based and also just more education and stuff like that, which is easy fixes sometimes and then also just improvement on the digital infrastructure itself like we were shaking our heads when we walked downstairs and saw lovely blue cables hanging from the ceilings as a means of connectivity. For us back in the states we're used to just walking around and there's free Wi-Fi everywhere which is great. But here trying to get connection is like trying to find a blue cord in a haystack so.

SM: And we've only had Wi-Fi for not that long. So this is kind of a new thing so yeah.

RB: Being able to identify things like that will help us.

SM: That would be really good. Especially because you will be interviewing quite a lot of people across the organizations and yeah. Hmmm oh well, thanks for coming all the way up here.

TF: Thanks for taking the time to meet with us.

RB: If there's anything we will contact you, like if there's any quotes we need to get or anything.

(End of Interview)

Interview with Yu-Yu Win

Interviewers: Rachel Brown (RB), Ethan Coeytaux (EC), Frank DeGiacomo (FD), and Thomas Flannery (TF)

Interviewee: Yu-Yu Win (YW)

Interview Setting: Britten Conference Room, Cable Street facility of Te Papa

Date Interview Conducted: 2/3/2016

Time Duration: 23:43 sec

Transcribed by: Thomas Flannery

Disclaimer: The following transcription was recorded with the consent of the interviewee. The views and opinions expressed in this interview are those of the participant and do not necessarily reflect the official policy or position of Worcester Polytechnic Institute or the Te Papa Tongarewa Museum.

(Start of Interview)

EC: Okay so, first question: do you give consent to use any of the information gathered in this interview in a formal report that will be published and publically available?

YW: Sure, yes. I do.

EC: Great, thank you. Second question is an easy one. What is your name?

YW: Yu-Yu Win.

EC: Okay, so next question. What is your job title and description?

YW: Technical Support, I think. It's on my email. I think it's a support analyst. Yes, IT Support Analyst is what is.

EC: So what are the roles for that job?

YW: We look after the service desk queue. Everyone logs a call if they need anything or if they have anything broken. They will log a call, it will come to a queue, that we monitor so there are three of us there doing that every day. And we pick out the queue we're assigned. We're assigned a level or location and then we rotate. So one person is assigned to Tory, one person assigned to level 2, one person assigned to level 3. During the morning we pick up all of the jobs in our area and we just go and do them. So that's the morning. And then the afternoon is more for meetings and project works and requests. People request for something to be set up and so we do them in the afternoon.

EC: So, can you describe the digital infrastructure of the museum? Such as the Wi-Fi, the software that's available in, I guess, both buildings are what we're curious about. The setup in both here [Cable St.] and Tory St.

YW: Okay so, we have a wired network as well as a Wi-Fi network. There are two main parts. One is Back-of-House and the other one is Front-of-House. In saying that, we still have some other devices connected to a different network that we don't look after. But we provided them and it's being looked at by external people because it's for our security system. So, mainly, as IT, we mainly look after our Back-of-House network. So Back-of-House will actually have Wi-Fi available as well but that's a hidden Wi-Fi that we've given to you guys. Even though it's called FoH and is still available Back-of-House. So Front-of-House is a very old system and we don't get access to it. It's usually looked after by the AV team, the Accordnal Technical Services team I think. But our job is actually just to look after the Back-of-House. And that will have, umm (pause) wireless is actually not the network wireless, it's just our site to the Internet. You can't log onto wireless and then access your internal files. So you have to log on to a wired network for that one. So, software and bandwidth. I don't know anything about bandwidth because I don't get involved with the actual networking side of it. What do you mean by available software?

EC: Just what does the museum currently have just in general in terms of software licenses?

YW: Oh, okay. Of course there's Microsoft Office so I think it's 2013, also 2010. All the computers should be Microsoft Windows 7 and all the servers are 2010 or 2012. But I think Neil can probably confirm that a bit more because he looks after the server side of things. And we've got three different computer setups. One is Zero(?) Client. That is where some of the small boxes you might see on some computers and they connect to the virtual network directly. And then the other one is actually called Thin Client, so that PC acts like a Zero Client, although it has a hard-drive attached to it. It doesn't really use the hard-drive. The only time it uses it is to latch onto the virtual environment, and you log straight onto that. And then you've got Fat Client. Fat Clients are given to people who require extra software installed on them because virtual environment is very limited and installing software on there is actually quite difficult and it's not customized enough. It's for everyday use like if you want to use emails or Microsoft Office or Adobe or something, you can use that and it's easy. And if you want to get onto Pou Mataaho, our document record system, you use that. But Fat Client, a few people actually have special software installed. So there will be Adobe Illustrator, Type, Photoshop, and a few things. A lot of people have different software on there so I don't even remember who has what but we do have registry of software license that says who belongs to what. So things like VectorWorks, I think that's an imaging software, that belongs to the imaging team. So they have the license and we look after the license. They have about 3,000 (NZD) a license so that is quite expensive. And so, those people actually have Fat Client computers. Fat Clients are the ones with the hard-drive we install, the operating system on them, and install the software on them. And then they do have an option to access the virtual environment as well.

And then, as I was saying, we've got a Mac group/team of people. There's probably about ten of them and they use Mac to make their pitches and drawings. And they do latch onto our network as well so they can use our network resources.

EC: So in your opinion, what are the constraints of the system that's currently in place?

YW: Network. A constraint for us, I think, is the infrastructure of the network. Cabling, I guess, as well. If you look at the wall, some of them have labels and some of them don't (referring to wires coming out of the wall). So, to start, how do you troubleshoot it? If this computer doesn't work where do I go and find this? It doesn't even have a label on it. So every single port that the computer connects to should have a label there. It's corresponding to the switch panel back in the cupboards. And then correspond them and you do the troubleshooting there. So, some of them are missing labels and I think it's the general tidiness of the actual networks and cables are all lying around so you can easily trip over and disconnect and it's hard to find out where it came from. So that's a constraint.
I also think the telephone system is a bit outdated. And possibly, it's not really a constraint, but because Te Papa has to answer to their government, and I think there is some standard that we have to follow. So, you can't just go and install anything you want. It has to be approved by this person, that person, that department, etc. So say for example, our finance system is called TechOne(?) and that is used by quite a few government departments so we have to use that. You can't just choose the best system that's available. So I think rules and regulations are a constraint to the infrastructure as well.

EC: So, how often do you work with the conservation staff? And can you describe your working relationship with them?

YW: Not often. Maybe once or twice every two weeks type of thing. So it's not much.

EC: And is it just troubleshooting?

YW: Yeah. Some people will ask how to do a particular thing like, 'How do I transfer these files from one place to another? Can you help?' So it's all general help as well. It's not much troubleshooting for them.

EC: What is your understanding of the conservation team and the role that they perform at the museum?

YW: My understanding is that they make sure everything is looked after properly, anything useful or valuable stuff or anything fragile. So they need to make sure that everything is documented, recorded, and then put in its proper place. And that's really important.
So most of the time, we're not allowed to go into their rooms because that's just where everything is stored. So just in case we touch them or move them. So we usually just don't deal with them in their working environment that much. We deal with them outside of it because they have their own offices outside. So I just regard them as one of the departments that is nothing special for us. They're all users of computers and that's pretty much for me.

EC: How familiar are you with the KE EMu software?

YW: None. Not at all. I don't even have access to it.

EC: Oh. Okay. So I guess for question 9, to the best of your knowledge, how does the conservation team use the software?

YW: Yeah, I have no idea only because the only one time I know is when someone scans lots of images and they want to upload them to the EMu system and it was being very slow problems with the networks so that was the only time I noticed, 'Oh okay so you do download, upload pictures to KE EMu.' And that's that and I don't really know anything else. Because there's a team for that, you know that?

EC: Right, yes we do. We were curious how much IT had an overlap with conservation.

YW: We usually just give them access to the program. So when a person starts and they say, 'We need KE EMu access,' we will say, 'Okay so we are adding the icon to your login.' And then the KE EMu team will create a login name and password and they will do training with these people. So we don't touch it at all. Like I said, I don't really have access to it.

EC: So what is your opinion on the uses of images and other media in condition reports?

YW: Pass.

EC: Okay. So do you have any additional comments about the museum's technology?

YW: At the moment, I think it's a little bit outdated, as in the hardware wires. They look good from the outside but inside I think we need to upgrade the actual hardware as well.

EC: So if you could, with no limitations, have your ideal system for the museum, what would that be like? Dream big.

YW: I would like everyone to have laptops instead of having a fixed desk because it is like you're tied to a desk. But if everyone has a laptop and they move around, less resources are required as well. At the moment, one person could have two laptops, two desks. I have met a person who has two desktops because he resides in Tory and also here, and then they have a Mac laptop. And also they sometimes want to have a PC laptop to do things. I wish there was only one laptop that can have access to everything from that. And I like the idea of B.Y.O.D. People can bring their own device. As far as the hardware is concerned or even as far as the upgrades are concerned they can look

after themselves, the hardware and software, but we will look after the network side of it so they can connect to our network. And then within that network we will provide that standard programs. I guess this is IT as a service maybe, so that's something we want to offer. We don't want to have to worry about your hardware issues or other issues that you might bring in with your hardware. We don't look after that. So that would be really good so that way we could concentrate on the technology that we provide. That would be really cool. And no Mac's.

EC: Aww. (laughing)

YW: I like Mac's but they're so difficult to look after with our Microsoft infrastructure. They have a lot of issues.

EC: Yeah, Mac and Windows don't usually get along.

YW: They do it on purpose.

EC: Do you have any opinions on security if you were to do Bring Your Own Device? Because I know that was a topic of conversation was how do you manage that in terms of corporate security if you're bringing your own devices?

YW: Well I guess the corporate security can be looked after. As soon as you want to get onto the corporate network, you got to go to a VDI like you guys do. You guys pretty much are actually B.Y.O.D. You got here, we gave you access to a particular side of our network, and you access it. But then your devices are your own. So, we will look after that little icon, that communication, and once you get into it you can print and all of that and we'll look after all of that. That's the security that's put in place. So you can only access it if we give you access. So yes you can get onto the network because you know the password but it can be restricted as well.

EC: You mentioned before that the virtual machines tend to have an issue with lag time, and storage, and in terms of using bigger programs. So how would you visualize the machines handling those bigger programs? Is there a way to do that? Because we were considering an option as a potential solution for people that are going abroad with loaning or touring exhibitions, that they would have a virtual client and be able to use their own device. But if they can't access the programs then it kind of makes that a moot point. So is there a way to give them a bigger, heftier access as opposed to just the Thin Client?

YW: Again, it would depend on where they go. You know that New Zealand is actually a few years behind in terms of Internet technology. So it doesn't matter how fast your network will be. At the end of the day, it will be dependent on the Internet connection. So you could actually make your back end really fast and quick, and then your own network very fast and quick, but if the actual link is not handling that, it's still going to be slow. So, it is pretty much limited to that Internet connection, if you're overseas, for example. And also it will probably be dependent on the country you are in. If you go to my country, you can't even get onto the Internet because it's just congested. Maybe they got a 126 MB link for the whole country and everyone needs to get on. So yeah it always depends because you could be accessing it from a hotel and that depends on hotel Wi-Fi. How much did they give you? Is it free? And then they only give you so much download capacity. So it really doesn't matter how good your computer is; it is only as good as the link.

EC: And would there be a way to provide remote access to certain software and certain sub-sects of files? So if you know someone is going to be away for X amount of time, they need access to this many files, and this many high resolution images from a certain object category.

YW: Well there is a system called, do you know Drobox?

EC: Yes.

YW: It's not Drobox. We use something called HighTail. So if a person knows that they're going overseas and they need these files, they can upload them to HighTail. So they can access HighTail, and download them on the other side. I guess that way they're not really coming back to Auckland to download it. So HighTail could be hosted in America but I don't know where they're hosted. It depends on their vendor. So that's a solution that we gave them. If they needed it while they're overseas, they could just ring up their old colleague and say, "Hey, could you upload a few files onto HighTail because I can't access it." And then they can download it from there. That way they at least have access to it.

EC: I was wondering if they would be able to go into HighTail the day before they left and download all of the files needed so they're concrete on their computer and they'd be able to access them once they're remote.

YW: Could you repeat that?

EC: So with Drobox, I know you'll have all of your stuff pushed up there and you can download a copy from Drobox onto your machine. So is it currently allowed for them to say, "I'm going away tomorrow to this remote country, I have ten files I want to download," go into HighTail, pull those down, and have them concrete on my computer. Is that allowed right now?

YW: Yes.

EC: Okay, so it doesn't matter regardless if it's your computer?

YW: That's right.

EC: Okay so...

YW: Oh, it's not personal computers.

EC: Oh, is it restricted?

YW: Well because you can actually access HighTail from your personal computer anyway, so they can download them onto their personal computers with no problem. So there is no stopping them. It is their own responsibility. If that's Te Papa's information, they need to understand they have to sign a form saying we're not going to abuse this. So that's their responsibility to look after that. If they lost the information, there will probably be a penalty. I don't know that part.

EC: But that's still currently an option right now?

YW: There is an option, yes. And nothing is stopping them from copying details from their network onto their thumb drive. For example, you can load it up all on your thumb drive and take it with you. That's no problem. And you can also loan laptops on the way. You know how we gave you those little tokens to connect?

EC: Yes.

YW: So if you want to connect back to the network, they can do it that way. So there's really no restriction for them. They can access it. It's just some people don't know how to.

EC: Well I think that's everything. Unless anyone else has any other questions. [referring to other interviewers present]

YW: Cool. Sorry about the delay again.

EC: Don't worry about it! If we have any additional questions we'll ask you.

YW: Yeah, just give them to me!

(End of Interview)

Appendix G. Te Papa Staff Interview Quote Spreadsheet

The following spreadsheet contains the quotes from interviews with the staff members from the three departments at Te Papa, Conservation, IT, and Digital Collections and Access. The following spreadsheet contains the interviewee who stated the quote, and the quote the team felt was important. The team colored these quotes based on theme, with the theme of access as yellow, communication as red, mobility as green, imaging as blue, and process as purple. The team used an additional color, grey, for outlining quotes that the team initially felt was important but does not describe a specific issue a staff member had with the CDP. These were labeled as "non-issues." The team also began the quote using bracketed letters to ease the organization of the spreadsheet. Access begins with "[A]," communication begins with "[C]," mobility begins with "[M]," imaging begins with "[I]," process begins with "[P]," and non-issues as "[NI]."

Following the spreadsheet of quotes are tables that label the amount of times a core issue is mentioned among staff members in each department. This table contains the theme, the interviewee who mentioned that core issue, the number of mentions of Conservation, IT, and Digital Collections and Access staff, and the total number of responses. The team came to these numbers by going through the list of quotes and determining which core issue the quote best addressed.

Interviewee	Responses
Shane	[A] It's easier for me to search in catalogue under object. And then it'll either bring up no objects matched or so many objects matched that then I have to scroll down again. So once I get familiar with that, then I can get into KE EMu and start looking at it with more details like description, whether it's had any treatment, and if there's any curatorial notes as well. And that's quite intuitive but sometimes I find when I'm trying to print up a specific report, it doesn't actually do that for me.
Matthew	[A]And I want them eventually to go into our systems. Whether it's right for EMu or as an historical archive of the frame, or images of frames.
Anne	[A]and quite often there isn't, this will be the only image that exists because it hasn't been – since this time – digital imaged.
Anne	[A]And so if there's confusion around all these brown silk dresses; what's the registration of this one, it has no storage location so it's missing in the collection.

Shane	[A]and that we'd all have our own ones. You do have to share a lot of that material even if it's just using cameras around here.
Robert	[A]And that's an issue of security as well. Having a comprehensive history of objects or collection objects and reasoning behind them, why we acquired them from a curatorial perspective, conservator's perspective, collection manager's perspective, having that.
Linda	[A]And the only way you can search is under your name and the date that you created it. And you have to go through all your records to find it.
Shane	[A]And then later on, I'll input all of that onto KE EMu because it's got a little template so you can fill that out. These are quite brief. The only reason I'm brief is because there's so many of them and because of the conditions of them.
Tijana	[A]And we can't access EMu remotely.
Tijana	[A]And we can't actually just put any sort of program that we necessarily want that could be helpful for us unto our computers
Linda	[A]available digitally
Tijana	[A]But as not as if people are doing something on purpose, someone could be doing something unintentionally, wipe out something.
Anne	[A]But if we could just look at having Adobe on laptops for each lab, that would probably ease – that would make it easier for people to generate these things as JPEGs in the first place. And it would be more likely that information would be preserved with the K-EMu record.
Anne	[A]But if we could just look at having Adobe on laptops for each lab, that would probably ease – that would make it easier for people to generate these things as JPEGs in the first place. And it would be more likely that information would be preserved with the K-EMu record.
Robert	[A]But it won't have the application for EMu on it. So it'll come onto my desktop, I've got remote access for whatever, email and such, but if I want to get on the EMu database I don't have access to that. If I'm sitting in a hotel in San Francisco, trying to find some information on the object I have to email Nirmala here, saying "can you please?" - or make a phone call, which is a bit silly. But if that's needs to be done then it needs to be done
Anne	[A]but it's just that once something is incorporated into K EMu, it becomes difficult – it's like another administrative task that we have to go through to then generate, go back and get the high resolution image again so we'll just – it's just better, we would prefer to just keep it so we don't have to go through that – we know where it's saved, the quality it is, and all that stuff.
Anne	[A]but it's just that once something is incorporated into K EMu, it becomes difficult – it's like another administrative task that we have to go through to then generate, go back and get the high resolution image again so we'll just – it's just better, we would prefer to just keep it so we don't have to go through that – we know where it's saved, the quality it is, and all that stuff.
Jenny Cauchi	[A]But otherwise ones that already exist in there that we use for condition report depending on how high res we want it, we ask the imaging team to put a high res copy in a file for us on the shared drive because we can't download the highest res thing directly from EMu.

Robert	[A]But the remote access is a big point for me. It's also a big point for our touring managers and collection managers. It would be really nice to, if they're so far out making a delivery of artifacts to wherever, they always carry a hard copy, but if there's an issue they could look on the database and go "okay, these are the images, this is the report and now I understand."
Jenny Cauchi	[A]But those condition reports that we get externally, they stay with the loans and acquisitions team
Tijana	[A]Especially, also, I think it would be more annoying if you were travelling somewhere with objects and you don't have that ability to connect to the digital aspects
Yu-Yu Win	[A]Fat Clients are given to people who require extra software installed on them because virtual environment is very limited and installing software on there is actually quite difficult and it's not customized enough.
Neil	[A]From the network side, the hardware has all been replaced in the last year and a half. So that's all brand new HP switches. The constraints around the network are the way it's configured. It was configured as a class B subnet, but it should be multiple class C's instead, so there's a bit of broadcast traffic which is causing issues.
Shane	[A]have to share a lot of that material
Carol	[A]I also think storage is an issue for me in terms of EMu, and particularly our media repositories.
Yu-Yu Win	[A]I also think the telephone system is a bit outdated. And possibly, it's not really a constraint, but because Te Papa has to answer to their government, and I think there is some standard that we have to follow
Yu-Yu Win	[A]I don't even have access to it.
Carol	[A]I don't know if I have an ideal vision of what I want it to look like, but what I want is ease of use, the ability to extract and import back into our core system and repository for our data, and the ability when worst case scenario isn't there.
Sunita	[A]I haven't quite figured it out myself
Linda	[A]I know it won't happen, to have the ability to do high-res stuff on our desktops, but I know that's an institutional issue about the way that whole thing works.
Sunita	[A]I need to get into my local environment for things like photoshop because I don't have it in my virtual so I can't use it if I'm working from here so that's the only sort of problem that I have sometimes but I can sort of plan around that
Linda	[A]I suppose the printing capacity from our computers is limited.
Shane	[A]I think because my focus seems to be more on monitoring the environment, I would like programs that we use for our data logs to be on the system because at the moment,
Jenny Cauchi	[A]I think some of the technology that we have which is a bit old and slow and probably verging on obsolete doesn't help that immersing, when things are quite clunky and slow to use and you have to wait for them to work. I think some of the admin aspects of printing and scanning all that, that's definitely a pain

Jenny Cauchi	[A]I think the things I find trouble with are searching sometimes for specific things, it is a little bit slow and you do have a lot of windows open a lot of the time. Inadvertently sometimes I put too many things open at once and I put the wrong information for the wrong thing - it's pretty good though, I don't mind the EMu software. I guess there's not really a link to - we can put a cross reference with a record that's in our record keeping system, Pou Mataaho, but I don't think people do that very often I feel like there's a bit of disconnect between it and that system, and maybe that's not a problem, but it might be nice to have more links between those two somehow.
Sunita	[A]if location coding can be done is it, what is it just like barcoding you know, those things would make it quite efficient I don't know if conservation if there's yeah mostly for moving objects around that would be useful
Shane	[A]If we had better access around here and better programs, I think I would use it more.
Tijana	[A]If we're sending this to another organization, and if we send a digital thing, do they have the equipment to be able to digitally have that up close next to the artwork to be able to compare and look at it.
Jenny Cauchi	[A]If you want a report that's slightly different from the ones we already have, that's, I don't know, months for them to do a new report, to make a new report template and that costs money so they - sometimes some of the ones we use are mostly good
Yu-Yu Win	[A]It is their own responsibility. If that's Te Papa's information, they need to understand they have to sign a form saying we're not going to abuse this.
Anne	[A]License fees, I believe
Yu-Yu Win	[A]Network. A constraint for us, I think, is the infrastructure of the network. Cabling, I guess, as well. If you look at the wall, some of them have labels and some of them don't (refering to wires coming out of the wall). So, to start, how do you troubleshoot it? If this computer doesn't work where do I go and find this? It doesn't even have a label on it. So every single port that the computer connects to should have a label there. It's corresponding to the switch panel back in the cupboards. And then correspond them and you do the troubleshooting there. So, some of them are missing labels and I think it's the general tidiness of the actual networks and cables are all lying around so you can easily trip over and disconnect and it's hard to find out where it came from. So that's a constraint.
Neil	[A]Not really. I've heard from some people in the past that image uploads can be a bit slow. Some of the images they're uploading are quite large. I think some of the photography guys downstairs are uploading batches of 250Mb images, it might be 300 of them at a time and that pushes them all up so, so that's going to be a wee bit slow. From a conservator's point of view, using VDI and doing this stuff in K-EMu, I haven't personally heard of any complaints.
Anne	[A]on laptops for each lab
Linda	[A]or it would be inappropriate that they have access to them. So I don't feel that our condition report photos should be accessible in the way as the general image of the work.

Linda	[A]Photoshop on them to get super high-resolution as we would like, so we have to do that on the computer in the photography studio.
Carol	[A]So I think speed is an issue, particularly around the virtual environment. That doesn't seem to be working as well as it could, or should work
Linda	[A]So we don't actually have access to high-resolution images and so we have to request them from photography and get them sent to us and then we print them
Tijana	[A]So you have to make sure you have everything perfectly written or you won't find anything.
Yu-Yu Win	[A]So, you can't just go and install anything you want. It has to be approved by this person, that person, that department, etc.
Tijana	[A]Te Papa will take those images and often we just ask them to send them to us
Robert	[A]The disadvantages to it is the remote access
Robert	[A]The lack of accessibility, remote, is a real pain at times.
Linda	[A]The other thing you mentioned, access, I think that's an issue too for conservation because other people – I would be reluctant to give access to non-conservators,
Sunita	[A]there is images still need to managed like EMu
Tijana	[A]They have to put it on the network folder, because they can't be sent by email. So we just go down to the I drive and access them on Photoshop.
Sunita	[A]thinking about the images again I think we are in the process of getting a digital asset management system so that deals mostly with the images that are not collection items
Robert	[A]This building does have a lot of metal in it and we do have a lot of cement walls so there is a problem to solve on getting through especially with security data and all of that. Another thing is I don't want to be … (?). It's pretty frustrating. …
Anne	[A]this is more about the kinds of things that aren't on EMu.
Linda	[A]we also have to use that printer to create these of a decent quality. So that's one thing that doesn't work smoothly
Carol	[A]We are always growing and I think that's the thing with our storage and particularly our media, it's not going to get smaller, it's just going to get bigger. And particularly high res images and stuff like that. Storage is an issue for us, but that's an issue IT are aware of and looking into.
Neil	[A]We do need to sort out a bit of networking that we have, it would make it a bit quicker.
Linda	[A]we have IrfanView that just generates some low-res stuff
Tijana	[A]We have one ancient, well we have two ancient laptops here that are used for specific things. And not for making condition reports. We don't have anything at the moment.
Linda	[A]We need to control who have access to those
Shane	[A]We've got four cameras, which have to be used
Shane	[A]We've got four cameras, which have to be used throughout all of conservation.

Yu-Yu Win	[A]wireless is actually not the network wireless, it's just our site to the Internet. You can't log onto wireless and then access your internal fil
Anne	[A]Yeah, we do, we have three. We could probably use another couple of cameras. Because I think ideally, each lab would have their own.
Yu-Yu Win	[A]You can't just choose the best system that's available. So I think rules and regulations are a constraint to the infrastructure as well.
Anne	[C]"Do you take paper notes and then input them into K-EMu later?" "Do you work with a laptop next to the object and do the condition reporting as you go?"
Shane	[C]Again, because I don't do a lot of condition reports, I don't have that much involvement with them. But I should; especially with the EMu staff because there's a lot of the functions I don't know how to use properly. I don't know how to bulk load pictures and it would be great to.
Matthew	[C]Certainty for somebody who's not a native digital person, I come from an era quite before that, so it's not the way I natively think, so I'm happy to apply myself to pick up those things that I need but not more than I need. If I don't need it, then why bother putting in the effort. And on the other side of it is I'm probably not noticing things that would be handy to notice. Bit of a trade off.
Jenny Cauchi	[C]Again if there's a group of things, I often do them in bunches so I can just copy some of that stuff that's all for the same exhibition, same date…you can kind of just chuckle that in and catalogue it in and just cut and paste the bits that pertain to that particular object. I don't find it too slow, but I'm sure there is a better way to do it.[P]
Anne	[C]and from that perspective of this information should be accessible to people outside conservation like collection managers who handle this stuff -
Linda	[C]And I have to say there's a different culture around the work in each area. What's sort of acceptable – just within the profession and within specialties, we approach things slightly differently, in terms of in painting and the detail in our reports and so on. It does vary from specialty to specialty.
Linda	[C]And I know EMu staff used to really make themselves available, and maybe they still do on a weekly basis upstairs. I think it's partly demands of the job. The other things you have to attend to in your working day, I feel like I – it's sort of a conflict, putting in the time you need to, to get a good foundation.
Anne	[C]And it's the condition record from thirty years ago. So we can look at that, and look at it now and decide its damage,
Tijana	[C]And quite often the places where we're sending these works, there aren't conservators there who can interpret what we would.
Robert	[C]And there needs to be an understand there as well. So sometimes a bit of paper is the best thing. That's rare. It's not common, but it does - and I probably will run into that again, but it's okay, because we are here to not tell people outside Te Papa what to do, but to assist them, facilitate, and help, give suggestions.
Shane	[C]Because I don't use it all the time, I'm not that familiar with it so it's always a bit of a guess for me trying to work out which tabs work, which ones I should be using, which ones for searching and that.
Matthew	[C]because of that it's going to be harder to learn, just one of those things.

Matthew	[C]Because those build up into histories over time that feed into the museum's understanding of what the object's had done to it by others, and how you can approach it in the future.
Jenny Cauchi	[C]because you don't know how to use it.
Matthew	[C]but I actually think the institution will benefit from having access to those things so they can make comparisons so can say "this frame I've got here, I wonder if something's in file, this bank of photographs that resembles it" and find something more out about it because of that
Jenny Cauchi	[C]But I think it's got a lot of the adaptability we don't fully take advantage of really, yet
Jenny Cauchi	[C]But there are pick lists like that where I wish we had the ability - and I know they're trying to keep it consistent and put some control on it, so I get that, but it just does create a bit of a stumbling block when you want to do something right away and you go "oh, I can't actually edit this myself" so I have to go through EMu and say "can you add" - I don't know if you've looked at EMu or any of those lists or that, but it's under the part of the condition report tab that's not free text, it's the one that has the kind of field search.
Sunita	[C]but this year we tried to give most of the conservation staff image loading training, I think we did cover most of the staff and we had several sessions in Tory street so yeah we are constantly working with them on that one.
Shane	[C]But, I'd probably like more descriptive words. It's probably my fault, I need to get in touch with EMu stuff but I think about putting this word in and only when I'm doing the condition reporting I think, 'I should've put that word in.' But that's just small tweaking of the condition reporting format. I think I'm quite happy with how the condition reporting works.
Jenny Cauchi	[C]Disadvantages? I think there are a lot of steps you sometimes have to go through. You have to open a lot of windows, dragging things around, just to get one record completed. And you're sitting there waiting a lot of the time, waiting for things to open. So I find it a little bit slow in that sense
Sunita	[C]EMu the software might not support the latest version so there's just the programs talking to each other and there might be some issues some times so yeah.
Anne	[C]everyone's kind of in a different place with it depending on how much other stuff they have going on.
Jenny Cauchi	[C]I don't always remember to do it, but I've been getting better at it is to check off in that survey tab a quick thing like exhibitable, meaning it's ready to go, versus minor treatment, so we try to do that as well, but then as soon as you prepare it for the exhibition that's changed and you don't always go back and update it right away.
Neil	[C]I don't know a huge amount about the software itself. Just about the basically – I can push out the client and that's it.
Matthew	[C]I don't know how much is down to digital technology and how much is down the different management types – ways of managing.
Jenny Cauchi	[C]I don't know if we get them yet and then things can come up very last minute like the curator hasn't been paying attention and suddenly they realize there's an auction two days from now that has something they want to bid on and they

	literally can't get that approval to bid till people put in the things that we have to run to the auction house.
Neil	[C]I don't really use K-EMu or any of that sort of view of how it populates.
Matthew	[C]I don't work very much at all with IT but I do work with EMu from time to time
Jenny Cauchi	[C]I feel like it's kind of a waste of time if what's going in there isn't any good. It's just frustrating. Sometimes when you look at a few of them you're like "hm, what's the point of it?" And if you just run a report and you see someone's done it, it looks like "oh great, that's done" but if you actually really look at it it might not be that good a record.
Tijana	[C]I had, when I started, one set up kind of meeting to go through it, but mainly I learned things from my colleague at the time who showed me things. You obviously miss out on a lot of stuff that way. And then since then it's usually, if you've got questions.
Matthew	[C]I just think it's much more capable than I know and probably will ever know, and that's good, that's how it should be.
Neil	[C]I know how the client works and how it connects through, but I don't know any of the specifics about how to use the K-EMu tool itself.
Tijana	[C]I know some people here have spoken before about "all the abrasions will be marked with red, and it'll be this symbol, and it'll be this." But we want to do our own things
Yu-Yu Win	[C]I like Mac's but they're so difficult to look after with our Microsoft infrastructure. They have a lot of issues.
Jenny Cauchi	[C]I lost it momentarily and then I found it again, I have to actually type it up, but I keep a little list of things about EMu as I come across them, because some of them are just really minor and if you don't write it down right away you forget. So I keep this little list, which I should send now because it's got enough things on it, to Carol to say "these are just things I've observed, or what's up with this?" Because it has some errors or flaws like we - it was doing something with dimensions where it was pulling the dimension you were seeing on this one printout - it was pulling one dimension from one area and one from a different area, which one might be a primary support and one might be a secondary support so it was creating things that were completely wrong, which had a big impact because they sent the dimensions to a tour venue and then of course their layout didn't work because they had these wrong dimensions, and that was just a weird error that it was doing. But you don't find those things until you're actually doing it a bit. But I find them very helpful when - maybe IT is more when we have actual problems with hardware, whereas EMu - the EMu team's quite good.[P]
Matthew	[C]I much prefer personally to sit and talk with someone because things come up as I'm going, and if I'm writing emails I can do that too but the whole process takes much longer to resolve, the questions don't come up necessarily in a strict sequence that I can predict, they come up by way of response to something. That makes me go "oh, I need to ask that." So it's better if I'm there. If then of course it's not that easy, you walk away and go "why didn't I ask about that" or something else.

Phillipa Durkin	[C]I probably could do with a bit more help on how to improve my searching abilities, but that's just me not EMu
Carol	[C]I think EMu has a lot of fields for conservation, there's a lot of data that could be recorded. I think there are fields that maybe don't necessarily need to be there, because they aren't used. You know when you develop a system you think of everything you could possibly want, and then when you're using a system you're only using this field and this field. I think the fields they do use are the fields that they require and the fields that they report on.
Linda	[C]I think I did, but I'm a bit lazy when it comes to this stuff and so I just sort of make do with the little I know and I contact EMu if I'm desperate. But I generally don't tend to approach them.
Shane	[C]I think just the variation we have in our condition reports. There's all types of condition reports that people do, like you do them for if you're going to do a treatment, you do them for loans, you do things that are coming into the museum, or you do them for touring; and you do them a textile conservator or a paper conservator or objects so you have different interpretations of what they're talking about down to what is the dimensions of something. What is the height, length, width even though they are standards of KE EMu. For example, if you get a pencil, people will describe what is the length and the height differently depending on the makeup of it. Or what is the damage on it? Everyone has their own different ideas on that. So, it's something that I think people do slightly differently; but at the same time, I don't think it is a huge issue. But maybe there is some type of standardization we can do, I just don't know how. We do a little bit through KE EMu but people have different ways of looking at it as opposed to different conservators.
Anne	[C]I think most people are reluctant to then delete the image. So we keep this all on our H drives.
Anne	[C]I think that that's why we prefer to just hang on to it, but everybody's probably doing different things
Linda	[C]I think that's really important and other people would probably feel the same way.
Anne	[C]I think the focus really has to come from our ability to do this efficiently without a huge learning curve.
Sunita	[C]I think they are still sort of ironing out some of these issues and with our own system
Matthew	[C]I understand why people complain. The complaint is usually revolves around – it strikes me at least, that's my interpretation – it revolves around its complexity and because it's complex it's hard to understand.
Phillipa Durkin	[C]I would need training on photoshop or whatever you use to,
Matthew	[C]I'd like to know the difference – be able to know the difference, tell the difference of when other people see the difference the way it looked before I did anything to it and the way it looked after I did something to it. And that's really important for everybody.
Shane	[C]I'm not too familiar with printing out the condition reports the way I want them to be.

Anne	[C]I'm sure different people are doing different things, so I guess that you guys being here and talking to people about what they do
Linda	[C]I'm sure there's a lot more that I could do and I could become a lot more fluent in it.
Linda	[C]I'm very old school and I'm afraid I duck and weave a bit when it comes to this stuff. Don't publish that in EMu.
Robert	[C]I've been told several things over the years. I've been told it's security, I've been told it's our hardware, I've been told the software doesn't support it. Depends who is the IT attendant.
Linda	[C]I've generally learnt from colleagues.
Linda	[C]important that's it's not a standardized thing, even within paintings you need flexibility about how you approach things and how things are.
Anne	[C]In a lot of cases there might be some confusion around the registration number or its location.
Robert	[C]it also is about the training and is about the trainers, and the people who get trained.
Shane	[C]It is handy. It's just knowing how to navigate your way around it really. Because it has all these different categories.
Yu-Yu Win	[C]It's just some people don't know how to.
Anne	[C]it's kind of 50/50 that would be known to them, unless the conversation happened to take place.
Shane	[C]like you do them for if you're going to do a treatment, you do them for loans, you do things that are coming into the museum, or you do them for touring; and you do them a textile conservator or a paper conservator or objects so you have different interpretations of what they're talking about down to what is the dimensions of something. What is the height, length, width even though they are standards of KE EMu.
Anne	[C]Like, "do you take notes?" "Do you take paper notes and then input them into K-EMu later?" "Do you work with a laptop next to the object and do the condition reporting as you go?" You'll probably get a range of different answers
Linda	[C]No not really, it's usually done remotely. But Steve said it was a very useful experience.
Shane	[C]No, I don't think I'm that familiar with the digital system.
Yu-Yu Win	[C]Not often. Maybe once or twice every two weeks type of thing. So it's not much.
Neil	[C]Not particularly often. I basically just look after the backend systems, so I look after all the infrastructure, the email, the main controllers, all that sort of stuff. I deal more with the K-EMu team from that point of view. The only reason I'd really deal with conservators is if they had an issue with a desktop machine or an issue with the network, something like that, printing. Wouldn't be very often.
Matthew	[C]Not that I don't want to know, it's just how much can you retain when you're not doing it quite as much?

Robert	[C]Occasionally, however my experience with them has been not the best of times. I'll be overseas going, 'I can't get into my email, I can't do this, what do I do?' and I'll get a reply that says to email the HelpDesk.
Shane	[C]Oh yeah. So we did the initial training, when initially it was launched, and that was maybe eighteen years ago? I can't remember. So you do your basic training and then you have ongoing training and they all have different features. They do have clinics that you can go to as well or you can ring up the EMu staff and they'll have a one-on-one with you. But yeah, again, because if you're not using it all the time, you do get a bit rusty on how to use it.
Jenny Cauchi	[C]One thing I don't like about EMu, is say for that survey tab I go in and someone's had it as exhibitable, but I know it actually needs some treatment, I change it to minor treatment. That previous record is just erased, it's gone, there's no history kept of other past - the latest one just overwrites it for that particularly tab. Maybe that's me being pedantic but I feel like I wish I could see back what it went through or the dates that somebody changed it to this or that. So I think that'd be quite important for, especially condition reports going out for loan and tour, that you could lock them down and see what changes - or would it be a completely new record, I don't know. You'd want some kind of timestamp, this date and this time.
Tijana	[C]Or if there's information that we would never send to someone at a loan institution, if we're just sending them, because we don't even talk about things on the condition and damages.
Shane	[C]People have different ways they want them done too.
Yu-Yu Win	[C]So most of the time, we're not allowed to go into their rooms because that's just where everything is stored. So just in case we touch them or move them. So we usually just don't deal with them in their working environment that much. We deal with them outside of it because they have their own offices outside. So I just regard them as one of the departments that is nothing special for us. They're all users of computers and that's pretty much for me.
Yu-Yu Win	[C]so that was the only time I noticed, 'Oh okay so you do download, upload pictures to KE EMu.' And that's that and I don't really know anything else
Matthew	[C]so they need to go – they have to rely on my mind because my mind won't be there eventually and that needs to be passed on to the system so they have the benefit of those things I've accumulated.
Anne	[C]So, I don't know what other people do. And I don't know how they find it in terms of being able to keep up to date.
Yu-Yu Win	[C]Some people will ask how to do a particular thing like, 'How do I transfer these files from one place to another? Can you help?' So it's all general help as well. It's not much troubleshooting for them.
Robert	[C]Sometime, they'll say, 'We're up here, you're down there. Why don't you just spend five minutes, find a desk somewhere and we'll log on and do it.
Robert	[C]Sometimes when you're busy or you need to have something now, sometimes that doesn't work. However, nine times out of ten, that's not an issue. And you gotta understand that there's only a couple of them.

Robert	[C]Sometimes, yes. Or a questions regarding how do I do this. Usually simple things like how do you upload images, how do we annotate images, or how do I filter; just basic stuff. And that's usually just a phone call.
Neil	[C]Sort of look after and make things run.
Robert	[C]That's a personality issue, however. The people from the … staff are a lot more responsible and outgoing. They are more of a service provider. But do they understand the business that I'm in? Do they understand what I need, what I need as a conservator? Probably not because they've probably haven't worked in a museum before or ever worked with conservators or collections managers. So what I need is probably quite a different thing and why I need it may not be that important to them. So then I'm understanding what I need is my business as opposed to their business. We could work on communication there.
Anne	[C]The condition report was done – if this isn't checked it could be because somebody else was assigned as objects or it had an existing condition report that did not need to be changed.
Linda	[C]The language is like this technical professional language that other conservators understand, and it's consistent with museums around the world. And it is – so we use a slightly different language to objects, different language to textiles, different language to paper, so there's that. And there's the consistency around that. But then as you said, we have to account for that.
Tijana	[C]Then there's giving advice to people like collection managers
Robert	[C]There are aspects of EMu that they will actively try and change for us but sometimes what I want to get across is not necessarily what people hear. And sometimes people will come up and say, 'This is what you need because this is the product I've been trained in.' But I'm going, 'I would actually like a product that does all this.' 'Oh I don't know about that because a product like that doesn't exist.'
Jenny Cauchi	[C]There are certain parts of EMu we probably don't use fully because they haven't been set up quite right for us so we just avoid them. Like there are some drop down menus and things for condition reporting, which we should be putting things in because it's searchable fields, but the list of items doesn't include the things I want or the terminology I prefer, I guess, and you can't change it yourself.
Anne	[C]There are conservation standards about photo documentation. We've never been asked to produce any kind of guidelines about that or anything.
Robert	[C]There has been training, but it's also - if I need to find out I will find out. Sometimes you don't know what you don't know until you know you don't know. And sometimes the training I need is very focused on "this is what I need to do, this is the big picture." And it depends on the learning style as well. Some people will be brought in and they're quite different from me, and maybe some of IT trainers are used to more of a - Te Papa is a corporate organization, but more of a, say business corporate entity than what we do here, so some of the technology and language is not the language that I would be familiar with, in the same way that if I talk as a conservator on treatments

Tijana	[C]There is a training thing that's a short training thing, but it's a little bit often an overload at first, and you get a little handout, but you're not using it so much so it's not until you really start doing your work that you learn how to navigate it properly.
Linda	[C]There's probably still more room for them to understand the sort of functions we require because it's so particular.
Linda	[C]There's some things between when you're making certain reports, we used to have quite a few problems with depending on if it was touring or if it was a loaned one, or whatever. Pulling up certain information like handling instructions, light levels, and things like that would do different things depending on what type of report you were choosing to print out. And it would be really frustrating because you would have go into all these different EMu tabs and fill in different things to try and get something.
Robert	[C]There's, of course, issues of obsolescence, hardware and software dies, corruption, loss of resolution as you upgrade, and there's issues of migration.
Linda	[C]They give us certain information, and other people would not know how to read the
Matthew	[C]To learn what those connections are, how they work, how I will then participate in that. Until I need to know, I tend to not bother to know.
Sunita	[C]Usually I think it's mostly for either preservation of what we have or if there is a treatment required for an item, so they are involved in the treatment process if something is going out on loan they need to do a condition check if there is an exhibition they would need to do a condition check as well or if it needs treatment so they are involved in all of that and they usually, I guess how I understand it
Jenny Cauchi	[C]We don't - and this is probably more a resource than time thing - I feel like we don't get any - other than our own quality checking that we're putting in - I don't know if Gillian's ever done a proper say, audit of the quality, type of information being putting it.
Jenny Cauchi	[C]We don't have any admin assistance here for anything actually
Tijana	[C]We recently had a session, as I said to learn how to upload images into the catalogue.
Sunita	[C]we tried to work with the conservation team we have in the past given imaging loading training,
Robert	[C]we'll look at the object and say, 'Okay, this condition hasn't changed.' But for someone who's never seen it before, it's in terrible condition. It's stable, it hasn't changed and that's what I'm interested in.
Tijana	[C]Well, we just recently learned how to upload them.
Carol	[C]Whenever they require a change or they – like recently, Gillian and I worked on some new pic lists – and cleaning data associated with that. So sort of they came up with an idea of what they had recorded ten years wasn't quite what they wanted so we did some data cleaning and changed those terms and those lists. So it's usually as and when I'm contacted by conservation. If they have problems with reports then they contact me.

Jenny Cauchi	[C]Yeah, I find that it's hard - if you don't put something in exactly right, it doesn't find anything. I always forget how to do it so it's a wildcard to find part of it, there are certain things like that that I don't search enough that I forget every time and have to ask them again. I have one little cheat sheet but I need to add more things to it. But I like that we have - I've used different systems at a lot of different museums and it's just as good as any of them have been. None of them are like amazing, but it's better than some were.
Shane	[C]Yeah, there are some people that can do it but I don't know.
Phillipa Durkin	[C]Yeah, we had those full workshops. I think it was a whole day or it might have been even been two days. Yeah I'm sure. Before we changed over to EMu we had a lot of training and I find them… I'm not as au fair as some people are.
Tijana	[C]Yeah, we wouldn't talk about these things in detail, that's more for us to keep in our records. So that's a different kind of condition report.
Shane	[C]You can describe and people interpret it differently; or you may think this is an accretion, other people may not think it is an accretion. Or you may think this is an existing damage; and they may think this is a new damage. But if you've got the image in front of you, there's no disputing what it is. It's a lot more accurate than taking notes.
Robert	[I]Also, the loss of data through migration as well. So that classic old thing of photocopying an image ten times, you end up having a high-res to very low-res.
Anne	[I]the layers don't exist in digital form, only in analog form.
Phillipa Durkin	[I]If I can draw on the photograph with my own scribbles that's what I'm after not the generic shapes that some programs give you.
Linda	[I]marking things up in the way that we do on these reports is sort of paramount really.
Robert	[I]And I know that with the images we take, the cameras we have, the metadata is kept with the image. Now why can't that all just be loaded up and kept with that file as opposed to me going "okay on this day we did this aperture, we did this light setting."
Linda	[I]and it's too hard to mark on the photo, on the main photo like that. It can take days as well. Often it's the more minimalistic surfaces that present a lot of problems in condition reporting. Because the features are so open to interpretation, and so hard to document.
Anne	[I]And that's probably not unusual. They're not temp(?) images, so they're deteriorating I guess. With compression and stuff. But I think that's one of the conversations t[C]hat hasn't taken place, is from a conservation point of view this is essential documentation about the object that should not be degrading over time, but we just aren't sure, we're not confident about how it's stored.
Anne	[I]And to just kind of scan it into a photocopier, seems like you'd ended up with something very ad hoc and probably not…who's knows if this would be visible.
Tijana	[I]And we're not talking about – maybe on a big treatment, we're not talking about putting up five photos, we could be putting up 60, 70 photos on an overall treatment.
Robert	[I]And when we're doing condition checks I'll load the images so people can actually look at those images.

Tijana	[I]Because sometimes these images are not cropped properly, so we have to crop them
Sunita	[I]because sometimes they can load individually but we help them load in bulk as well so even not just for conservation
Anne	[I]Because they do a lot of last minute jobs taking photos at events and they get called out to do stuff.
Robert	[I]Because they're not optimized for our system, and the system may - might have been set up for someone who only does holiday snapshots, as opposed to very large high resolution images
Anne	[I]because we have to collate them separately anyway, because the report tool does not print off a report with all the images attached.
Jenny Cauchi	[I]Because when those things come back, we don't scan them back in but we have to check them and go into EMu and either annotate or put in a new record saying "no changes seen" for all these different venues so there's that bit of additional reporting we have to do that's quite - it doesn't seem like a big deal when it's one or two paintings but when we have like 50 works of paper come back, our volume is quite high compared to some of the other areas where you might only have one or two things.
Tijana	[I]because when you're marking over certain color paintings, certain colors won't be so visible. You want to be able to choose every aspect of that yourself.
Shane	[I]bulk load pictures
Shane	[I]But at the moment it's very much just get the image, put the image up, put an overlay on it, and mark it up with a felt tip pen and then referencing it to the notes.
Anne	[I]But I don't think it's necessary to have all of our stuff – if we do that I think it's accessible enough,
Anne	[I]But I think you're right that having a really high quality image to start with is important too and we don't always – for whatever reason – it often takes two weeks.
Phillipa Durkin	[I]But if there was an improvement, I guess it would be to attach the photo that's been drawn on like there's an app for that.
Tijana	[I]But if we're getting something like that, that's going to be an overlay that we're making up, the photographers from
Anne	[I]But let's say I did that and it was serviceable, the layers would not exist separately.
Jenny Cauchi	[I]but the problem in the past of why we haven't been putting them in there is because they have to get attached to the catalogue module
Shane	[I]But to do that, you have to get your TMP numbers in the right order so you can go into KE EMu. It just makes me want to go to sleep just thinking about it. So instead I'll just say, 'I have all these images I need loaded,' and they'll do it for me; but it would be ideal if I could do it because sometimes I just have one object I could load but I'm in bulk loading.
Anne	[I]currently there are no images that get attached to that.

Sunita	[I]do we not put in high res images or you know like so if a work might have 200 images attached to it, so sometimes to when we open up that work or in EMu not the actual work it just slows up that record a bit so if, I guess that's more an EMu thing, but if we could still load the images but if we could be a bit faster I guess that's just the speed you know if you could still have high res images attached to the collection item but just a bit faster and yeah because there's a few works there that have over 200 works and it's not just conservation images its other images as well, but yeah just opening it up sometimes takes a bit longer.
Sunita	[I]do we not put in high res images or you know like so if a work might have 200 images attached to it, so sometimes to when we open up that work or in EMu not the actual work it just slows up that record a bit so if, I guess that's more an EMu thing, but if we could still load the images but if we could be a bit faster I guess that's just the speed you know if you could still have high res images attached to the collection item but just a bit faster and yeah because there's a few works there that have over 200 works and it's not just conservation images its other images as well, but yeah just opening it up sometimes takes a bit longer.
Matthew	[I]finally to uploading all the images. How do I do that?
Robert	[I]For the whales show, as an example, we've got hardcopies but there's also a couple of memory sticks that have about a thousand images on them. There's 120 objects with about ten images.
Anne	[I]have all your images on Google Drive and you can download them from Google Drive, write on them, and then that's a JPEG that you've made notes on, and that's pretty straightforward, but how do I get this off my device and back onto here? I have to email it to myself. And it's like, am I going to spend two days emailed 200 images to myself? And then that's not even the end of it. Then, I have to attach each one of those to K-EMu. And then if I wanted to print off a report that image is not going to be on it anyway. Do you know what I mean
Anne	[I]how to generate this, using not an overhead transparency piece of film, and exploring what those options are.
Robert	[I]I can upload images
Anne	[I]I do too. I just think there's the issue of the image quality and storage,
Phillipa Durkin	[I]I feel some of the processes take a long time like uploading photos onto that.
Anne	[I]I know some people have hundreds of images on their card
Shane	[I]I mean even the fact that you're using the cameras makes it so much more instantaneous because we used to use film and you'd need to take the photo and then you'd have to get it processed, and then you get the prints and then you can write them up. Now it's all digitized.
Anne	[I]I think the other issue is that once images – we're generating a lot of these media, these JPEGs and things ourselves, and we attach them to K EMu, but we don't –

Tijana	[I]I think they can go on somehow and get them, but if you look back at a lot of old reports that have been upgrading from the old system into EMu, we often don't know where any of the images are for these things.
Phillipa Durkin	[I]I try to keep that up and add photos to my reports
Robert	[I]I would also like a system where the uploading of images is a lot more intuitive. And is upgradable as well, cause I know that five years from now the suite of technology will be completely different, and devices will have changed and be different as well. How do we keep on track of that obsolescence?
Matthew	[I]I've got actually thousands of those, literally thousands of those from all of the world which I've taken myself or gotten from various sources. Those things can go to our general *inaudible* of the system.
Matthew	[I]I've got large amounts of images which I want to load – I've got loads of images on my H drive which is my personal drive, before we have a more corporate kind of system of electronic management that we've now got in place.
Matthew	[I]I've got this listing of one or two particular frames, particular artworks that required a lot of documentation, and hundreds or images that needed to go in.
Anne	[I]I've just never tried it, I've never seen what the outcome is to scan it and turn it into a PDF file.
Robert	[I]If I've got an object that has 20 images - I've got an object that we did over 300 images. Now if I'm loading that and it takes me five minutes or minute to do every image, that's an enormous amount of - and I'm going "there's got to be a way to bulk load this." Or can I just drag and drop? Drag and drop, drag and drop, drag and drop, that would be the preference for me. It might not be the same for everybody but for me it seems crazy that we can't - you've got your folder of images, you just go "copy paste, copy paste, copy paste." Why not?
Shane	[I]It might just be us. I mean, because it is the easiest option, we can get them to bulk load them. So we give all our photos, for example, again, getting back to the My Little Ponies, so you have 30 ponies but you have four images for each one, so that gets to be quite a lot you have to bulk load.
Anne	[I]It's not stored on K EMu at all, at the moment.
Matthew	[I]like recently my interactions have been about the uploading of images into EMu
Robert	[I]means we can make more informed decision that are more appropriate for the collection item
Anne	[I]Not really, it's just because our in house imaging team is probably a little bit under resourced as well.
Jenny Cauchi	[I]other hand the image quality you get from looking at an actual printed image with a marker is very high.
Shane	[I]People want to do copy stains, people want to do studio shots, people want to shots in the lab, so you always have to find the equipment to do that. Again, it's about resourcing I think.
Robert	[I]People will send us very large images, very large files, they won't come through.
Anne	[I]print it off, and then we lay a print

Anne	[I]So I guess it's just a matter of feeling like there's a better way, but we don't have it.
Jenny Cauchi	[I]so ideally the image would get attached to that work in EMu,
Shane	[I]So instead I'll just say, 'I have all these images I need loaded,' and they'll do it for me;
Anne	[I]So that could probably be easily attached to the K EMu record.
Linda	[I]So things have to get scanned
Tijana	[I]So we haven't been uploading them anywhere
Anne	[I]So we would not be able to generate a report with all those images,
Sunita	[I]sometimes people load it into EMu you know so they are trying to get...
Robert	[I]The disadvantages are the loading of images, because every image needs metadata with it, so I need to manually put that metadata in
Robert	[I]The ideal situation is that we would generate a condition report on EMu, and that's the main one, and as well.
Yu-Yu Win	[I]the only one time I know is when someone scans lots of images and they want to upload them to the EMu system and it was being very slow problems with the networks
Anne	[I]The resources to not only do it, and then to make that data – how to sustainably attach it to the K-EMu record in accordance with what Te Papa wants.
Jenny Cauchi	[I]Then it gets scanned in and put in Poh Mataaho in the related loans or tour file
Phillipa Durkin	[I]then it's there and then you attach it to the file that would be nice.
Sunita	[I]there's various parts of the frame or work that they want imaged and before and after treatment images and for all that just description would not be enough the images are quite vital to the process I think for capturing what's been done and so.
Phillipa Durkin	[I]upload a photo onto the program
Shane	[I]Usually in the objects lab here. Mostly at Tory Street in this lab. Sometimes I'll do them down at Cable Street, we have a small lab there.
Anne	[I]We are asked to schedule a session two weeks prior to needing the image,
Anne	[I]We are asked to schedule a session two weeks prior to needing the image, so that can be a barrier too if we need to produce some information on an object in a hurry you're kind of forcing into taking your own image.
Anne	[I]we have to be able to put that information back to K-EMu from mobile to a desktop without emailing it to ourselves, printing out hardcopies and scanning them through.
Neil	[I]We just assigned another couple of terabytes of space to the K-EMu server for basically uploaded images. The photography teams keeps taking pictures and taking pictures, and they're big ones.
Tijana	[I]we take our own images and we store them on our H drive
Anne	[I]well I guess you can use Google Drive or something.

Robert	[I]When I've got 300 images to upload to a condition report, to a treatment report. Why am I spending three days doing it when it could just be a file that gets zapped over and the images get changed over.
Robert	[I]When we are limited with our emails, the size of the images that we can - or the size of the files I should say, that we can send.
Phillipa Durkin	[I]Yeah all of that and then there's a certain way of attaching it to my treatment report through EMu
Shane	[I]Yeah I think it would probably make it a lot faster if we just did a lot of imaging but then we'd have to be set up to do that all the time.
Tijana	[I]Yeah it's an Inkjet. And we get to file images of photography.
Phillipa Durkin	[I]Yes, adding photos to the reports
Tijana	[I]You can ask the EMu people to bulk upload
Tijana	[I]You can ask the EMu people to bulk upload
Jenny Cauchi	[I]You can get a big JPEG but you can't get the biggest TIFFs sometimes its not enough for JPEG, depending on how they are printing it and then we print them off the printer in there
Robert	[M][I would really like as a conservator to have a device, whatever that device is, a phone or tablet, laptop, whatever, that I go to a venue or we give the lending venue access to that particular folder within the database, they can login and look at it, or I login and look at it, update immediately online to the database. We have it there and if necessary just print everything out.
Carol	[M]And also I think back of house Wi-Fi is a bit of an issue. Particularly in the stores, so for me in terms of EMu is that staff can't update live there and then in front of an object. They have to go back to the PC and update the data there, which is a lag and things can get missed at that point. So if they did have Wi-Fi in the stores it would make our data much more accurate, I think.
Yu-Yu Win	[M]And I like the idea of B.Y.O.D. People can bring their own device. As far as the hardware is concerned or even as far as the upgrades are concerned they can look after themselves, the hardware and software, but we will look after the network side of it so they can connect to our network.
Shane	[M]And I think I prefer doing it in the lab because we do have the camera equipment here and we can put it on our computer and do all the work on there.
Tijana	[M]And often we get artworks that are too large to come up here necessarily and arrive and be down the road, so we have to go to them.
Tijana	[M]And often we get artworks that are too large to come up here necessarily and arrive and be down the road, so we have to go to them. So we also take our notebooks.
Robert	[M]And the systems we have are generally very good if you're only lab based. If you're not lab based, or not based within the building, which as the infrastructure *inaudible* somewhere remote, it's a pretty big constraint. I've worked in place which were extremely remote, and the IT systems we had there, the accessibility was great. It wasn't a problem. We just had to wait for particular satellites to come into our orbit, across the horizon, but it wasn't a problem. And that was working. If we can do it there, that's a remote space, or if

	you've got people in yachts that are out on the pacific ocean, weeks from anywhere, and their connectivity is a lot better than what it is here, you gotta wonder, you know? Why is that? I'm not sure what the resourcing has been like, I'm don't know what the staffing can be like, but for me it's access is the bug there, particularly if you're doing touring shows, and you're out and about or you're at a venue and you need to look at something quickly and you may not have the paperwork with you in some way
Linda	[M]And the visual documentation the most important aspect of this. And we talked about having this available digitally to compare with the work on the wall.
Phillipa Durkin	[M]and then print it out. I'd happily do that. It's just that I suppose you right that this is very old school, writing it on an overlay, but if I could be perhaps given a tablet or phone that allows me to scribble on my drawing.
Sunita	[M]And we've only had Wifi for not that long
Linda	[M]And what you find is you're physically close to the object and it's about the physical act, like how you do that activity.
Anne	[M]And with us having curators that aren't in the same building, that is another barrier for them
Linda	[M]And writing about it in detail would just not be a good thing to have to do work with whist it was on loan. So this is all that was written about it. So just a short paragraph.
Shane	[M]But I mean, it's a lot easier doing it there then say going down to conservation down in Cable Street because we're set up to do all of the graphic work and then transfer all that information.
Tijana	[M]But if we want to hook up to something, we're limited by where we can plug in
Robert	[M]But in the ideal world I would really like just to grab a laptop or a tablet, jump onto a collections store, get online, get onto a database, and go, 'Okay this is what I'm looking for,' as opposed to having to drag a blue cable behind me, and get the artifact moved to where I am because we'd really like to minimize the movement of any of the artifacts. That's all about object safety
Shane	[M]I can't do it remotely. I have to get the datalog and take it down to the conservation office and download that information and then take the datalog back again. Now if I could do that remotely, I wouldn't have to go through that step there. It would make it a lot faster and I could do a lot more of their stuff.
Neil	[M]I don't know yet if they'd be able to use personal computers, but they would be able to use wireless devices that the company supplied. I don't know if the whole bring your own device has been brought through yet.
Jenny Cauchi	[M]I don't use it very often on a laptop anymore because I think our laptop is really - they've replaced it but it's still a really really old one, so it's just too - I think if we had a better laptop I probably would possibly use my laptop at the bench a bit more directly, but I just don't now.
Sunita	[M]I think our wifi capabilities like back of house we've got Internet, but Wifi I think is more relative to certain areas and mostly in cable street it's the whole institution has Wifi, but back of house can access internet and in certain areas we have Wifi access as well so yeah.

Shane	[M]I think the only other thing would be when you talk about mobile technology, having more ability to use that sort of stuff in future. I mean, Nirmala and I were talking about how other institutions use iPads for taking an image and being able to mark it up where all the cracks and stuff like that are. If we could do that here, that would make things go a lot faster and a lot more accessible so we can do those out on the exhibition floors when we're doing the work, rather than having to take a photograph, do your notes, and then transcribe all of that. It would just make it all efficient.
Sunita	[M]I think we tried to introduce the handheld gadget to store information especially locations information but then that we haven't really been doing that too much these days so if theres especially little hand-held systems or that can capture information or what is it
Carol	[M]I think Wi-Fi, I think tablets, anything that just makes life easier than having to go to a desk and sit down in front of a PC is really useful.
Carol	[M]I understand that we do have some Wi-Fi in the museum. And there's a hotspot by level 2, that's the main area where users can access our free Wi-Fi. But there are other parts of the museum where you may get Wi-Fi as well. And there's also some Wi-Fi back of house, but I think it's quite sporadic and you need to be in the know as to where that is.
Jenny Cauchi	[M]I wonder if you could do something with audio, like voice, because sometimes you might have your hands actually full trying to look at something, manipulate it, stop, go, write something down or type something, almost if you could just dictate again too and have that be translated into the report, that could be quite cool.
Yu-Yu Win	[M]I would like everyone to have laptops instead of having a fixed desk because it is like you're tied to a desk. But if everyone has a laptop and they move around, less resources are required as well. At the moment, one person could have two laptops, two desks. I have met a person who has two desktops because he resides in Tory and also here, and then they have a Mac laptop. And also they sometimes want to have a PC laptop to do things. I wish there was only one laptop that can have access to everything from that.
Anne	[M]if you imagine an entire object list of objects going on tour for years, and subsequent markings sort of collecting on this image, and then coming back with hundreds of this
Sunita	[M]In this building we only have wifi in certain areas yeah.
Anne	[M]It would be up to the person to come down here and look in the physical files.
Neil	[M]Just cause there was a bit more growth in IT since they built the building, so there's not quite enough cable to go everywhere. So, that's another reason the Wi-Fi in the back office would be quite useful.
Jenny Cauchi	[M]Often like the initial one where I'm just literally writing the condition report, I would do right next to the object and I do it by hand unless there's some big reason that it's a survey thing and I actually have a laptop and I'd be doing it, but ninety percent of the time it's not like a survey type of thing. I have a notebook.
Phillipa Durkin	[M]On the whole, sometimes they are not near my computer, so I will make notes, and then I'll generate them, so yeah it's like double handling I suppose,

	and if I did have a laptop, I could probably cut out the note taking stage and just put it straight in.
Anne	[M]really big limitation because a lot of the apps were developed for iPad, which is not USB compliant, and the tablets don't have the apps.
Anne	[M]so from our point of view, in terms of sending this information to Honolulu, about the cloak, for instance, they might as well exist as separate things,
Anne	[M]So I guess, from my perspective, I think for us I would like something that I can use, take along with me.
Yu-Yu Win	[M]So if you want to connect back to the network, they can do it that way. So there's really no restriction for them.
Yu-Yu Win	[M]So they can access HighTail, and download them on the other side. I guess that way they're not really coming back to Auckland to download it. So HighTail could be hosted in America but I don't know where they're hosted. It depends on their vendor. So that's a solution that we gave them. If they needed it while they're overseas, they could just ring up their old colleague and say, "Hey, could you upload a few files onto HighTail because I can't access it." And then they can download it from there. That way they at least have access to it.
Carol	[M]So when we think about what we're doing and the future of our technologies we need to think about the processes around when worst-case scenario doesn't happen. Because those are the real problems, when you've got Wi-Fi and you can access the systems and the technology's and everything's fine, but when you can't it's about the process about how we then get the data back into our existing systems as well.
Yu-Yu Win	[M]So yeah it always depends because you could be accessing it from a hotel and that depends on hotel Wi-Fi. How much did they give you? Is it free? And then they only give you so much download capacity. So it really doesn't matter how good your computer is; it is only as good as the link.
Yu-Yu Win	[M]So you have to log on to a wired network for that one[M][ON]
Yu-Yu Win	[M]So, it is pretty much limited to that Internet connection, if you're overseas, for example. And also it will probably be dependent on the country you are in
Phillipa Durkin	[M]somebody was suggesting then that tablet goes with the exhibition, so that there's not even paper generated.
Matthew	[M]Sometimes I'm not near it for quite a lot of periods but then my phone's in my pocket and my phone's connected to the system
Robert	[M]That's not always possible because of time and also the system in EMu I find very clunky to use. Sometimes what I'll do is just print an image out and write directly onto it and scan that, convert to PDF, and load them up. Otherwise, I'm just loading them up onto a memory stick and then they go and travel
Neil	[M]There isn't really much backend Wi-Fi, so we're looking at getting some out there but at the moment that's not really available.
Linda	[M]To take details while you're onsite is very useful.
Linda	[M]very limited in this space where we can be online within the lab space.
Yu-Yu Win	[M]We don't want to have to worry about your hardware issues or other issues that you might bring in with your hardware. We don't look after that. So that

	would be really good so that way we could concentrate on the technology that we provide.
Shane	[M]we have that as a stand-alone on a laptop because they don't want to put it on the system. So everything I download I have to take; I can't do it remotely. I have to get the datalog and take it down to the conservation office and download that information and then take the datalog back again. Now if I could do that remotely, I wouldn't have to go through that step there. It would make it a lot faster and I could do a lot more of their stuff. Because we have data logs here on Tory Street but that means I have to bring the laptop up here, plug it in and then download it so that's been my ongoing beef at the moment.
Linda	[M]We try and do the more complex ones here, because we have different ways of looking at things and the equipment available here.
Robert	[M]We've always wanted to be able to take our laptops around in this lab without having to tap into wires. That hasn't changed yet. But until a few months ago, we went from, 'This is the way it is, this is not possible to make the building wireless,' but apparently it is very easy to make it wireless. And that just comes down to who was on staff. So there's a bit of that.
Carol	[M]Well I think Wi-Fi but I also think we need to think about instances where there is no Wi-Fi.
Matthew	[M]Well, if it could be done on *inaudible* I would see that as being a very very useful possibility. Or a laptop obviously, but I think tablets are just as good in that respect, they're big enough. And you can park it next to the object.
Sunita	[M]Yeah wifi especially in the storage areas that would be really good, for especially for collection managers
Phillipa Durkin	[NI]…and then draw on it.
Anne	[NI]"notability" for instance, which is a note taking app,
Phillipa Durkin	[NI]A digital camera has really improved how I do my treatment reports because I can begin them straight away. The photos there in the computer I can send them to somebody aw yeah that's lovely I love that.
Yu-Yu Win	[NI]A lot of people have different softwares on there so I don't even remember who has what but we do have registry of software license that says who belongs to what.
Matthew	[NI]A lot of things end up here serendipitously, they're not chosen by curators, they've arrived in the process of people migrating and passing things, leaving things, family's not caring about them, but wondering if the museum might want them.
Robert	[NI]Accountability, accessibility, we can change it as required.
Jenny Cauchi	[NI]Adaptable in terms of being able to use in with different formats and different purposes
Phillipa Durkin	[NI]Advantages (going back to EMu)…I like being able to find information. Searching
Yu-Yu Win	[NI]Again, it would depend on where they go. You know that New Zealand is actually a few years behind in terms of Internet technology
Anne	[NI]Again, what resources are required takes time and money.

Yu-Yu Win	[NI]All the computers should be Microsoft Windows 7 and all the servers are 2010 or 2012.
Phillipa Durkin	[NI]allows you to draw on it and then to be able to attach that the document
Robert	[NI]Also the images on them have faded, which is not ideal also.
Tijana	[NI]Also transportation, like the best advice for how to transport an artwork.
Robert	[NI]Also with EMu you've got your history as well, so I'll look in the conservation module, I'll look in the security module, I'll look in the curatorial module, the display, the designs and stuff. The history of an object, what people think they're made from, and the exhibition history, which will give me light exposures and environmental if it's been an issue before, where things have been and why they've been there. And that will inform me of my job here.
Matthew	[NI]an assessment, there's an assessment process, which, I don't tend to think of condition reporting although in effect that's what it is, but it's an assessment process to see what requires to be done to the frame itself
Carol	[NI]And again, we've recently changed a number of reports for conservation really around touring and style guide and things like that. I do that as it's required.
Carol	[NI]And also how we can extract that information and get it out and use it for other people as well.
Neil	[NI]And basically any device you have, any laptop or surface tablet or android or whatever, would connect straight to VDI, so it would be a lot quicker.
Linda	[NI]And for example, say, today I was down in the Maori art store and I didn't bring a camera, so someone took photos on their smartphone of the details and sent them to me.
Shane	[NI]And from that, you write up your report. I break it down into the surface, the medium (what it's made up of), and if there's any damages. Those are the three sort of basic ones when I'm looking at an object, I can see whether it has any surface accretions, whether it has any staining, whether it has any abrasions; and then I'll look at damage, whether it has any cracks, any lost parts, missing parts, or whether it has any damages or any breaks in it. I break those up into those parts and then I'll write up.
Robert	[NI]And if that be it, we may just take a bunch of really good images (?) and do some notes that talk with the image.
Robert	[NI]And if that happens then yes, we will start to do documentations on them, which is all on KE EMu
Robert	[NI]And it makes us look very silly as well. Not as proficient as we perhaps should be.
Shane	[NI]and it's all on this one database and that's really handy
Shane	[NI]And it's electronic, we still have hardcopies around but not so much now.
Linda	[NI]And making decisions about what is and isn't with the curators
Yu-Yu Win	[NI]And nothing is stopping them from copying details from their network onto their thumbdrive.
Carol	[NI]And so my job is to manage the collection's database, which is EMu. But my job is also to manage the informatio

Yu-Yu Win	[NI]And so, those people actually have Fat Client computers. Fat Clients are the ones with the hard-drive we install, the operating system on them, and install the software on them.
Tijana	[NI]And that information all gets put in there so everyone can access it.
Robert	[NI]And that'll solve the problem of photos that get lost, photos that fade, or photos that get so badly annotated that they're just junk.
Linda	[NI]And the good thing about it was they came up here and got an idea of our requirements by physically being in the space with us.
Linda	[NI]And the other thing is, is having a hard-copy image, but knowing that back at the institution, the lender could check with our digital image or we could send them the information digitally,
Tijana	[NI]And the thing is you can go in and alter and delete things
Linda	[NI]And then I put all the detail in the diagram, in the photo overlay.
Anne	[NI]And then people can refer back to that image over the long term and make decisions about if there's discoloration
Linda	[NI]And then there's documenting our treatments, which you know, you do that spasmodically as you work.
Yu-Yu Win	[NI]And then they do have an option to access the virtual environment as well.
Linda	[NI]And then we got really high-res photographs taken in sections of all of the panels
Tijana	[NI]And then you make a more detailed condition report, and this has information for example, if there's labels on the back of a frame we write exactly what's on the label
Yu-Yu Win	[NI]And then, as I was saying, we've got a Mac group/team of people. There's probably about ten of them and they use Mac to make their pitches and drawings.
Anne	[NI]And then, once it's put into K EMu, you'd be able to have a hard copy printed off with all this information
Yu-Yu Win	[NI]And they do latch onto our network as well so they can use our network resources.
Anne	[NI]And this is a really good example, this is currently the easiest way to annotate images. We take our own image
Shane	[NI]And this is probably more old school than what the conservators do because, again, they do a lot more than me so they are taking a lot more photos, and doing it digitally.
Matthew	[NI]And those assessments I'm making are less concentrated on the precise details of condition and a measurement of here to there, that's so important in an assessment.
Robert	[NI]And what happens when a venue gets *inaudible* but at the point where it's got so much information it slows down. Now can the organization find an upgrade before we get the speed and the connectivity and what we need to do our job. So that's the reservations I have
Shane	[NI]And with maintenance, and serving of equipment and supplies, like with the chemicals and special materials. And also I do a lot of the environmental monitoring of exhibitions and cleaning exhibitions down on Cable Street. So I

	spend half of my time between this place, in the lab on Tory Street, and between Cable Street.
Robert	[NI]Are you comfortable using digital technology? Yeah, generally
Yu-Yu Win	[NI]As soon as you want to get onto the corporate network, you got to go to a VDI like you guys do. You guys pretty much are actually B.Y.O.D. You got here, we gave you access to a particular side of our network, and you access it. But then your devices are your own. So, we will look after that little icon, that communication, and once you get into it you can print and all of that and we'll look after all of that. That's the security that's put in place. So you can only access it if we give you access. So yes you can get onto the network because you know the password but it can be restricted as well.
Robert	[NI]As they come through we'll do condition reports. They could be a two liner saying the object is mechanically and chemically stable or it may be a lot more than that depending on what the time allowed is (?).
Yu-Yu Win	[NI]At the moment, I think it's a little bit outdated, as in the hardware wires. They look good from the outside but inside I think we need to upgrade the actual hardware as well.
Phillipa Durkin	[NI]Be able to go to the object and do it and like you said
Robert	[NI]Because a lot of what we do is about communication and being able to communicate with people. Sometimes we do that very well, sometimes we do that not so well. And for other people, the audience who we write for at times, change the time to suit the audience,
Linda	[NI]because as I say I'm a – it's just I use it on a need to basis
Jenny Cauchi	[NI]because I know it could be better and more flexible, and again what would be great is if you did have something that worked well enough that went right into the system and it's done and then you could - if you still needed hard copy printouts to go with things, just print them out, but it's already in the system so you don't have to go through that other step of putting in back in the system.
Phillipa Durkin	[NI]Because I used to have to take slides before treatment, wait to get them processed, and get them back before I could begin my treatment to make sure I did have a good before treatment photo of it. Now I just bash off twenty photos, download them, check them, and go back and do more
Matthew	[NI]because it's a slowly truncated thing that I do with it,
Matthew	[NI]Because managers can make decisions about how we do things, and supply us with resources if they have the means to do that.
Matthew	[NI]Because with the growth of digital has come the modern ways of doing business, doing museum work in which every person does all of their own work.
Sunita	[NI]because you know they use EMu for most of those processes so and then they do reporting through EMu as well using the crystal reports.
Sunita	[NI]because you know they use EMu for most of those processes so and then they do reporting through EMu as well using the crystal reports.
Tijana	[NI]Because you need to be able to look at artwork to compare to the report.

Robert	[NI]But a perfect condition report is something that can accessed remotely, EMu is kept secure with all these security things that we have, but something that I can remotely access and remotely edit with no issues of dropping, systems dropping out, systems getting corrupted, and something that to relatively easily, as well. That would be my ideal - hopefully it's relevant
Carol	[NI]But again, we can add to those lists at any point and we can add information that you need. Yeah, I think they are high end users in terms of entering the data and extracting it for their condition reports, because they do only use EMu for their condition reports, which is great. Yes, I do think they utilize EMu.
Shane	[NI]But at the moment it's very much just get the image, put the image up, put an overlay on it, and mark it up with a felt tip pen and then referencing it to the notes.
Yu-Yu Win	[NI]But Fat Client, a few people actually have special softwares installed. So there will be Adobe Illustrator, Type, Photoshop, and a few things. So things like VectorWorks, I think that's an imaging software, that belongs to the imaging team.
Robert	[NI]But I have been in places where people have recorded me and used that information and misquoted me quite badly.
Tijana	[NI]But I have two condition reports for this one particular painting, for example. I've got the detailed one once we acquired it. At first it was on loan to us, but it was going to go into an exhibition and it needs a lot of work. So I did a very basic condition report, and then this is called a loan treatment authorization.
Robert	[NI]But in the last couple of months, people have been showing up going, 'What can we do for you?'
Matthew	[NI]But it might be something like – for example, images you might find in natural history, natural environment which can be used for comparative[A]*inaudible*
Linda	[NI]But IT staff, I've used the IT staff to help set up stuff for *inaudible* I got a new laptop through the project, and a screen, and we worked through what I needed there, and they were fantastic.
Jenny Cauchi	[NI]but it'd be nice if we had more flexibility around that, because we can't do them ourselves, again you have to just work with what already exists in those templates for the reports.
Matthew	[NI]But its complexity is the thing that gives it its capacity to cover a lot of things.
Robert	[NI]But normally a hard copy will be sent with the reports because for me, as a conservator, when that object comes on tour, I'll be giving a hard copy of that or a report that is a hard copy …
Jenny Cauchi	[NI]but not having some technology that's going to step us up in a few years where we can't do anything with it because it doesn't talk to anything else. I guess something that we would have confidence in professionally, so we would be quite happy knowing that other people look at it and knowing that it's great, can we adapt that to our thing?
Shane	[NI]But once I've got that, then I can start working out how I do the condition report on them, because they're quite generic in that they're a loan and part of

	the agreement is we aren't doing any treatments on it so we're just taking a snapshot of the object as it comes in.
Sunita	[NI]but sometimes if people need me here then I will come here
Robert	[NI]But that is the main *inaudible* I use, Pou Mataaho as well
Linda	[NI]but the ability to, the flexibility
Tijana	[NI]But then it depends on the surface. Some oil paintings are quite straightforward. Then we've worked on other surfaces where the grid like and trying to do an overlay where you're marking and you have to sit there and count every little thing along – that can take so much time to make sure you're marking things in the right place. But also, just to make the *inaudible*, which the surfaces are so difficult, and depending on which way you shine a torch to look at them you find more scratches and things.
Anne	[NI]But we do have somebody assigned who does do the scanning in of this stuff so it does get attached to EMu.
Tijana	[NI]But we do use it everyday
Anne	[NI]But what would be ideal is to be able to, from the point of view of generating a single condition report - we cannot, without – Nirmala may have just showed you, how when you go to the reports, and it gives you the option to print out a condition report
Linda	[NI]checking a loan, the day the loan's going out by using the loan tab.
Anne	[NI]comfortable using Adobe
Matthew	[NI]Communication is a major one. The potentially for the quality of documentation is much greater, particularly when you conserve – it's much less just about the written word now and much more about all forms of communication...and to give an understand of what it is that needs to be known or communicated and images can do a lot of that work really well.
Linda	[NI]copies of whatever you generate, of a high quality and the color is true
Shane	[NI]Datalog to monitor the environments
Shane	[NI]Definitely a lot of this environmental stuff because you use a lot of meters like cyclometers for taking spot readings, temperature and humidity, and lux meters for taking light readings.
Linda	[NI]do the overlay, the photographic overlay indicating areas of concern.
Anne	[NI]either using XRF or whatever, like fiber identification,
Anne	[NI]either using XRF or whatever, like fiber identification,
Sunita	[NI]EMu but for that information to be accessed I put it online so that people throughout the organization can access it, I mean not everything goes online, but yeah basic information does so.
Sunita	[NI]EMu there are some images which wouldn't like exhibition
Linda	[NI]Especially the pictorial mapping
Sunita	[NI]exhibition shots those would be, have been loaded to EMu but I think that the imaging team have lots of other images that are of events and various
Matthew	[NI]few particulars that tend to get recorded
Linda	[NI]flexibility

Phillipa Durkin	[NI]for example I've had really large photographs that are two meters by a meter and 15 like really big. I've had to you know...there's lists of what's wrong with it. These are quite small they are about 8 4, so they're not overly, I'd say 20 min. Looking at it with a torch assessing it and jotting it into the computer, that's if I had my computer here. 20 min on average
Phillipa Durkin	[NI]for example I've spent the last two days working on the taupo and I'm going to spend the next two days, so I haven't been on my computer, but then I can do survey and spend a whole day on my computer, so it's very varied
Yu-Yu Win	[NI]For example, you can load it up all on your thumbdrive and take it with you. That's no problem. And you can also loan laptops on the way.
Anne	[NI]hat is put into the materials field in the catalogue record. So probably not necessarily to generate a whole report – and especially for exhibition, that process is kind of forced to be a little bit more rigorous because of producing label text, which normally includes materials, so that's the mechanism by which we will say "we've looked at this and updated the materials field and that's all correct."
Robert	[NI]Having a condition report of a 50 foot long object is not that useful.
Anne	[NI]he's the one that scans in the black and white and the slides, and then he also looks at the JPEG images, or the images that the photographers have captured, and makes sure there's not a weird, bizarre mannequin stand sticking out of the bottom – do you know what I mean? I'm sure there's a word for it
Tijana	[NI]here they used to measure it from the bottom and from the left, this many millimeters, and to sit there and try if someone else has gone – this has gone, to say, Auckland Art Gallery, check it to make sure that's still like it is. For them to find that loss they would have to go and measure it physically is a pain in the butt,
Sunita	[NI]I also do lots of data cleaning and ongoing work that's not so much support and training as well. And also we got our collections online I work with publishing a lot of records because we are constantly publishing records that have been in generation by various staff members throughout the organization
Shane	[NI]I also work with Robert and Nirmala on objects.
Carol	[NI]I am in charge of creating all of the reports in the crystal suite that EMu uses
Robert	[NI]I believe that it's been looked at seriously
Neil	[NI]I deal more with the backend service staff and the network.
Sunita	[NI]I deal with a lot of people. I am a front facing part of our team,
Phillipa Durkin	[NI]I did them all in one go over three or four days because the idea is you do them just before they leave. The crate is sealed and off they go, so that you prove it left Te Papa's hands in a good condition and then the receiving institute opens them and checks them and goes yes, nothing's happened to them. They look after them and then they repeat the process. It's like a legal document.
Shane	[NI]I do like the fact that on KE EMu, it has a checklist. So you don't have to reenter(?) everything all the time. You can go through and use the field to tell you wherever that is and descriptive words like cracking or breaks or staining or abrasions and stuff like that. And you can just go through and put that word in.

Shane	[NI]I don't do a lot of the loan condition reports, outgoing, which they do for touring exhibitions or stuff that goes out to different institutions around the country. Mine is usually condition reports of objects that come into the lab or stuff that we are receiving from other institutions, which we have as either part of the collection or that are going on exhibition as well.
Phillipa Durkin	[NI]I don't do them everyday, so for example this is quite a big one because I think there's forty-seven works went out and then they came back in, so I could probably I think these took me two or three days to put together. I think the forty-seven.
Neil	[NI]I don't look after that, that's outsourced. I look after making – I get the *inaudible* stuff to do things if we need to, like expansion of disks. But I look after the backend SAN for storage, the networking to it, all that sort of stuff.
Tijana	[NI]I don't make an overlay if I'm going to – like if it's a newly acquired painting I'm not going to make an overlay but the photographer will come and take photographs of the work and then I will take my own detailed photos for any kind of treatment or if it needs any details
Phillipa Durkin	[NI]I don't mind going and seeing EMu for help if I don't know how to do something so it's fine.
Sunita	[NI]I don't really know too much about what is out there that could be make things more efficient and cater to
Matthew	[NI]I don't really know. *inaudible* and then life got so busy and I hadn't done it enough to kind of remember and I went back and then realized look,
Jenny Cauchi	[NI]I guess assessment and advice and sort of the research side of things so that might be for things like exhibitions where weight, review objects, look at objects, and consider if they are suitable to be displayed or suitable to be loaned, if they're going out, what requirements they would have around how they're displayed, the light levels, the length of display. If it's a loan, or a tour, could they only go to one venue?
Jenny Cauchi	[NI]I have a notebook.
Robert	[NI]I have over the years. They've had a lot of change in those departments. But EMu staff, yes definitely. Working relationship with them seems to be quite reasonable, they've always been approachable, and they understand that we're their clients. Which is great, not in a nasty way but they're a service based providers and that's fine and that's why they've been employed
Tijana	[NI]I have pencil and paper and a clipboard
Jenny Cauchi	[NI]I have quite a lot of stuff that's a bit more coordination and administration and going to meetings so there's a lot of that besides say sitting at the bench doing some work
Anne	[NI]I have the before and the after treatment images attached
Linda	[NI]I keep the text fairly general, and if there's something specific that needs to be really drawn
Anne	[NI]I know for myself, I keep an excel spreadsheet of all the objects that I work on, whether it's just doing a condition report and putting in the light level requirements.

Jenny Cauchi	[NI]I know they get put somewhere in the file, but they don't end up in EMu because we may or may not get that object. I think they end up in Poh Mataaho or records system somewhere and depending how short it is I might just extract the whole information and cut and paste it into that field in EMu, but I may just say that it's attached to the file.
Neil	[NI]I look after the backend – the server itself is a Linux box.
Shane	[NI]I mean even the fact that you're using the cameras makes it so much more instantaneous because we used to use film and you'd need to take the photo and then you'd have to get it processed, and then you get the prints and then you can write them up. Now it's all digitized.
Shane	[NI]I mean even the fact that you're using the cameras makes it so much more instantaneous because we used to use film and you'd need to take the photo and then you'd have to get it processed, and then you get the prints and then you can write them up. Now it's all digitized.
Phillipa Durkin	[NI]I mean it's a legal document just to prove that we are giving them this print, they received it in good condition, they look after it, they gave it back to us in good condition, and it's like a legal document
Anne	[NI]I mean it's not only from a condition point of view, it's reconciling some unknowns about items and – so that's why we always send these to the imaging team whenever we get something out that has no image because at least they can scan these and put them in.
Jenny Cauchi	[NI]I mean what we often do is just assess on the counter fact of the spreadsheet for the exhibition that's from EMu,
Shane	[NI]I mean, you do take photographs and you can do overlays and you can put the marks but you still have that reference.
Shane	[NI]I mean, you do take photographs and you can do overlays and you can put the marks but you still have that reference.
Robert	[NI]I need to really scroll down into to see that marker crack, or a crack that might be only half a millimeter by two millimeters long, which is quite small. But I want it to look on the screen 30 centimeters, so I can really look into and see how that crack may develop.
Jenny Cauchi	[NI]I often don't hesitate usually if I have an issue to ask for their help.
Jenny Cauchi	[NI]I probably use it every day. I use it a lot with the exhibitions, and it might be useful for you to see some of those reports. A particular exhibition will have a number like a module number and then it let us see all the objects they're considering and whether they've been proposed or selected and then we can put in stuff like lighting, it's fine, good to go, whatever it needs. It's really really useful, we use that more than anything else in EMu. But then that links to - it shows any existing condition reports and that sort of stuff. So I use it quite a lot.
Matthew	[NI]I tend to make note. Actually, it's probably a mixture. I will do it both ways.
Carol	[NI]I think a lot of our work now happens outside of these four walls. So the ability to do work – well the technology that enables us to do work outside of these four walls needs to be looked at and thought through.
Sunita	[NI]I think for myself most software that I need as part of my work I do have access to apart from EMu I use on a general basis

Jenny Cauchi	[NI]I think it could take as little as fifteen minutes to as much as a couple of hours and then some objects might take days depending on the complexity. Like a group of prints going off on loan, if there's four or five of them, they're the same. You know like the same series, same artist, quite similar. Again you can do a lot of things for all of them at once and then do the specifics. You could probably do that work in probably fifteen to twenty minutes of work if that, but if we just acquired this late seventeenth century wallpaper panels that are huge. They're panorama wallpaper that goes around the whole room that's just been acquired. It came in before Christmas and its still in quarantine right now because it had a bug. We haven't been able to open it up fully yet, but condition reporting that would probably take several weeks because we'll look at it in different ways with three different types of light.
Jenny Cauchi	[NI]I think it would be flexible and secure
Linda	[NI]I think over the longer term we might get an opportunity for something to focus on over the long term. So it's generated by the program
Carol	[NI]I think the annotation of images in condition reporting is required.
Anne	[NI]I think the curators have access
Sunita	[NI]I think they are sort of working, there's a business analyst, Marlena, she's working, she's sort of getting to what you guys are doing too, interviewing everyone and but they actually haven't decided on a system yet they're thinking about it yeah
Sunita	[NI]I think we are in the process of getting a digital asset management system
Anne	[NI]I think we didn't actually have access to either of those things until a couple of years ago.
Sunita	[NI]I try to do all the Tory street meetings or trainings on Tuesdays.
Matthew	[NI]I use it to write condition reports, I use it to do assessment of works for loan, for acquisition, as you must know we do – when we acquire a work – or when we propose to acquire a work it goes out to relevant people to find out whether that there's a good reason or not to.
Tijana	[NI]I use the Internet a lot for references. Scanning just a bit.
Sunita	[NI]I use things like Excel, Photoshop, and just like file renaming tools, things like that.
Jenny Cauchi	[NI]I went to Sydney to look at something obviously it was a high value thing. It was cheaper for me and a curator to go and look at it than to pay someone in Sydney to look at it and give feedback to us; that is the other thing we do is when we are getting things from overseas, we often ask an external conservator to review it and write a condition report and we put our own comments on it based on what they said.
Phillipa Durkin	[NI]I will treat as in conserve objects and that can be anything from a full treatment or maybe minimal, small amounts of treatment getting them ready for exhibition, assessing and survey work to keep an eye on the stage of the collection and like I've mentioned treatment, preparation, and condition reporting of outgoing loans and outgoing touring shows and I get items ready for our exhibitions and when we're not doing all that we do elective collection maintenance, which means we can work on things that aren't necessarily

	earmarked for an exhibition but because we've treated them and they're now ready, they might be called off, so yeah.
Sunita	[NI]I work mainly with support and training but apart from that there's also a lot of working with a lot of data, working with support and training
Robert	[NI]I would love to have a system that is basically a digital device that you bring it up, change whatever you need to change, and save that into a folder for the object; and you know that it's dated, and you know you have a whole series of generations of them
Shane	[NI]I would say on average maybe four hours a day using the PC and downloading information.
Shane	[NI]I would say on average maybe four hours a day using the PC and downloading information.
Jenny Cauchi	[NI]I would say the exhibition…yeah different things would definitely be different for different time frames because I think the loan and the tour ones can sometimes take a little bit longer
Matthew	[NI]I would strip it down to the thing
Jenny Cauchi	[NI]I write them by hand when I'm next to the object.
Phillipa Durkin	[NI]I'd say probably maybe thirty percent by week? Sometimes fifty percent if I'm doing survey and adding more information.
Phillipa Durkin	[NI]I'll explain how its…so that you know we can tell if anything's sort of interfered with the frame and then I'll just scribe the work on paper and it's not like a technical description. It's just a visual understanding of what it looks like if there's any original marks or anomalies that they haven't created[P].
Phillipa Durkin	[NI]I'll jot it all down into a notebook. Sometimes if I got the crates near by I can do it straight into the computer. If I have a crate nearby I'll lift it out of the crate and I'll sit here and put it in.
Matthew	[NI]I'll just have to grasp what I need to grasp when I need to do. Which I think I'm capable of doing. I've got enough stuff in my head.
Phillipa Durkin	[NI]I'll take photos and document it and put it under a temporary accession number
Phillipa Durkin	[NI]I'll take...I'll get a photograph of it, a good photograph of the print and drawing and then I will just generate this (shows an annotated image), which is all you can see there.
Phillipa Durkin	[NI]I'm either putting a treatment report on to it, condition report on to it, survey information when I've done surveys, condition reports, outgoing, loans, touring, incoming, my treatment reports, survey, and acquisitions, updating my implications for acquisitions, so I do put a lot of information into EMu.
Sunita	[NI]I'm in this building once a week I try to be here because a lot of collection staff are in this building and then I'm based in Cable street 4 days a week
Robert	[NI]I'm involved in all aspects of the conservation process. That is exhibition development, touring exhibition, inquiries from the public, national, international, remedial conservation treatments, working with interns, training, outreach work as well, and research as well

Tijana	[NI]I'm much quicker on Apple. Especially with images
Matthew	[NI]I'm not in the least bit, in any formal sense at all, recognized as a curator of frames but in effect that's the kind of set of behaviors that get set up by people who understand I am the expert.
Anne	[NI]I'm sure he does a lot that I'm not aware of –
Robert	[NI]I'm think cameras, uploading images, taking images, emails, creating documents, writing documents, scanning documents, sending documents away. It's more than writing, because I tend not to - pencils and pens *inaudible* So I spend quite a lot of time on these machines.
Shane	[NI]I'm trying to think of how much I use KE EMu. Probably around one day a month, I suppose.
Robert	[NI]I've been doing this work nearly for 20 years now so I started when people were at the tail end of using this and that, film cameras, and then using digital cameras which were wonderful but there are a lot more megapixel, which really weren't that useful, but now the technology is such that they're very useful. So the whole change of reporting, when I started doing this you would handwrite your reports and now of course who would do that? And it also means that for me, because how I work and how my brain I guess, is having things on the database, it's easier for me to get my concepts across to other people.
Anne	[NI]I've done a little bit of documentation as I've gone along, so I've probably generated maybe 12 to 15 images of the whole process.
Jenny Cauchi	[NI]I've done all the training that they've often, like whenever they've offering training. We just a refresher about images which was really good. I think some of those is good to just keep doing because you just forget if you don't keep doing it everyday.
Anne	[NI]I've done since arriving here in 2008, so it gives you a sense of basically – 1, 2, 3, 4 – it's like 5 pages.
Anne	[NI]Ideally this would be via USB.
Sunita	[NI]if I need photoshop then I would just my local machine has it
Robert	[NI]If it's a touring show it's usually has the condition changed while it's been under the care of Te Papa. Yes? No? Yes, these are the issues with it. Do we do treatments, yes, no. And then that could take, coming in for example the DreamWorks, five to ten minutes, five to ten minutes doing the checkout. If we need to do treatment, it could be a couple of hours depending on what the damage is. So it's all variable.
Jenny Cauchi	[NI]If there's a work that's a joint textiles and work on paper…there's lots of works that have mixed media, so we work closely with other conservators a lot of the time too…
Sunita	[NI]if there's an exhibition they will load and they are non collection items they are images of the exhibition installation shots
Shane	[NI]If there's an object that's going on exhibition and it may need someone to put something into where it should go on exhibition, it needs this much light on it, the right humidity or temperature, so there's sort of standards around that.

Robert	[NI]if we find out there's a new part of that that we'd like to add to it or simplify it, then it's relatively easy to redo that coding without messing up the whole system.
Jenny Cauchi	[NI]If you think about it you're doing - even if you're sitting working on the bench, if I'm waiting for something I might still check my email on the phone or whatever, terrible.
Anne	[NI]If you're in the institution and you can open all these JPEGs and things and look at that
Anne	[NI]Imaged after treatment, and sometimes it has to be imaged after it's put on a mannequin because there will be no existing photo of it on a mannequin, it'll just be somebody took a photograph of it on a table. And then, information about the environment is inputted.
Jenny Cauchi	[NI]images that I would take or I would have the imaging team take for two things.
Yu-Yu Win	[NI]In saying that, we still have some other devices connected to a different network that we don't look after. But we provided them and it's being looked at by external people because it's for our security system
Neil	[NI]In short, they look after all the interesting stuff. So basically they look after all of the items. Look after them, catalogue them, write up stories on them, put them on display, do research, all that sort of stuff. I don't know to be honest a huge amount about what they do.
Carol	[NI]In terms of software, so we have the main software suites here. But also if you require additional software, which I do sometimes for my job, it's made available via IT, and they are very helpful in giving me access to what I need as long as it's required for my job, so I use things like python so they installed that for me and got that up and running.
Carol	[NI]In terms of the EMu environment, so we have our own server called Gruarowa(?). And we have live and test environments on that server. We also have regular patches made to that server by our IT department. And an external supply called RSS.
Carol	[NI]In theory, EMu is set up as conservation wanted in terms of arrival and departure of objects, in terms of recording treatment and condition information, and when we implemented EMu we also created a preventative conservation aspect to EMu.
Matthew	[NI]including imagery, images are very important to the modern world
Matthew	[NI]Infinite information management, which IT is responsible for in a general way. But before we had that we had a Microsoft drive and I just put them in the personal drive because I didn't know yet quite how they were going to be used. So I've got lots of these.
Jenny Cauchi	[NI]It lets people at the other venues observe some change or something different and they can add that to the markup and we can put that back in when it comes back and say this happened
Tijana	[NI]It might be nothing.

Robert	[NI]It will be improved, which is great. And there should be products out there that, hopefully off the shelf, don't need to be built for Te Papa, so therefore you've got the compatibility with other organizations so you can go into them and go "okay, my system actually works here." As opposed to "oh, it's only specific for Te Papa, it only works here."
Linda	[NI]It would be good for you to see that slightly cumbersome process
Shane	[NI]it would take maybe two hours to do that one on average.
Jenny Cauchi	[NI]it's a good reminder for us when the thing actually arrives that at least we look at it once we've actually acquired it, actually check the condition now that we have it and that is when we enter something in EMu. There's a little drop down brief sort of survey tab one where we would say this is just exhibitable or it just might need object support or need minor treatment.
Shane	[NI]it's about resourcing
Matthew	[NI]It's about the system's ability to cross reference things and pull stuff from one place to another and if it's going to that it's going to be quite typical, at least initially.
Matthew	[NI]It's different world that I'm now operating in, and that we all find ourselves operating in unless you happen to be one of those people who – it's the state of affairs that you were born into or that you came into your life very early
Yu-Yu Win	[NI]It's for everyday use like if you want to use emails or Microsoft Office or Adobe or something, you can use that and it's easy. And if you want to get onto Pou Mataaho, our document record system, you use that.
Phillipa Durkin	[NI]It's just that's part of my job, which is to condition report items that have been requested by other institutes and we send them to the other institution and that's the whole point is this proves what condition it's in that we've sent it and it's like an insurance document.
Linda	[NI]It's quite varied, and it's on a sort of work-by-work basis.
Jenny Cauchi	[NI]it's the exhibition items and in that we write comments
Yu-Yu Win	[NI]It's usually looked after by the AV team, the Accordnal Technical Services team I think. But our job is actually just to look after the Back-of-House.
Jenny Cauchi	[NI]Letting the curators and the acquisitions committee people know what impact it might have or if it's in poor condition you can say, ok if we get this it is going to take many and many hours of treatment.
Tijana	[NI]Looking at past treatment records, past condition reports, historical ones that are in there.
Tijana	[NI]looking up to see where a painting is in an art store so we can find it.
Matthew	[NI]Mainly by the object.
Sunita	[NI]Marlena, she's working, she's sort of getting to what you guys are doing too, interviewing everyon
Phillipa Durkin	[NI]my role is to look after works on paper and where I come into contact with doing...needing condition reports is for loans, outgoing, and sometimes incoming. Sometimes objects will come to us and they haven't...they don't come with one of these (shows a condition report), so I will generate a Te Papa condition report for it to cover ourselves
Anne	[NI]No, but I would say I probably have easily 500 images.

Matthew	[NI]No, I think my needs are fairly primitive relative to the other people, most of the other people I talk to at least.
Anne	[NI]No, not for every object. If we do an analysis of materials
Neil	[NI]No, not really. The technology's actually pretty cool on the back end.
Neil	[NI]No, so we've got the onsite backups, we've got the Tory St backups, and we've got tape backups that get shipped off site. So they hold it at one of the tape storage companies. We don't have any sort of cloud backup, yet. It's I think been looked at.
Robert	[NI]Now I won't work with the objects but I'll go into the collections storage and do cycles, and circle around and check on them. I tend to only get involved when the seniors (?) go, 'hey, we have a problem with this.'
Robert	[NI]Now, the question about touring reports are also are we doing condition checks or are we seeing has the condition changed. We are more interested in has the condition changed. And this is something the whale show has really shown me because whale skeletons will have different colors and cracks, they'll have knife marks, and they'll have all sorts of things and
Anne	[NI]of clear plastic overhead transparency film over the sheet and marking it with a pen. In this particular example I marked all the places where I noticed damage.
Carol	[NI]Of late, we have increased that and I should add that's been one thing that's been really good with the relationship with IT in that if it's flagged that we're reaching capacity we have been able to extend that storage.
Yu-Yu Win	[NI]Oh, okay. Of course there's Microsoft Office so I think it's 2013, also 2010.
Yu-Yu Win	[NI]Okay so, we have a wired network as well as a Wi-Fi network. There are two main parts. One is Back-of-House and the other one is Front-of-House
Robert	[NI]On a typical week how many hours would you spend using digital technology at the museum? And that would be like using your computer - Oh, I would say probably about 60 to 70 percent of my time.
Tijana	[NI]Once it gets uploaded into EMu it's there for everyone.
Tijana	[NI]Once we bought it, we didn't need the authority anymore because it was ours. We can just go ahead and do it. Things change a bit.
Yu-Yu Win	[NI]One is Zero(?) Client, that is where some of the small boxes you might see on some computers and they connect to the virtual network directly. And then the other one is actually called Thin Client, so that PC acts like a Zero Client, although it has a hard-drive attached to it. It doesn't really use the hard-drive. The only time it uses it is to latch onto the virtual environment, and you log straight onto that. And then you've got Fat Client.
Jenny Cauchi	[NI]One thing I can say though about the condition reports quite often if you're doing treatment on an object rather than making a separate condition report and then a treatment report, you can do the condition report and that treatment report all in that one treatment report record, so that's mostly what I do. I have attached I think a PDF once with notes and something like a diagram so there can be other things besides just photos that's useful to be able to attach to the file.[P]
Robert	[NI]One, because every time we go to a venue, we need to do condition checks

Linda	[NI]Or have a discussion with the curator about an artist's technique, so discussions
Linda	[NI]Or it might be nothing.
Carol	[NI]Part of my role is process so in terms of acquisition and loans process as well I have developed guidelines around those so I sort of understand where conservation needs to come into that process and what they need to do as part of that process. Same with touring exhibitions, I've recently been doing some work with touring exhibitions and doing some guidelines around when a conservator comes in, when they need to enter their information, and what they need to do.
Robert	[NI]people are now sampling albatross (?) and they can see from the analysis in their feathers what types of food they are eating. So what is the impact on the fisheries being over there. That's why we have those collections and they are not for display.
Sunita	[NI]possibly some of the conservation images I'm thinking about whether it can go
Jenny Cauchi	[NI]Quite a few, some weeks actually most of the week I don't get to touch anything. I'd say it's got to be 75% of the time, easily
Jenny Cauchi	[NI]since I'm from paper we get sometimes several every week of things and there might be multiples like something we want for purchase but it could be donation so someone might be giving us hundreds of photos to do with something or other and we have to assess them and provide implications
Carol	[NI]So any changes to a report have to come through me so I work closely with those who require those changes.
Carol	[NI]So as a collection manager you work very closely with conservation and so I think I have a very good understanding of what they do.
Matthew	[NI]So for me it's already this complex that I'm having, I'm not asking it to do a lot of the complexity that's probably required from others.
Robert	[NI]so having documents out and images out fast as well because sometimes we'll get a call that says "something's happened," what could, what should we do, having an image emailed really quickly
Anne	[NI]So here's an example of a collection item that was analyzed using x ray fluorescence.
Shane	[NI]So I do a lot of the fumigation and piece management programs in cleaning encased objects on exhibition, as well as monitoring the environment for relative humidity and temperature.
Matthew	[NI]So I do treatments to picture frames. I'm a framer, frame making and a conservator of frames and in the nature of picture frames due to their function
Matthew	[NI]So I guess I'm using a computer or I'm using the phone, I'm using that. That's more about communications.
Anne	[NI]so I guess it's not a comfort thing, it's really just ease, because we only have one computer that the team shares that has Adobe software on it...to do digital annotation of an image.
Tijana	[NI]So I had to do a quick condition report and ask "these are the kind of things we want to do.
Carol	[NI]So I think I have a pretty good understanding of conservation, what they do , when they should do it, and how they do it.

Carol	[NI]So I worked closely with the paintings conservators and the framing conservators and installers.
Anne	[NI]So I'll probably have two chunks of time every year where I go through and I audit myself, and I do anything that's outstanding. So maybe I'll print off one copy of that.
Anne	[NI]So I'm going along and just removing the soiling locally, just using a dilute soap solution and just treating a group of 50 hairs at a time, something that would fit along this way.
Yu-Yu Win	[NI]So if a person knows that they're going overseas and they need these files, they can upload them to HighTail.
Robert	[NI]So if the venue has the hardcopy with us they will need that to be - also we need to sign everything because that transfers liability from us to the venue, therefore insurance liability. And if you've ever dealt with insurance companies, you need to have a really serious line of identification of responsibility. And when that liability moves over, cause you need to make a claim, you need to be black and white on that.
Anne	[NI]So in terms of the time frames involved and best practice and everything, it's often that you can't really completely completely do it until the exhibition finished. Especially for a tour. So it could be five years something's out and about. But for a normal six month exhibition, you should be able to do that within the year, and have all that.
Shane	[NI]So it is a matter of correlating the objects with the numbers and then taking a photograph of them. And when you take a photograph, you take it from the front, two sides, and the back because it's a three dimensional object. A bit different if you're doing paintings and papers, sort of two dimensional stuff.
Anne	[NI]So it's probably from the institution's, like from the Wilhelm Fried's point of view, it's probably less than ideal,
Shane	[NI]So my job title is Conservation Technician and, basically, it is to support the conservators with treatment, hands-on treatment.
Carol	[NI]So my understanding of our infrastructure is we have a virtual environment. Some people, and I'm one who uses the local environment as well and uses the local machines for certain processes
Robert	[NI]So one way of approaching it would be basically noting the damage, treatment undertaken by me, please refer to condition report, which I will generate. Now for the DreamWorks, we've got temporary TMP numbers, which are temporary numbers, which are on EMu which relate to the DreamWorks project, which I will then prepare a hard copy that then goes in the folder for the touring. That is also emailed to the touring manager who will then incorporate that into their database if it's compatible. If it's not, we'll just do a PDF file that we can input with what we need to put in. So that's what we'll do for that particular situation.
Linda	[NI]so physically taking paints samples, setting them, looking at them under the microscope; those sorts of activities.
Yu-Yu Win	[NI]So say for example, our finance system is called TechOne(?) and that is used by quite a few government departments so we have to use that.[P]

Neil	[NI]So Te Papa's got two Internet links. There's a dedicated 50Mb circuit for conferences to use and there's a 250Mb circuit for staff and free Wi-Fi Internet connectivity. Wi-Fi, so Wi-Fi's available in most of the public spaces of the museum. I say most, a lot of the public spaces in the museum. And that is a free public Wi-Fi capability, where people can sign on the Wi-Fi, click on a little disclaimer button that says "I accept," and they can get on the Internet.
Shane	[NI]So that's for the records for the collector and us as the lenders. We both agreed upon the object's conditions they came in.
Sunita	[NI]So that's non-collection images so yeah.
Yu-Yu Win	[NI]So that's their responsibility to look after that. If they lost the information, there will probably be a penalty. I don't know that part.(security?)
Carol	[NI]So the images that are used in the condition reports are as they were specified by conservation. So the little thumbnails are what conservation wanted in their reports
Anne	[NI]So this is all really cool and definitely of interest to people who come in and research the collection for historical costuming purposes and everything.
Shane	[NI]So to a limited degree I do condition reports.
Tijana	[NI]so to have an image where you can clearly see where things are is just much more user friendly.
Anne	[NI]So we look at what could be present
Linda	[NI]so we might also search through information about proprietary materials if we're looking for a particular material to do a particular job.
Linda	[NI]So we take multiple images of the surfaces against which other museums can check because it's too hard to describe
Carol	[NI]So when we implemented EMu we worked very closely in designing what they wanted, how they wanted the process to flow, and how EMu worked.
Shane	[NI]So yeah, I think it's definitely a lot more accurate to do it with photographs.
Shane	[NI]So you can do it systematically so that people reading it can follow that as well. I mean, you do take photographs and you can do overlays and you can put the marks but you still have that reference. And this is probably more old school than what the conservators do because, again, they do a lot more than me so they are taking a lot more photos, and doing it digitally.
Tijana	[NI]So you can use photographic quality paper. It's expensive, you go and get it from the photography shop.
Shane	[NI]So you would use KE EMu for that. Sometimes I use it to find information that the curators have put in there about it so you know a bit more about what you're working on. Or what it's for sometimes. Because we get an object and sometimes we don't know if it's for exhibition, if it's for collections storage, if it's for treatment. You have to do a bit of finding that information and the curators might happen to put that into KE EMu and see what has already been put in there; and even if the conservators have worked on it previously.
Robert	[NI]So, I will do condition checks for those objects that come into the collection
Yu-Yu Win	[NI]So, mainly, as IT, we mainly look after our Back-of-House network. So Back-of-House will actually have Wi-Fi available as well but that's a hidden Wi-Fi(?) that we've given to you guys. Even though it's called FoH and is still

	available Back-of-House(?). So Front-of-House is a very old system and we don't get access to it.
Phillipa Durkin	[NI]Some people drive EMu like a Ferrari. I mean I wish I did, but I know enough about it do my work.
Shane	[NI]Some projects deal with storage, and some on just cleaning or preparing collection items for exhibition.
Sunita	[NI]some works that have lots and lots of images attached
Jenny Cauchi	[NI]Sometimes for things that are not high value and not the easy to go to, we might only have images to go off of and in that case I need to just be very much have a blank statement because you can't tell a lot about the condition and there might be things we can't see, so you kind of make something that covers a very broad…this might need work…this might need that, but you can't actually really tell.
Matthew	[NI]Sometimes I evaluate it more on that basis and therefore the implication straightaway that I'm allowing in the possibility for restoration as opposed to pure conservation as well at the beginning of the process.
Matthew	[NI]Sometimes I turn that into something formal if it's quite complex
Matthew	[NI]Sometimes I will do work on top of that and record details.
Robert	[NI]sometimes I'll do hardcopies, which can also be scanned as well.
Jenny Cauchi	[NI]Sometimes that can just be really good images that are taken once its up
Linda	[NI]That amount of information that's on the net, the amount of professional information, I mean that's definitely a plus.
Anne	[NI]that does this, that easily produces something that can be easily attached to K EMu
Anne	[NI]that interfaces well with the collection management system
Linda	[NI]That is part of our job. Surface cleaning with acquiesce solutions or other – with organic solvents. Sometimes it's just removing dirt and other times removing *inaudible*. Adhesives, we work with adhesives
Sunita	[NI]that most of the software that I would need I can access it from this building or there
Anne	[NI]that was all done using Adobe.
Anne	[NI]That's a JPEG image layered on a JPEG image –
Robert	[NI]That's also dependent on who's doing that work and how proficient they are and comfortable with that system.
Neil	[NI]That's how many nodes you can have on the same segment essentially. A class B is quite large, 65 thousand, something like that. We don't have that many on there, but basically they can all talk to each other and makes a bit of noise when it's broadcasted traffic, so it'd be nice if we could chop that up into smaller chunks.
Matthew	[NI]That's not EMu, but that's the management system for the museum.
Matthew	[NI]That's why. Where as I like to go deep, deep for me is the thing that's really important for me, knowing the object's that I work with.
Linda	[NI]The ability to take photographs is really useful

Sunita	[NI]The conservation staff, through email I think quite regularly because we've got a email address for our team called "emuhelp" and then people just email us directly to that email address or contacts us directly
Robert	[NI]The ease of information, the ease of information transfer, the ease of creating information in a way that's accessible to a lot of people. Moving those documents around, emailing to whoever, having access to other people's information as well
Anne	[NI]the environment tab, which I'll show you later, is not really essential from the point of view of annotating images.
Matthew	[NI]The graphic world is far more important than it used to be. The word always used to have primacy and something to be believed, but now we believe images just as much and sometimes more than we believe the words used to describe things, because seeing is believing.
Sunita	[NI]the imaging team will take images
Linda	[NI]the lender could check with our digital image
Matthew	[NI]The longer it's in the world, the more important it becomes.
Neil	[NI]The network itself is a 10Gb backbone switch network, with one gig to distributed nodes around the building and from there one node to the desktop. That's for staff. Although some staff are still running on some gigabyte switch under desks and possible even some 100Mb switches.
Matthew	[NI]The notion is more if I'm considering a major treatment – I need to document those things more thoroughly, and that would include images. I do tend to take quite a lot of images. *inaudible* So where there's something which I've recorded has been some kind of compromise, then I want to take a photograph of it before anything's happened to it.
Robert	[NI]The official way is to send a request and that's fine.
Anne	[NI]The other types of records that we have are spectra.
Tijana	[NI]The painting loaned to us by an outside person, and we wanted permission to be able to treat it before we could put it on display.
Tijana	[NI]the photograph can be so great for them. It becomes really important.
Jenny Cauchi	[NI]There might be types of objects that have slightly different requirements than others, like I'm thinking of something like - they'd be less likely to be things that we in conservation worry about, but we don't have a digital, for lack of a better word, time based media conservator I suppose, that might include digital or audio.
Anne	[NI]There's a ditto function
Robert	[NI]There's an official way of doing it and an unofficial way. The official way is we'll email a request and they'll schedule a meeting.
Tijana	[NI]There's EMu but then there's also Pou Mataaho
Robert	[NI]There's not a point in me sending something that just sits there and can't be used.
Jenny Cauchi	[NI]There's things like supervising interns, professional bodies within New Zealand there's a New Zealand conservators' professional group, and a lot of us are involved with that in various different ways, big members, and that's something that Te Papa supports as a national organization.

Sunita	[NI]there's various parts of the frame or work that they want imaged and before and after treatment images and for all that just description would not be enough the images are quite vital to the process I think for capturing what's been done and so.
Yu-Yu Win	[NI]They can access it
Neil	[NI]They don't come through to me very often.
Neil	[NI]They store a lot of stuff in K-EMu, but it hasn't been an issue yet. There's quite a big new SAN in the server room so.
Yu-Yu Win	[NI]They will log a call, it will come to a queue, that we monitor so there are three of us there doing that every day. And we pick out the queue we're assigned. We're assigned a level or location and then we rotate. So one person is assigned to Tory, one person assigned to level 2, one person assigned to level 3. During the morning we pick up all of the jobs in our area and we just go and do them. So that's the morning. And then the afternoon is more for meetings and project works and requests. People request for something to be set up and so we do them in the afternoon.
Matthew	[NI]Things are often missing off it that need to be replaced and recorded
Anne	[NI]This is all the exhibition, what is involved. Each exhibition has a module number in EMu, so all the objects that are in the exhibition are attached to that module record.
Linda	**[NI]This might be a very lament question, do you work with condition reports? All the time**
Neil	[NI]Tory St is very similar, there's actually a 10Gb link to Tory St. So from here to Tory St is 10Gb data fiber that we rent from one of the local fiber shops. Basically we've just got some fiber switches that go through. And again at the other end is 1Gb switch network everywhere.
Carol	[NI]Unfortunately some of those areas are not used, particularly preventative conservation. There was only one preventive conservator at the time and he was trained and helped in the development of EMu, he didn't really do a lot of work with EMu. And he since left, so no one's really picked that up, I think.
Carol	[NI]We also have our three multimedia repositories which I showed you a diagram about where all our media is kept.
Tijana	[NI]We can also be helping people like curators, and historians – other people
Tijana	[NI]we can do analysis and study around that
Jenny Cauchi	[NI]We condition report those objects, which aren't ours, but their condition reports that they've supplied that we check and might amend at it's sign off and then I think they have all been scanned. Dreamworks has kept those scans and we have the originals here because the objects are here, so if something happens, we can pull those out and check the dates and stuff…that might not actually relate to this.
Robert	[NI]We create condition reports, write them, do condition reports for internal work, and also external work as well. If I am working on a touring show that is coming in, so either a venue or a third party, I'll be working with their condition reports. Updating is required.

Robert	[NI]We deal with not just the physical side of the world, we deal with people's stories, their histories, some of their histories are not particularly good and they might not want to talk about it, or they may want to talk about it so there's comfort and trust, and that's why when you ask to record and there's all these things and you say "yes, I'm happy, absolutely happy with that."
Linda	[NI]We do condition reports at galleries that have loaned our works.
Linda	[NI]we do needs to be reversible, hence the consideration that goes into the selection of what we work with on the paintings
Phillipa Durkin	[NI]We don't tend to generate this piece of paperwork for our own objects in our own exhibitions, but if something has changed then we'll treat it and document it, so this is an example of what I do.
Anne	[NI]We each have our own card.
Linda	[NI]we give professional advice to the wider community, so that can include liaising with other colleagues but it's also liaising with other institutions, with members of the public individually, with other groups, the iwi and so forth.
Tijana	[NI]We go to dealer galleries and other places that potentially we could acquire. Houses, or all sorts of situations we go into.
Anne	[NI]we have access so that's fine, there's no problem with that I don't think.
Jenny Cauchi	[NI]We have to give them a brief summary of what our thoughts are on the implications. Doesn't usually happen with the conservation side, but if it's financial things.
Jenny Cauchi	[NI]We have to mount it, so its actually had a lot of implications in terms of cost, as well as, our work level – dealing with it once it is here.
Yu-Yu Win	[NI]We look after the service desk queue. Everyone logs a call if they need anything or if they have anything broken.
Linda	[NI]we might be examining something with a view for it to be acquired. We might be examining something with a view to treating it
Jenny Cauchi	[NI]we might take images and then generally mark them up,
Jenny Cauchi	[NI]We often do those trips with someone else so it would be with a cultural manager or a curator depending on what we're assessing. I went with one of the curators to look at one hundred Japanese prints not a few months ago.
Jenny Cauchi	[NI]We put in financial things as well, if there's materials we specially have to get for this piece that might impact its acquisitions, so they include it in the budget. It's quite important because often, we've had things get acquired that have had no money included for money or matting. Those things cost actually a fair bit.
Tijana	[NI]We recently had a session, as I said to learn how to upload images into the catalogue.
Tijana	[NI]we set quite specific things on Photoshop through the color quality that comes out. Otherwise things will come out completely wrong
Jenny Cauchi	[NI]we sometimes get photographs that we just get the digital file and then we can make prints if we get permission with the art, but we retain these images as well, but he's the one that comments about the digital part.
Yu-Yu Win	[NI]We use something called HighTail.

Yu-Yu Win	[NI]We usually just give them access to the program. So when a person starts and they say, 'We need KE EMu access,' we will say, 'Okay so we are adding the icon to your login.' And then the KE EMu team will create a login name and password and they will do training with these people. So we don't touch it at all. Like I said, I don't really have access to it
Shane	[NI]We were talking about one time using VectorWorks, it's a program where you can take the photo and then you can do all of the digitization (?).
Yu-Yu Win	[NI]we will provide that standard programs
Linda	[NI]we work off site, in that we work down in the storerooms sometimes to do condition reports.
Robert	[NI]we would take images and then upload them to EMu and then go and annotate them
Sunita	[NI]we've got a program called Crystal that we do reporting
Yu-Yu Win	[NI]Well because you can actually access HighTail from your personal computer anyway, so they can download them onto their personal computers with no problem. So there is no stopping them.
Robert	[NI]Well I don't because I have got about two and a half million objects. So I don't. So we tend that to our collection management staff, otherwise we're responsible for the day to day. Almost like a care management of those collections.
Linda	[NI]Well I think flexibility would make a perfect condition reporting system, whether it be hard copy or digital. So flexibility choice about the medium and then within that flexibility, to manipulate it as you want.
Tijana	[NI]Well it's different every single day, and things will change depending on what we're working on. I mean, there's no one set thing.
Robert	[NI]Well the only reservations I have is the obsolescence of, and keeping up to date, now how much of that is driven by industry and how much of that is driven by the needs of the user, opposed to the needs of the vendor to keep in business. So it's the obsolescence, is the issue.
Linda	[NI]Well, I haven't tried.
Anne	[NI]when I've got all the images attached to the record
Tijana	[NI]When it's scanned, before the condition reports went out with the paintings to wherever they're going, these would be scanned and kept in the loans folder.
Robert	[NI]which another person may come in five years later and look at that report, that they would at least have that
Jenny Cauchi	[NI]which for the exhibition are undertreatment when they are acquired you might not be because you have images that are getting to be taken, but you're not actually sitting there marking condition issues on those images at that time. It's something you might write when you are writing a condition report, but you don't physically mark up the image. Whereas with the loan and the tour where you've got a physical report accompanies the object and we do the image markup
Carol	[NI]Whilst I manage the physical and technical side of EMu in terms of troubleshooting and user issues, my job is also to manage the information and

	ways that we can record that information by following best practice and international standards
Jenny Cauchi	[NI]With exhibition work there can be that combination of assessment and treatment for preparation of things and collection maintenance, which it's not needed for an exhibition or it's not going on tour but needs work on it, so you just do the work that might come out of surveys we do that would collect information.
Robert	[NI]Yeah I am, but it depends on who the audience is I guess. Are they comfortable using it? Because one of the things that I do find is that "okay, english is my first language," but I work in places where it's not the first language.
Shane	[NI]Yeah I suppose having accessibility would be the only thing I'd have
Matthew	[NI]Yeah I suppose, and when I want to know something else then I go and ask.
Phillipa Durkin	[NI]Yeah it would be a bit longer, 30 min
Matthew	[NI]Yeah that sort of thing I think – if it has a direct association with any – if it is a part of a collection object or is a collection object then that should be in EMu, if it's an image of - I'm quite sure of that.
Sunita	[NI]Yeah to access those and to get it if I need something to get it installed I just need to contact the IT team
Anne	[NI]Yeah, all this stuff was put in through Adobe
Linda	[NI]Yeah, scanning spasmodic. How many hours a week…it might be half a day.
Shane	[NI]Yeah. And that's from identifying it, matching it up to the numbers in there, and photographing, and then writing up the notes into KE EMu. So yeah, it's an average of that time. Something like a carving could take a bit longer because it's quite bigger and you have to do it sort of in sections. So you'd start up at the proper left or proper right side of it and then you'd work your way down from top to bottom and then you describe each little part as you go. So you know, this is on the proper left side, left eye partially missing, or something like that.
Anne	[NI]Yes, and we put our names against any identification.
Phillipa Durkin	[NI]Yes, I always really appreciate EMu help because I sometimes go in and preempt needing new knowledge and going ask them. I find them very accessible and very helpful and IT as well whenever I need help I'll do it. Although my role is more hands on, I probably wouldn't need them that often, but they are very accessible when I do need them.
Phillipa Durkin	[NI]Yes, photos like I tend to deal with the framed works. See mine is quite straightforward. They tend to be crated, framed, nice and straight forward. My works go out framed
Linda	[NI]yes, we look after paintings physically, and work on them. We provide conservation assessments and advice to inform decisions by other staff around the ongoing well being of paints in the collection. We carry out remedial treatments of paintings for loans, exhibitions, acquisitions
Matthew	[NI]You have to be careful to differentiate between management systems that have come in simultaneously with digital – with the introduction of digital

	technology. They obviously drive one another, each one drives the other. It's completely clear that they are really like that, that's the way it now is.
Shane	[NI]You have your catalogue, you've got conservation, you've got exhibition, you've got scheduler. So you've got all these different tabs, which is good. I think it's good in a way because there are scopes to do different things but sometimes it's not as intuitive as you want it to be.
Jenny Cauchi	[NI]You put a little mylar overlay and then you mark it up with markers, basically with pens, so someone looking at it can right away see how it's a big stain there, things like that.
Phillipa Durkin	[NI]Yup or I'll make an appointment or I will go to one of their clinics because they usually have a set time when you can go and ask them questions. They'll be in a room on Tory St. on a Tuesday afternoon and you can go and ask them stuff and get a little lesson on something. I went one day just to refresh myself on how to add photos to the database because I don't do it enough and then you forget how to do it so you got to go do it again.
Robert	[NI]we would take images and then upload them to EMu and then go and annotate them
Shane	[P]There's a different format for loans, touring, and incoming loan or outgoing loan. So there are a different variety of ways of doing it and if you have to get your images on properly the way you want them on your condition report.
Shane	[P]And I think it's faster for me to do it that way then it is on the computer.
Matthew	[P]And it just takes a lot of time. I don't really think – there might be something around that and when computing becomes more intuitive then presumably that will make it quicker.
Anne	[P]And people just won't do it if it takes that time.
Robert	[P]And the people may not be comfortable using, or may not have access, and you may be in place that doesn't have electricity, you may be in a place that doesn't have reception. So it may not be appropriate
Matthew	[P]because I can think through my pencil more readily than I can through my keyboard, because it's native to me, I learned it as a child, and I think that's the real reason. People who the keyboard is the first tool that they used or close to it, then of course those people have a much greater facility than I have.
Matthew	[P]Because I'm not doing as much I can afford to do things which if you did a lot of it would be – the way I'm doing it would be seen as a waste of my time. "Or you can do it this way, that's a lot quicker", and they go "oh that's a good idea." But because I'm not doing it all that often to me I just clunk my way through in a fairly simplistic fashion.
Anne	[P]because it's storage format is inappropriate for it, it's suffering from the way it has been stored for the past 30 years.
Jenny Cauchi	[P]But I think it's also to do with I'm doing something with my hands, it makes sense for me to be writing somehow in my mind, and not typing. I don't know if it's to do with feeling more limber in my fingers or something but I just prefer it.
Jenny Cauchi	[P]but it's also if you want to take a little sketch or something, you can note right there really quick. It's definitely quicker than right now, even sitting there with a laptop, it'd be way quicker.

Jenny Cauchi	[P]But that being said, I definitely have used a laptop, tablet - I have not used a smartphone for condition reporting but I've done the others. Laptop's okay, the tablet I've tried - I wish I could remember the name of the software, what was it?
Linda	[P]But to cite it on the hard copy, because it was easier to mark up,
Anne	[P]But we don't have the time and the resources to go and look at all the hard copies and pull it all out, and put it in.
Tijana	[P]Currently the system is very time consuming
Tijana	[P]Depending on what purpose you're doing that for it can be a little bit different. So when they do go on loan we have the overlays.
Robert	[P]Depending on what the actually work is no, I prefer to have everything on the database digitized
Jenny Cauchi	[P]depends how brief and again if it's a very minimal treatment something really quick that you're just doing, you're going to focus on the condition that maybe relates to the things you're doing. You're not doing a full condition report of the object where you might be describing it in great detail to the nth degree. Most of our reports we are doing, especially for exhibition work, things that might have a time crunch, are like that. They're fairly brief, but if I was doing one for something where we are going to do a lot more study and analysis and it's going to be a big project. We do a really full detailed condition report that might be quite lengthy and we don't do anything as laborious as we did in school ever. I still write a reasonable amount
Shane	[P]For example, little ponies, there was 36 little horses and that actually took a long time. So that took a few weeks. There's another studio which is a big house and I'm conditioning that one. I'm still doing that one. It's been like a month and that's because there's just so many different components to it.
Phillipa Durkin	[P]For me for generating these ones is fine but then I have to scan the whole lot back in.
Jenny Cauchi	[P]For one or two things it's pretty quick. If it's a lot of things and they're very similar, I tend to do lots of dittoing, copying, and that sort of thing so you can repeat used information you put in. I don't have one template that I sort of copy.
Phillipa Durkin	[P]For this lot, I was there all afternoon just doing the taping and then the drawing. It does take a while. It is time consuming and then now that these have come back and I've signed them off
Anne	[P]have all your images on Google Drive and you can download them from Google Drive, write on them, and then that's a JPEG that you've made notes on, and that's pretty straightforward, but how do I get this off my device and back onto here? I have to email it to myself. And it's like, am I going to spend two days emailed 200 images to myself? And then that's not even the end of it. Then, I have to attach each one of those to K-EMu. And then if I wanted to print off a report that image is not going to be on it anyway. Do you know what I mean?
Tijana	[P]have to go into, not into the main catalogue part of the painting, you would have to go into some random thing like into the exhibitions items tab that it's related to, and go into this stupid little tab to write. Your handling notes which had to be exactly the same as what you had in the catalogue notes or it would print something random. Or not print anything. So it's that kind of consistency that wasn't necessarily there. Which was frustrating. With the whole EMu

	process, some things about it I find annoying. Like for example, if you don't know the number of something and you're trying to search for an artist. If you've got one letter wrong it won't find what you're looking for.
Robert	[P]I am very keen on having everything in the digital world
Tijana	[P]I can't find mistakes if I write straight onto a computer screen, I can't proof read. I need to print it out and read it.
Matthew	[P]I can't type without looking at my keyboard, I can't do. Even though I learned the finger placements and all that, I learned that stuff reasonably young because I had a typewriter, but I never did it enough to consolidate it, and I'm constantly clunking the wrong thing. And I'm one of those people who can't stand those bloody red lines underneath, but I see them as being useful. Tells me where to go. But I have to go back – chops off my concentration, my thought, and I have to go back and correct it before I forget or something, I don't know what the reason is. But it is something I notice about myself and it does tend to break up my line of think, sometimes I'll lose it. On the other hand, I do like writing, but I do like the act of writing whether it's on a keyboard. I do like thinking and then putting it down somewhere, whether it's through a keyboard onto a screen or onto a piece of paper. I do like the process and I value the word very highly.
Phillipa Durkin	[P]I do at the moment. I'm liking this process because I feel there isn't anything as good yet. I've seen electronically generated condition reports and they seem very vague. They're either a circle or an arrow. They're not specific enough. I would use it if it was more precise. The ones I've seen I feel are not quite detailed enough.
Jenny Cauchi	[P]I do think having to do the whole scanning, that sort of thing, that's a pain in the butt. And certainly not the best use of our time to stand there and have to scan in the hundred reports you've just done. So that would be a disadvantage.
Jenny Cauchi	[P]I find for myself and I can take the notebook anywhere and it's handy for me when I go back and for my own sort of record keeping
Phillipa Durkin	[P]I guess I'm just used to using a notebook then I've got it to check back on. I just use a notebook. It's probably my age.
Linda	[P]I guess the beauty of a digital image is that you could blow it up to see in great detail the characteristics of what you're looking at
Shane	[P]I hand write these. I don't use laptops because I find it's easier for me because I'm photographing at the same time as I'm taking notes. I can just jot down stuff.
Shane	[P]I hand write these. I don't use laptops because I find it's easier for me because I'm photographing at the same time as I'm taking notes. I can just jot down stuff.
Tijana	[P]I have an old school diary, I don't like putting things into my iPhone.
Phillipa Durkin	[P]I have the inenviable task of scanning them all into the computer. I've got to scan all these, so I'm going to be standing there for quite sometime.I might have to do it in sections because that is a lot of standing next to the photocopier.

Jenny Cauchi	[P]I just don't tend to work that way. I need to sit down and take a whole day. Do that entry the whole day and not do it again for a while, which probably isn't the best way to work, but I do get caught up now and then, but I'm not caught up at the moment.
Carol	[P]I know some conservation staff find the lists a little cumbersome
Robert	[P]I know that there is confident(?) having a hard copy but at times you have to have faith in the system and that information might be lost, and I have no reason to believe that it will be lost. Before when I started doing this work a while ago, it was mainly paper based and now it doesn't need to be because the technology is good enough.
Linda	[P]I like drawing directly on the hard copy
Linda	[P]I like the flexibility of that, and the ease of it Being close to the object.
Matthew	[P]I now have to spend more time, I imagine, than I would have if we never had the digital, because we would have to be driven still by some of the older ways of doing things, I suppose.
Jenny Cauchi	[P]I rarely have time for collection maintenance.
Jenny Cauchi	[P]I think if you could zoom in and see things probably that would be great but often an installation in a venue, you need a physical thing that you can look at there, especially if multiple people have to sign it off, so it's having that portability and clarity is really important that system still works very well with that even though it evolves extra steps of putting that information back in the system, scanning and all that sort of stuff and it could get lost.
Phillipa Durkin	[P]I think it's pretty looked into drop down suggestions when you've got condition and it's got drop downs and you can't write in what you want to write in, but that is because they want consistency of information that which I do understand.
Jenny Cauchi	[P]I think it's probably the worst thing in time consuming to put photos in EMu.
Carol	[P]I think paper form of that is not really the way we want to go or should go, or is the easiest way in terms of – I'm think of particular touring or out of the building, you want to have it digital. And also digital, you can do more with it. You can zoom in more, gives you more flexibility than a printed image on a page.
Jenny Cauchi	[P]I think that is something that we should be doing, but its getting difficult with time and resources we have at the moment. The volume is huge.
Phillipa Durkin	[P]I think that it is very time consuming to create the image with the overlay
Jenny Cauchi	[P]I think that material should mesh in terms of type of reporting that we're doing with the physical things as well, because it is another object even though it doesn't have a physical presence except in the computer. I don't know what he captures in terms of the quality of the file.
Sunita	[P]I think we tried to introduce the handheld gadget to store information especially locations information but then that we haven't really been doing that too much these days so if theres especially little hand-held systems or that can capture information or what is it

Tijana	[P]I use Apple at home. All my products are Apple. And I find it so much easier to go into iPhotos and put it in really quickly
Robert	[P]I will be updating the ones on KE EMu when I get the hard copies back, which we're going to go through the process now of having them scanned and sent back over. And I will update, edit and generate another set that will then go out as a fresh 2016 set because the reports are too thick and too difficult to actually work with.
Robert	[P]I would prefer everything to be - well, let me qualify that by saying maybe if I'm marking up an image pens if necessa
Phillipa Durkin	[P]I'd use a tablet and be able to draw on my drawing
Phillipa Durkin	[P]I've also got to generate the photograph and then stick the overlay on it and then write on it, so that's also another stage, so maybe half an hour per image.
Tijana	[P]if it's something that we going out having to write and do things and it's so slow then that's going to be more of a hindrance than
Robert	[P]Images, cameras, are good enough. Why not? Why print?
Jenny Cauchi	[P]In other places I've worked we had like three volunteers just in paper who compiled documentation for and created files and did the basic thing that you could put in your notes, I'm spoiled, spoiled rotten! And also a conservator photographer team who - anyway, we have to do a lot of that stuff that takes away from time we can spend actually in the lab, which definitely is a hinderance I think
Robert	[P]It also depends on what time is allowed for us to do it. We can get very busy in this lab so a job that may take a recent graduate five hours, we may only have ten minutes to do it. So it depends what you're doing.
Tijana	[P]It can be really time consuming, you can be sitting there for ages
Anne	[P]It could be a scanned I suppose, and made a JPEG image in K EMu. The reason I haven't done that is I'm not confident photocopy would actually – I've just never done it, I don't know if that would be…if I'd be happy with what that looked like.
Phillipa Durkin	[P]it is time consuming that I then have to make this an official document by scanning it into the computer
Phillipa Durkin	[P]It only started a couple of years ago, we used to just give the hard copies to the loans people and they used to just hold, but now we have to scan them in. It's added to the task of condition reporting.
Neil	[P]It'd be nice if it could be faster.
Shane	[P]It's certainly been like 27 years where we've seen a change overtime from just using mechanical instruments to electronic stuff and how much easier and more accurate it is.
Anne	[P]it's just an overwhelming about of administrative work that people just don't have time to do, and it wouldn't get done.
Linda	[P]It's suitable to have something in your hand to do that. That's what I find.

Robert	[P]It's variable depending on what they're for. If it's an internal one, for just Te Papa or if an object is damaged or if I'm working on it for any particular reason, it'll be through the KE EMu process using the central databases; and I'll just update as required. If it's a touring show, I do that a lot. I spend more …(something about whale touring show). With that touring show, I generated condition reports, other conservators make condition reports, worked with collection managers and Te Papa staff, and also the EMu staff, undertaking condition checks; and people will write observations or changes of condition on those reports.
Phillipa Durkin	[P]its about I don't know…it's about ten steps
Sunita	[P]just do it in his excel spreadsheet and then come back and then sometimes where he gets us to import the files into emu so if there's a way to make all that more efficient rather than this like too many steps in that process, like
Sunita	[P]loans process so rather than just collection information its caters to all the processes as well so then the processes are captured in it the conservation process, the loan process, the exhibition process, yeah so I feel like what it does it good but if there's ways to even make it more efficient
Robert	[P]Now, it could take five minutes per object, or it could take twenty minutes per object. It depends on the size of it. So if it's an eight foot print in a frame and there's minimal damage already, scanning and seeing if there are any changes will take maybe five to ten minutes. Not very long. If it's a large, modern, contemporary artwork, it could take days, it could take hours.
Linda	[P]Oh we do only on that computer.
Jenny Cauchi	[P]Ok, because the looking at the object could be the thing that takes the most time.
Phillipa Durkin	[P]Or a desk or whatever or whatever you store it on. It doesn't have to be produced with paper. It can be downloaded and all that kind of stuff. So you bypass doing all this even (the paper form of condition report) Save trees.
Neil	[P]Probably the only main thing would be –so the way we do backups currently is – I do all the K-EMu backups as well, so we do backups onto a disk system here and we replicate to Tory St. And we do tape backups, but it can take a while to do all of those.
Jenny Cauchi	[P]Right now, what you've probably heard from everyone else is that most people have them stored in their H Drive and then you try to…its very time consuming.
Robert	[P]So by the time everything comes back here, there's a lot of documentation
Robert	[P]So I'm coming back to an avalanche of emails which I'm going through now. I've really been on EMu five this morning to look as acquisitions, loans, incoming loans, outgoing loans, condition reports for another object as well. So I'll just log in fairly regularly, to say on a daily basis, absolutely. I can't say how many hours I would, but quite a bit of the time
Phillipa Durkin	[P]so if that was already computer generated, you could just put them together or you probably wouldn't have to then scan all this in together.
Jenny Cauchi	[P]So if there were things with new technology that would allow us to spend more time with the objects that would be great.

Shane	[P]So the first thing to do is, because it is a TMP number, which means it is a loan, I had to match up each object with their loan number. You get a schedule which says the stuff that have been collected and being brought in, so I had to identify, oh man what are their names, like Starblazer and Morning Glory. And if you have a TMP number, you have to match that up to each image just so you know you have everything there. And then you check additional accessories.
Jenny Cauchi	[P]so we spend a lot more time on EMu then some people
Anne	[P]So we'll get something like this requested for exhibition and we'll look on K EMu to see what kind of stuff exists about this object. And it will say "hard copy report only." So none of the data is actually in. It just says that there is, somewhere, there exists a hard copy report.
Robert	[P]So we're wanting to work out a way of how do we have those sweep of images, and we have laptops and tablets, but a sweep of images which are very easy for people to scroll down to look at changes in condition and update any changes in condition, and have first, second, third generation of images depending on what
Phillipa Durkin	[P]Some sort of way of annotating the photograph in the computer would be really cool instead of the time consuming overlays and colored pens and then also having to scan them at the end of the day when the process is all finished.
Jenny Cauchi	[P]Sometimes if something's really vague you're crawling around under it with a light - often you're doing that with someone else and they might be doing the writing as you're talking.
Jenny Cauchi	[P]The only problem right now is that means I have a backlog. I always have a backlog of things to enter. I probably still only have forty to fifty percent of the treatments I've done entered because I do need to take chunks of time and I can't do it everyday right when I finish.
Jenny Cauchi	[P]The reason why I still like handwriting is there's already enough things on my bench with the object to not also have a laptop or something that takes up room with cables and the ethernet wire.
Jenny Cauchi	[P]The reports exist but they're not always in EMu right away.
Jenny Cauchi	[P]The sensitivity of being able to be quite detailed and having the image - when you have the overlay it's quite clear if someone comes in and adds something they have to initial it and date it. It's that thing of not being able to alter what's already there so if you're sending it out somebody wouldn't have changed something, we would know if they were adding something new or they could only look at it and that's it. So it's being able to make sure it's a secure record once it goes out. That's one thing that would be important. That would be a reservation I guess, because it would be being able to track - have that audit trail of who made changes and what changes they were.
Tijana	[P]The time constraints of having people to come and do that for you.
Robert	[P]The time for creating a report for an object on internal exhibition, again, depends on the artifact
Robert	[P]There are advantages to hardcopies, people have comfort in using paper work, as opposed to where everything is kept on a memory stick.

Jenny Cauchi	[P]There is a worry that they might get misinterpreted or misused because sometimes objects in mid treatment can look and even with a good description people who don't know what it is can…that was the concern, so that's why we're putting them in there but I think it's worse to potentially lose them if something happens to a person's H Drive or that person leaves and it gets worse.
Jenny Cauchi	[P]There's always some research projects that ideally are working on that might be to do with things in the collections specifically an artist and their technique and their materials or a body of work or it could be to do with preventive things. One that I'm meant to be doing and I haven't had much time for is looking at microclimates for framing, which is not..I'm not reinventing the wheel…people do a lot for that, but I'm trying to look at it at a point of view, specific to Te Papa and New Zealand's kind of climate and things that are really pragmatic and kind of low tech, low cost to look at how are existing framing performs versus changes we might be able to make that would enable us to travel it to more venues that we would right now isn't a suitable venue because the environment just isn't within the parameters we want, so there could be things like that.
Robert	[P]There's always things to do, it's just not the condition reports, it's the writing of the papers, it's the writing of the documents that are required for the conservator.
Anne	[P]There's probably…I would say it would be at least a 100.
Phillipa Durkin	[P]There's so many aspects of that and I think because KE EMu is information hungry you spend a lot of time adding the same information.
Anne	[P]They are listed in EMu, they wouldn't necessarily have all this information.
Anne	[P]They had somebody back in this era that did the typewriting of reports for them. Sadly, that position was disestablished, because we could surely use it now.
Robert	[P]They tend to be a little more involved than just a condition report because it'll say this is the condition, this is the treatment, this is what we did, this is why we did it, investigation maybe, analysis of materials, we may have to come up with treatment options, we may have to do a few tests for things, so that will take days at a time.
Phillipa Durkin	[P]Uploading the photos takes so long. I wish you could just drop and drag and add it in that way, nice and quick. I'd be able to get things done a lot quicker, but no.
Matthew	[P]We are willing to hear it from enough people that there's something wrong there, but I personally don't see it – as I said before it's complexity that's probably one of it's strong points.
Phillipa Durkin	[P]we do have a laptop. I probably only used it once or twice to do condition reporting. I tend to just revert to a quick notebook, jotting notes[P].
Anne	[P]we do kind of label boxes and send emails saying "we've done this analysis, just so you know, Grace, that this object does definitely have pesticides present." But then once Grace leaves - she's no longer employed here, she's retired or whatever - somebody else comes on board, how is that information
Jenny Cauchi	[P]we don't do condition reports for everything that's going on display.
Jenny Cauchi	[P]We just don't have time.

Jenny Cauchi	[P]We'll maybe take some samples. Do some bits for analysis, so you might have a condition report that's just here's the state of the object but then you might have further things: here are what pigments are present and here's this and that, so it will probably keep evolving as it goes on to a massive one maybe not quite as detailed as Linda has been doing to the Turanga, but a bit more going up to that scale. It's not an easy average to say…I'd say I'm fairly quick so what that translates to…yeah…the other kinds of reports we might do, I just thought of this, as we do sign offs of Dreamworks that's a brought in show.
Anne	[P]We've put in the information, if we're getting the object out and doing a condition report anyway we'll go ahead and pull the hard-copy and enter it all in.
Jenny Cauchi	[P]well people were taking good photographs before but we have other things we can do imaging wise and other types of analysis we can do that relate to digital in the sense the information might end up in a digital file at some point and really enhance what we can do.
Linda	[P]Well sometimes if you forget to fill in the part, if you've for example written a condition report or treatment report and you've forgotten to write the acquisition number of the object in that certain part, it gets lost.
Linda	[P]Well, first up it takes longer to write one from scratch, to prepare one than it does to check a document. And it does vary enormously. That took days, whereas these might take – perhaps half a day. The whole process of looking and writing and recording took around half a day, for an average size work. Are we overwhelming you?
Linda	[P]Well, I type my notes into EMu, then I print them out as a rough copy and then I use that when I draw
Matthew	[P]Whereas we used to have somebody, like a secretary, doing that work. But then, what you said, if you're high enough up, but even when I first started at the museum in conservation we had somebody who wasn't full time but she would write all our reports up. We would write our reports in all our various different handwritings and she was great at interpreting it and she would write beautifully set it out, format it our in the days of electric typewriters, but typewriter none the less. And we wouldn't have to spend the time doing that. And I could go *mimics writing* and my handwriting, scribbling away and she'd get it right. And you'd always check it. There were people who were absolute masters at doing that, that was her profession. It was her profession to do that and she did it extremely well, and we loved her for it and she saved us a lot of time.
Tijana	[P]Which makes it more of a pain if you want to adjust your images to save onto EMu, because sitting at those computers trying to
Shane	[P]Yeah, I do for writing up my notes. But I prefer that than doing it on a laptop and we haven't really got set up to use iPads. So yeah, I do prefer pencil and paper for my initial notes and then writing them up later.
Jenny Cauchi	[P]you are actually marking up images
Matthew	[P]You can actually have your head over the object doing things – maybe that might involve writing.
Jenny Cauchi	[P]you can't always do the individual annotation for a particular image that way and you have to go back in and do it, so I've only done one by one.
Linda	[P]You know it's very good for your brain, writing

Tijana	[P]You would have to eventually change all the details. So it ends up just being easier to do every single photo individually, you can write the description of the photo how you want it.

Theme	**Mentioned by**	**Total from**	**Total from**	**Total from**	**Total from**
Mobility		**Conservation Department**	**IT Department**	**DCAS Department**	**Total Department**
No Wi-Fi in conservation lab and limited Wi-Fi throughout the rest of the institution	Carol, Yu-Yu, Tijana, Sunita, Linda	2	1	2	5
Insufficient amount of mobile devices	Robert, Matthew, Shane, Jenny, Yu-Yu, Phillipa, Anne, Sunita	6	1	1	8
Difficulty working by an object	Matthew, Shane, Tijana, Linda, Jenny	5	0	0	5
Complications sending and obtaining information on condition reports	Anne, Phillipa, Shane	3	0	0	3
Not able to bring personal devices	Yu-Yu, Neil	0	2	0	2
Trouble utilizing HighTail	Yu-Yu	0	1	0	1
Problems with creating, editing, and handling condition reports off-site	Robert	1	0	0	1
Not having curators in the same building as Conservation staff	Anne	1	0	0	1

Theme	Mentioned by	Total from Conservation Department	Total from IT Department	Total from DCAS Department	Total from Total Department
Image					
Trouble with uploading images to KE EMu	Sunita, Jenny, Yu-Yu, Neil, Shane, Tijana, Anne, Matthew, Phillipa, Robert	7	2	1	10
Difficulty with annotation	Linda, Tijana, Anne, Jenny, Shane	5	0	0	5
Difficulty moving images between devices	Robert, Jenny, Anne, Tijana	4	0	0	4
Issues with scheduling with photography team	Anne, Shane	2	0	0	2
Associating relevant data with images	Tijana, Anne, Robert, Shane, Phillipa, Jenny, Sunita	6	0	1	7

Theme	Mentioned by	Total from Conservation Department	Total from IT Department	Total from DCAS Department	Total from Total Department
Access					
Data management with KE EMu	Jenny, Anne, Carol, Linda, Tijana, Sunita, Shane	5	0	2	7
Limited access off-site	Robert, Tijana, Shane, Yu-Yu	3	1	0	4
Problems accessing images	Linda, Jenny, Tijana, Robert	4	0	0	4
Trouble accessing certain programs	Sunita, Anne, Linda, Tijana, Yu-Yu-, Shane	4	1	1	6
Security of files	Robert, Yu-Yu, Anne, Linda, Tijana	4	1	0	5
Access to specific equipment in multiple locations	Tijana, Shane	2	0	0	2
Slow running technology	Carol, Yu-Yu, Neil, Jenny, Tijana, Linda, Sunita	3	2	2	7
Difficulty accessing cameras	Shane, Anne	2	0	0	2
Workflow and location of objects	Sunita, Anne	1	0	1	2

Theme	**Mentioned by**	**Total from Conservation Department**	**Total from IT Department**	**Total from DCAS Department**	**Total from Total Department**
Communication					
Familiarity to other staff	Anne, Robert, Linda, Yu-Yu, Neil, TIjana, Sunita, Carol, Shane, Jenny, Matt	7	2	2	11
KE EMu functions	Anne, Sunita, Jenny, Linda, Shane, Neil, Philipa, Carol, Tijana	6	1	2	9
Communicating ideas in old reports	Matthew, Anne, Tijana, Linda, Robert, Shane, Jenny	7	0	0	7
Familiarity to technology	Sunita, Matt, Anne, Philipa, Linda, Shane, Neil	5	1	1	7
Complexities with training	Yu-Yu, Shane, Robert, Matthew, Jenny, Phillipa, Sunita, Tijana	6	1	1	8
Variation of working preferences	Shane, Anne, Robert, Yu-Yu, Tijana, Matt, Jenny, Linda	7	1	0	8

Theme	**Mentioned by**	**Total from Conservation Department**	**Total from IT Department**	**Total from DCAS Department**	**Total from Total Department**
Process					
Preferring analog over digital technology	Linda, Phillipa, Jenny, Shane, Robert, Matthew, Tijana, Anne, Sunita	8	0	1	9
Parts of current process are too time consuming	Jenny, Phillipa, Carol, Anne, Robert, Neil, Tijana, Matt, Shane, Linda	7	1	1	9
Preferring digital over analog technology	Shane, Robert, Phillipa, Linda, Jenny, Matthew, Carol	6	0	1	7
Difficulty accessing and understand information from retired or inaccessible staff members	Jenny, Anne, Linda	3	0	0	3
Taking convoluted workarounds to certain processes	Matthew, Jenny, Philipa, Anne, Sunita, Shane	5	0	1	6