



WPI

A CRITICAL ASSESSMENT OF ENDPOINT TECHNOLOGY FOR THE E.W. TIPPING FOUNDATION

An Interactive Qualifying Project Report:
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Submitted by:

Trae Jennette
Samuel Russell
Luis Vinke

Submitted to:

Professor Andy Klein, Major Advisor
Professor Seth Tuler, Co-Advisor

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ABSTRACT

In Australia, a new disability service framework is being implemented and has cultivated a competitive culture amongst disability service providers. The E.W. Tipping Foundation (EWTF), which is one of these disability service care providers, is striving to become a sector leader through the means of improved use of smartphones, laptops and tablets, also known as endpoint technology. The goal of this project was to perform an assessment of the endpoint technology used at EWTF through interviews with employees, clients and stakeholders to determine what devices the Foundation needs not only today, but in the future. The assessment led to a set of recommendations aimed at improving their services to disabled individuals in the state of Victoria through the use of updated endpoint technology.

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EXECUTIVE SUMMARY

There are many groups of people in the world who face challenges to their wellbeing and full participation in society. One of these groups is made up of people who have disabilities. A disability is a physical or mental impairment which restricts a person's ability to perform everyday activities (AIHW, 2014). Some examples of these limitations are loss of hearing or sight, speech impediments and learning deficiencies. Although people with disabilities are starting to receive equal representation and care in many countries, they continue to face social and physical challenges such as inaccessible transportation, discrimination and stigma, and a lack of adequate health care and rehabilitation services (World Health Organization, 2011). A second group is abandoned and abused children. According to the World Health Organisation, "child abuse" or "maltreatment" constitutes all forms of physical and emotional ill-treatment, sexual abuse, neglect, and commercial or other exploitation, resulting in harm to the child's health, survival, and development (WHO, 2014). As of 2012, Australia has approximately 4.63 million people with disabilities, and over 170,000 children were subject to abuse or neglect (AIHW, 2012). Both are social problems being addressed by Australia with the implementation of the National Disability Insurance Agency (NDIA) and by the Department of Human Services (DHS). These two entities provide a framework of disability services and children care for social service providers to follow.

The E.W. Tipping Foundation (EWTF) is a not-for-profit organization registered under the NDIA and DHS to provide disability and child support. EWTF serves over 1000 people with disabilities and 50 children across Victoria (E.W. Tipping Foundation, 2014). The Foundation provides care and support to clients in their own homes and communities, and housing and support to people with disabilities and protected children.

In a recent effort to improve care services, the E.W. Tipping Foundation has implemented its Strategic Plan for 2013-2016. This plan outlines how the E.W. Tipping Foundation will improve their care system by promoting client feedback and leadership, recruiting and developing staff, partnering with clients, stakeholders, and organizations, and increasing its financial sustainability. By traveling across Victoria talking to employees and clients, EWTF was able to identify the main issues in the organization and address them. As Graeme Kelly, CEO of EWTF, explained, "Better IT and resources for employees was one of these issues".

With this issue in mind, **this project was intended to assist the E.W. Tipping Foundation better support their clients and employees by assessing the endpoint device technology used by employees, concluding with a set of recommendations that suit the specific functions of each job within the organization.**

To achieve the goal, the following objectives were completed at E.W. Tipping:

1. Establish an understanding of the organizational structure, operational and client care systems, and current endpoint device use.
2. Identify technological needs of employees.

To establish an understanding for the EWTF organizational structure, operational and client care systems, and current endpoint device use, we performed a literature review, interviews, and regional branches visits. The literature review allowed us to understand the organization prior to the endpoint device assessment. The interviews allowed us to learn about each employee's job functions and endpoint device use. The regional branches visits allowed us to understand the services provided and the needs of the organization, as the culture varies from office to office.

Through our point of contact, James Digby, we identified a list of 6 executives and relevant employees, 4 regional branches, and a short list of influential clients to interview and visit. We interviewed a total of 24 EWTF employees, 1 stakeholder, 1 staff member of a similar organization (Dassi's CFO), and 1 group interview with 14 employees. Additionally, we visited 2 regional branches, in Grampians and Gippsland, and assisted living houses in each region.

RESULTS

Through the literature review, interviews, regional branches and houses visits, and market research we made four findings. For us to provide endpoint device recommendations to EWTF, we first had to understand the different employee roles within the Foundation. To do this, we categorized all EWTF employees into groups based on job similarities and technological needs. Our second finding was what endpoint devices and systems are currently used at the Foundation, and how these devices impact each employee's job function. We used this information to identify areas for improvement at EWTF. Lastly, we performed market research and obtained our last finding, which was optimal endpoint device package for each job function group within the Foundation.

Finding 1: Analysis of employees job functions at EWTF

Employees with different job functions require different kinds of endpoint devices. Each employee at EWTF has different technological requirements, and in order to provide recommendations we grouped employees according to similarities in their job function, geographic location, travel time, and endpoint device usage. The figure below depicts the different groups, and the job functions in each one. This method of organizing employees served as a tool for determining endpoint devices needs different job functions. In Table 1, you can observe the different employee groups and the respective employee within each group.

Table 1 – Employee Groups by technological need similarities

Executive <ul style="list-style-type: none"> • Chief Executive Officer • Chief Financial Officer • Human Resources Manager • Community Relations Manager • Chief Service Officer 	Technology-Based <ul style="list-style-type: none"> • ICT Manager • ICT Staff • Carelink+ Manager • Carelink+ System Administrator 	Design-based <ul style="list-style-type: none"> • Community Relations & Fundraising Officer • Communications Officer • Web & Social Media Officer 	Region-based <ul style="list-style-type: none"> • Service Manager • Service Coordinator • Team Leader
Office-Based <ul style="list-style-type: none"> • Payroll Manger • Payroll Staff • Payroll System Administrator • Financial System Administrator • Financial Controller 	Outreach-based <ul style="list-style-type: none"> • Learning & Development Coordinator • Regional Manager • Regional Accountants 	Assessment-based <ul style="list-style-type: none"> • OHS Manager • OHS Staff • COSI Manager • Facilities & Services Manager 	Support-based <ul style="list-style-type: none"> • Practice Leader • Direct Support Worker

Employees at EWTF have different technological needs unfulfilled by the current devices at the Foundation. Despite every employee using devices for at least the main features, such as emails and texts, there are other features that could benefit employees. Some of these features were access to GPS when traveling to branches and houses, access to data or a Wi-Fi hotspot when on the road, and the ability to take pictures and write notes when performing assessments. Table 2 explains the technological needs each employee group had as identified by our interviews and observations.

Table 2 – Employee Groups Technological Needs

Needs	Executive	Office-based	Technology-based	Design-based	Assessment-based	Outreach-based	Region-based	Support-based
Portable			✓		✓	✓	✓	✓
Access to Internet	✓	✓	✓	✓	✓	✓	✓	✓
Assistive travel technology (GPS, Bluetooth, etc.)	✓		✓		✓	✓	✓	
Access to emails	✓	✓	✓	✓	✓	✓	✓	✓
Phone calls/ SMS/ MMS	✓	✓	✓	✓	✓	✓	✓	✓
Access to endpoint device systems		✓	✓		✓	✓	✓	✓
Video conferencing	✓		✓	✓	✓	✓	✓	✓

Finding 2: Endpoint devices currently used by employees at EWTF

E.W. Tipping has different endpoint devices in place at the organization. By interviewing employees and visiting regional branches, we were able to ask and identify what endpoint devices employees are using and how they are using these devices. Currently, EWTF has total around 350 devices. These devices include over 200 laptops, 100 smartphones, around 10 printers, and the remaining are thin clients. The current devices owned by the organization are given to part-time and full-time employees only, and are allocated based on availability.

Phones

EWTF provides two different sets of phones. The first is a Samsung C5220 flip phone, and the second phone is a Nokia 1661. The phones provided by the organization only include the basic features in a phone such as sending and receiving texts and calls. All employees use smartphones, but only a small number use the phones provided by EWTF because these phones do not meet their technological requirements. As explained by employees, the reason for not using these devices is that they are out of date and they restrict usage to texting and calling. Every employee identified access to email and internet on an effective interface as “essential” features in a phone, and these features are not provided by these two phones. In Table 3, the features that EWTF’s phones provide can be observed in comparison to the features provided by the personally owned smartphones used by employees.

Table 3 – Features comparison of EWTF’s phones vs. employee’s personal smartphones

Features	EWTF’s phone	Smartphone
Calls	✓	✓
Texts	✓	✓
Emails	✓*	✓
Photos/Videos	✓*	✓
Wi-Fi	✓*	✓
Bluetooth	✓	✓
Downloadable applications		✓

** EWTF’s phones provide these features but not as efficiently as today’s smartphones*

Laptops

We found that the laptops provided by EWTF are outdated, heavy, and slow. Therefore, the laptops are not being used to the full functionality that normal laptops are used for. Employees do not take their laptops with when they travel, do not use all the features that a laptop can provide, and are not satisfied with the current laptops at the Foundation. The problem with these laptops is that they can be up to 6 years old. EWTF has not upgraded their laptops because as Sharon Strutt explained “EWTF cannot afford devices for everybody and funding is a major issue, therefore devices are replaced as they break”. The laptops are used by most of the employees, such as payroll, finance, human resources, and other employees to access customer relationship management systems, Citrix, emails, and process word and excel spreadsheets.

Tablets

The E.W. Tipping Foundation currently has only provided tablets to executives and board members to electronically manage meeting agendas, papers and documents, and improve information security. Other than executives, some employees have bought their own tablets and use it for work purposes. During interviews we asked employees how their tablet helps them at work. The majority of employees interviewed said they used their tablet for e-mails, performing assessment, taking pictures, and taking notes in meetings. Most employees that own a tablet reported to have an Apple iPad, and a Samsung tablet.

Through the interviews, we identified that assessment-based job functions need to perform onsite assessments at different locations. Outside of this job function, no other job function has the need for a personal tablet to effectively complete their job function.

Wyse Thin Clients

A Wyse thin client is a device based on cloud computing, and includes a hardware and software package. It is used for desktop virtualization and IT support. As explained by Nalin Thamel, ICT regional helpdesk of E.W. Tipping, the Wyse terminal provides a virtual computer to users without the need of a physical PC. It connects through the Internet into the Citrix server provided by EWTF, and in return provides the user the same features as a computer, such as word, excel, and Internet

Wyse terminals in the organization are not reliable and not cost-effective. This type of thin client relies heavily on the servers at the central office of EWTF and on the internet connection. If the internet connection fails then any employee using a Wyse terminal gets disconnected and cannot work. Additionally, the terminals cost around \$530AUD, and for almost the same price EWTF can purchase a laptop that can be used offline.

Finding 3: Areas for improvement

The E.W. Tipping Foundation can also improve their services by addressing certain areas directly related to endpoint devices. These areas for improvement are described below.

The network connectivity is a major problem EWTF faces every day. If the Internet fails, for example, the majority of the Foundation would be offline or without access to the main servers.

The current study focused on endpoint devices used by employees, yet we identified that EWTF's care services could benefit greatly from providing clients with endpoint devices. EWTF can further investigate this gap and make a study on the benefits of giving clients access to endpoint devices and any other assistive auxiliary technology on the market.

Similarly, we identified that EWTF could benefit greatly from the use of devices that can assist the use of endpoint devices. Some of these auxiliary devices can be Wi-Fi hotspots for providing internet access to employees while travelling, webcams for video conferencing, protective gear to improve the device's longevity, and more.

Lastly, we found that EWTF does not have policy and framework in place for the purchasing and distribution of endpoint devices to employees. We believe that a policy would streamline the process of future device evaluations and replacements. Similarly, an ideal policy would also allow employees to apply for a policy adjustment if they feel as though they are not being given all of the necessary endpoint device technology to effectively complete their job functions.

Finding 4: Endpoint Device Literature Review and Comparison

After identifying the endpoint devices used at the Foundation and the employees' technological needs, we performed market research on endpoint devices. Through this market research we identified what devices suit best EWTF and each employee group as identified in Table 3. Through the market research we learned that laptops are the most efficient device for work purposes given its specifications, such as a standard of 4GB of RAM minimum. We found that no job function in EWTF needs a desktop computer because this type of device is used mainly for high computing purposes such as mathematical modeling and analysis. We found that a tablets price outweighs its functionality, because for the same price the Foundation can purchase a laptop. Similarly, we found that thin clients are too expensive for the features it provides in comparison to laptops.

RECOMMENDATIONS

We have established a set of general recommendations through which the E.W. Tipping Foundation can address their endpoint device needs as a whole. In this section, the devices we recommend for the Foundation are explained, as well as what devices each employee group should be allocated. Lastly, we also provide EWTF with auxiliary device recommendations to go along with the endpoint devices, and what the Foundation should consider for the future.

Recommendations for Primary endpoint devices

We recommend that moving forward, E.W. Tipping purchase endpoint technology that will completely serve their intended function and be comparable to those commonly used in the consumer industry. In the past E.W. Tipping has invested in a fleet of endpoint devices, of which, a predominant number either didn't completely fulfill the employees' technological needs and as a result were not being used in an efficient manner.

Laptops

According to our research, and the technological needs of each employee at EWTF, we concluded that laptops are the most useful tool for E.W. Tipping moving forward. They are portable, and provide enough processing power and features for employees to complete their job functions. Consequently, we recommend the following:

- Replace all laptops
- Replace all Wyse terminals with laptops
- Periodically phase out desktops and replace with laptops

Tablets

From our findings, we identified that tablets are more of a nice to have rather than a need to have for most job functions. Consequently, we recommend the following:

- Purchase tablets for mobile, assessment based job functions
- Purchase tablets for each regional branch for the purpose of client intake
- In the future, purchase tablets for a rental system for job functions with moderate need

Smartphones

From our findings, we identified that if employees have a better personal device than what is provided to them for work, they are more likely to use their personal device for work. Therefore, we recommend the following:

- Only purchase smartphones that are comparable to models used by employees for their own personal use
- Smartphones should have calling, SMS, picture taking, access to e-mails, and Internet.

Recommendations regarding auxiliary technology

We identified a number of auxiliary technologies that will help better facilitate and improve the use of a new endpoint device fleet as well as greatly increase the efficiency of E.W. Tipping's employees.

- Video Conferencing in all offices
- Protective casing for newly purchased devices
- Ergonomic devices such as docking stations and separate keyboards
- 4G dongles to provide access to internet while traveling

Recommendations regarding implementation of endpoint devices

EWTF should upgrade the endpoint devices of its employees to enable them to perform their jobs better. Based on the current inventory EWTF has, the research made about endpoint devices, and the specific endpoint device recommendations made we were able to develop a table with an estimated cost for the total number of devices. The table below depicts the expected investment EWTF has to make to upgrade the devices at the Foundation.

Table 4 – Estimated cost for endpoint device investment

Device	Description	Qty.	Est. Cost	Total
Laptops	Replace current old laptops	160	\$ 599.00	\$ 95,840.00
	Replace Wyse thin clients	70		\$ 41,930.00
Smartphones	Replace current old phones	103	\$ 1,000.00	\$ 103,000.00
Tablet	Tablets for OHS, COSI, and Facilities	3	\$ 500.00	\$ 1,500.00
	Tablet for client intake by branch	10		\$ 5,000.00
Total		362		\$ 247,270.00

Recommendations for implementation of a framework and policy for future endpoint device investments

We have identified within E.W. Tipping's system a lack of framework and policy that identify the rules and regulations regarding purchasing and distributing of endpoint devices to employees. We recommend the following:

- Establish an endpoint device policy and framework.

Recommendations regarding future possible projects

Based on the areas for improvement identified we recommend EWTF to continue sponsoring WPI groups and performing future projects in the areas mentioned before. Three future projects similar the one we performed are described below.

Future Project 1: Address E.W. Tipping's connectivity throughout Victoria

We recommend EWTF perform a project focused on the Foundation's connectivity. The goal of this project would be to address the network connectivity and infrastructure at EWTF. It is the next step in the process for EWTF to improve its technological assets

Future Project 2: Develop a campaign for obtaining information technology partnerships

A partnership with an information technology company could help subsidize the cost of endpoint technology, among other benefits. This campaign could include a stakeholder analysis, demand analysis, market analysis, and risk analysis which would ultimately result in a contract management and investment strategy (Strategic Sourcing, Government Services Group, 2011).

Future Project 3: Promote client access to endpoint technology

We identified that client access has the potential to greatly affect EWTF's care systems. This is clearly the direction that EWTF is looking to move in the future, but it is an issue that cannot be solved simply by giving tablets or smartphones to every client that pays for service. We recommend that this gap be addressed in a comprehensive effort as part of the "Strategic Plan 2016-2019".

CONCLUSION

With E.W. Tipping's focus on the Strategic Plan 2013-16, we believe that the findings and recommendations in this report will bring them one step closer to achieving the goals outlined in their plan. From the recommendations provided above, an improvement in the operations of the organization will lead to a higher quality of service provided to clients and a better work environment for its employees. With the purpose of this Interactive Qualifying Project to support the E.W. Tipping Foundation's efforts to improve its endpoint technology, the concept of investing in infrastructure and devices is expected to set a precedent in the disability care sector of Australia. With optimism, this precedent will result in a cultural change for many service providers and cause more organizations to invest in endpoint technology, resulting in overall increase in the capacity to provided quality services to people with disabilities and protected children.

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NOMENCLATURE

COSI	Client Outcomes System Improvement
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CRM	Customer Relationship Management
CSO	Community Service Organization
DHS	Department of Human Services
Endpoint Devices	Any wireless capable device such as tablets, laptops, smartphones, etc.
EWTF	The E.W. Tipping Foundation
ICT	Information and Communication Technology
NDIA	National Disability Insurance Agency
NDIS	National Disability Insurance Scheme
OHS	Occupational Health and Safety
Rostering	Refers to a system used to allocate workforce hours and employees

1 INTRODUCTION

The World Health Organization estimates that 15% of the world's population has a disability of some form (World Health Organization, 2013). This percentage varies greatly throughout the world, with many first world countries in Europe and North America having percentages approaching 20% (World Health Organization, 2013). A disability is a physical or mental impairment which restricts a person's ability to perform everyday activities (AIHW, 2014). Although people with disabilities are starting to receive equal representation and care in many countries, they continue to face social and physical challenges such as inaccessible transportation, discrimination and stigma, and a lack of adequate health care and rehabilitation services (World Health Organization, 2011).

A second group needing support is abandoned and abused children. According to the World Health Organisation, "child abuse" or "maltreatment" constitutes all forms of physical and emotional ill-treatment, sexual abuse, neglect, and commercial or other exploitation, resulting in harm to the child's health, survival, and development (WHO, 2014). There are over 4 million abandoned children worldwide and between 500 million and 1.5 billion children are estimated to suffer from child abuse or maltreatment (ISK, 2014; UNICEF, 2010). Child protection programs provide care to children and help protect them from abuse, which in many cases involves trafficking, harmful practices, child marriage. Some of the benefits of child protection programs are improved health and mental health outcomes, and integration in the community.

Disability care is a major social issue currently in Australia, where people with disabilities make up approximately 18.5% of the population, which is well above the global average (ABS, 2012). Making disability care and community support in Australia very important issues. While child protection services are far less extensive than disability care services in Australia, the Convention on the Rights of the Child outlines the fundamental rights of children to be protected from any harm, making child protection a matter of importance for the Australian Government (UNICEF, 2006). In order to provide quality care to all people with disabilities and children, the Government of Australia has formed the National Disability Insurance Agency (NDIA), in parallel with the Department of Human Services (DHS) in Victoria. The NDIA has established the National Disability Insurance Scheme, which ensures that people with a disability have access to community and care services, and gives them the power to control and personalize the care that they receive. The DHS is a government agency that promotes and upholds people's rights, wellbeing and safety. These agencies have been established to ensure disability and social care organizations in Victoria are providing people with disabilities and children the best quality of service, equal employment opportunities, and integration in the community; one of these organizations being the E.W. Tipping Foundation (EWTF) (NDIS, 2014).

The E.W. Tipping Foundation is a not-for-profit organization that provides care and support to over 1000 people with disabilities and 50 children across Victoria (E.W. Tipping Foundation, 2014). The Foundation provides care and support to clients in their own homes and communities, and provides housing and support to people with disabilities and protected children. As a disability and social care organization that provides services to both people with a disability and children, they receive funding from the NDIA and the DHS. In a recent effort to change the focus of the Foundation and improve care services, the E.W. Tipping Foundation has developed and begun the implementation of its Strategic Plan for 2013-2016.

The Strategic Plan 2013-2016 is addressing all areas of the Foundation related to client care, and is part of their goal to become a leader and pioneer in the disability and social care sector. This plan outlines how E.W. Tipping will improve their care system by promoting client feedback and leadership, recruiting and developing staff, partnering with clients, stakeholders, and organizations, and increasing its financial sustainability. One key area that the E.W. Tipping Foundation has not addressed yet in the Strategic Plan 2013-2016 is their endpoint device technology. An endpoint device is any device that has wireless capabilities, such as desktops, laptops, tablets, and smartphones. They are used by staff for accessing EWTF's databases and systems, sending emails, rostering, finance, organizing records, and a number of other tasks, all of which are essential to the Foundation. E.W. Tipping believes that their current endpoint device fleet is old and outdated, and is a major limitation to the efficiency and effectiveness of their staff. If employees are not being given the best tools to complete their job functions in the best and efficient manner, it directly limits the quality of care that EWTF can give to its clients.

The goal of this Interactive Qualifying Project was to support the E.W. Tipping Foundation's efforts to improve their endpoint technology by assessing the endpoint devices used by its employees and provide recommendations for further improvements. This goal was achieved by conducting interviews of staff in various roles and geographic locations of the E.W. Tipping Foundation's workforce. We also interviewed with a similar disability care organization in Victoria as a way of validating some of our findings. Using all the data collected, we developed endpoint device recommendations that suited the specific needs of each employee's role, and the organization as a whole. While performing the methods to complete this project, we identified gaps that the E.W. Tipping Foundation should address in the future to continue to improve their organization. These endpoint devices recommendations and general endpoint technology guidance, are intended to allow the staff at the E.W. Tipping Foundation to complete their job functions in a more effective manner, and improve the Foundation's ability to provide quality care to its clients.

2 BACKGROUND

To understand the role endpoint devices can play in improving disability and social services, it is essential to first understand the scope of disability and social services in Australia. Section one of the background defines different types of disabilities and provides an overview of disability and child displacement in Australia. Section two presents the entities set to address these social problems in Victoria, Australia. These entities are the National Disability Insurance Agency, which sets the National Disability Insurance Scheme, and the Department of Human Services. They both provide a disability care and social services framework through which people with disabilities receive the best possible care from disability care organisations.

Endpoint devices also play a crucial role in disability care services. Section three of the background describes endpoint devices and their features as well as addressing possible uses in the disability care and Customer Relationship Management systems (CRM's). There is also a brief focus study on similar organisations to E.W. Tipping to highlight best practices of endpoint device management in disability care and child protection fields.

2.1 DISABILITY AND SOCIAL ISSUES IN AUSTRALIA

As of 2012, Australia has approximately 23.1 million people, of which the state of Victoria makes up 25%. The 2012 Disability, Ageing and Carers report of Australia showed that 1 in every 5 Australians reported having a disability. Of these people with a disability, 60% need assistance with at least one area of normal activities (ABS, 2012).

Additionally, in 2012 over 170,000 children Australia were subject to abuse or neglect (AIHW, 2012). Approximately 41,000 of these children were on a care and protection program, of which 44% were in foster care, 47% were living with relatives, 5% in residential care and the remaining 4% in other allocations (AIHW, 2012).

Care of people with disabilities and protected children are two issues of importance in Australia. The following section provides information about Australia's current situation regarding people with disabilities and protected children.

2.1.1 Defining disability and types

As described by the Australian Government “a disability is one or more of 17 limitations, restrictions, or impairments which restrict a person’s ability to perform everyday activities” (AIHW, 2014). Each of these limitations can be categorized into 5 major disability types as identified by the Australian Government. These types are physical, intellectual/learning, neurological, psychiatric, and sensory/speech. Figure 1 graphs the percentage each disability type represents out of the total disabled Victorian population. Table 5 presents a more in depth description of each disability category and the limitations it causes. Each disability category represents the most common disabilities often seen in people. However, each disability category has a greatly different number of people who are affected by it.

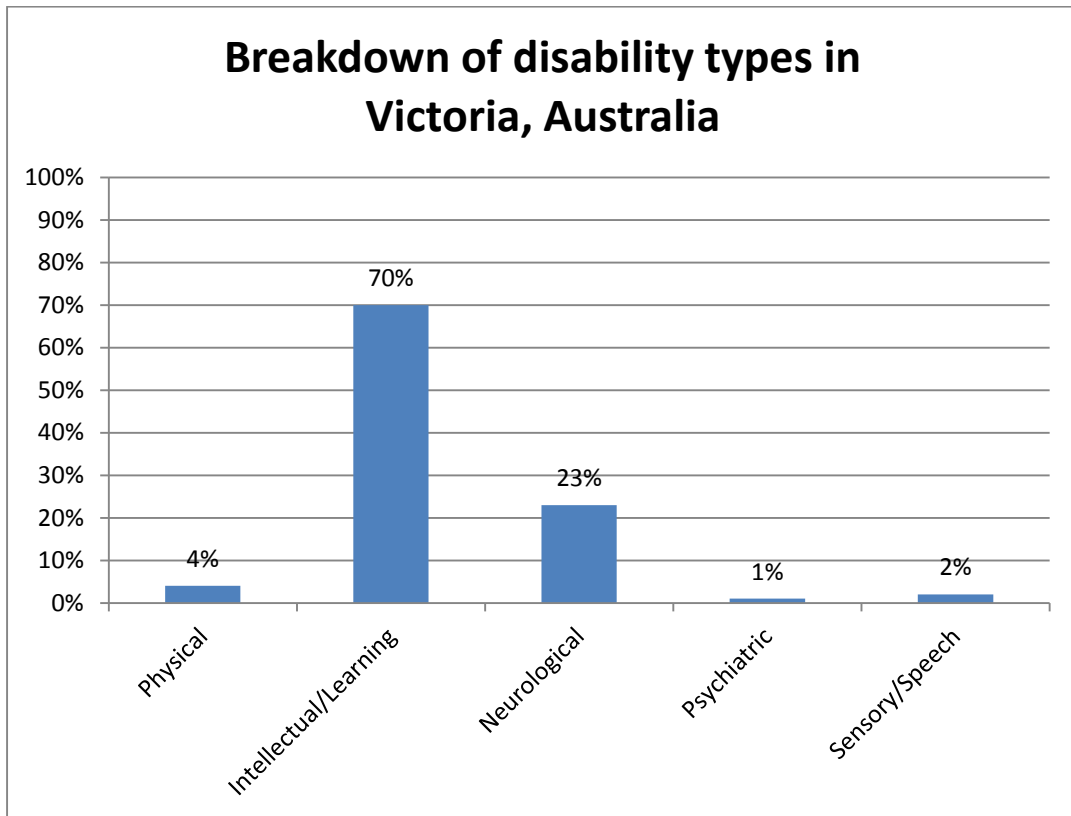


Figure 1 – Breakdown of disability types in Victoria, Australia (NDIS, 2013)

Table 5 – Types of disability and its limitations

	Definition of disability type	Limitations of disability type
Physical Disability	Refers to a total or partial loss of a person’s bodily functions or part of the body (Physical Disability Council, 2014).	<ul style="list-style-type: none"> • Chronic or recurrent pain or discomfort causing restriction • Shortness of breath or breathing difficulties causing restriction • Incomplete use of arms or fingers • Incomplete use of feet or legs • Restriction in physical activities or in doing physical work
Intellectual Disability	Results from difficulty learning and managing daily living skills. This is because their cognitive processing is impaired (Centre for Developmental Disability Health Victoria, 2013).	<ul style="list-style-type: none"> • Difficulty learning or understanding • Difficulty reading
Neurological Disability	Produced by damage to the nervous system that results in the loss of bodily and/or mental functions. Heart attacks, lack of oxygen to the brain, infections and other similar problems can result in a neurological disability (Inner Melbourne VET Cluster, 2013)	<ul style="list-style-type: none"> • Blackout, fits, or loss of consciousness • Nervous or emotional condition causing restriction • Long-term effects of head injury, stroke or other brain damage causing restriction • Any other long-term condition resulting in a restriction.
Psychiatric Disability	Results of an intermittent and episodic process of a variety of mental illnesses (Australian Institute of Health and Welfare, 2013). Depression, anxiety, bipolar disorder, and others are some examples of the mental illnesses people with a psychiatric disability can show (Public Service Commission, 2013).	<ul style="list-style-type: none"> • Nervous or emotional condition causing restriction • Mental illness or condition requiring help or supervision • Receiving treatment or medication for any other long-term condition or ailment, and still restricted
Sensory/ Speech Disability	Results from the loss of one or more senses, whether it is sight, hearing, smell, touch, or taste. Additionally, it includes any form of speech impediment. (Public Service Commission, 2013).	<ul style="list-style-type: none"> • Loss of sight (not corrected by glasses or contact lenses) • Loss of hearing where communication is restricted, or an aid to assist with, or substitute for, hearing is used • Speech difficulties

Disability care services in Australia

The services listed in Table 6 address the major disability categories identified by the Australian Government (NDIS, 2013).

Table 6 – Services provided to people with disabilities

	Description of disability category	Services offered per disability category
Mobility	Helps the person with a disability move safely in the home or community	Guide dogs, canes, training, advice
Communication	Provides the person with a disability with special and general training that helps with reading and writing	Special devices (scanners, magnifiers, screen readers) and general communication technologies (portable devices with special software)
Self-care & Self-management	Helps by providing strategies, training, and tips to organize your home and identify items	Dividers, organizers, tagging tools, and other equipment
Social Interaction	Helps by linking and connecting the person with a disability with the community.	Events and services in the community Recreation, cultural, and sporting activities
Learning	Identifies areas of difficulty for people with a disability and helps by providing intervention and giving aid and training, access to literacy services, vocational education, therapy and information	Mobility support, books, learning equipment, training, education courses, etc.
Capacity for social and economic participation	Helps the person with a disability find a job and participate in the community	Training, counseling, peer and emotional support, practical and professional assistance

2.1.2 Child protection in Australia

Every state in Australia has established entities and departments responsible for ensuring children are protected from harm. For children to be considered for protection, the harm needs to be considered abuse or neglect.

A child is placed in out-of-home care for the following reasons (AIFS, 2012):

- 1) The child has been abandoned by his/her parents
- 2) The child's parents are dead and there is no other person willing to take responsibility
- 3) The child has been sexually abused by either the parents or by other people and the parents have failed to protect the child from this type of harm
- 4) The child has suffered emotional or psychological harm whereas he/she can develop emotional and/or intellectual development damage

- 5) The child’s health has been harmed and the parents cannot provide them with basic medical assistance

Children placed in out-of-home care are managed by community service organizations (CSO). These organizations offer a wide range of services and placement options to children. Each CSO has six main areas of responsibility. These areas of responsibility with its respective description can be found in Table 7 below (DHS, 2012).

Table 7 – CSO’s responsibility areas

CSO’s Area of Responsibility	Description of Area of Responsibility
Assessment of referral for placement	Create a case with each referral made and check the children’s eligibility according to the established criteria
Caregiver management	Responsible for the recruitment, assessment, training, support, and supervision of care workers
Pre-placement planning	Ensure care and placement plans are developed and implement for each children in out-of-home care
Case management	Responsible for working with the child and family towards case planning goals. CSOs are also responsible for managing the care and placement planning process of the child.
Placement management	Provide appropriate levels of supervision and support to children in placement
Post placement support	Responsible for developing and implementing a detailed leaving care plan for all young people transitioning from their care.

Out-of-home care can vary in duration, lasting from a day to several years depending on each child’s case. There are three different types of placement care that meet the differing needs of children (DHS, 2007). These types of placement are:

1. Kinship care: provided by extended family members, friends, or members of the child’s social network.
2. Home-based care: provided by a CSO and places children in their own home. Examples of home-based care could be foster care or permanent care.
3. Residential care: provided by paid staff in residential care houses. These houses have an average occupancy of three to four people.

2.2 DISABILITY AND SOCIAL ENTITIES IN AUSTRALIA

With such a large community of people with disabilities and vulnerable children, Australia has taken the initiative to centralize disability and social care services by setting standards of which all care providers need to abide by. The National Disability Insurance Agency and the Department of Human Services were established to provide a framework of disability services and children care, respectively, for social service providers to follow.

2.2.1 National Disability Insurance Agency and Scheme

The National Disability Insurance Agency (NDIA) was set to supervise the rollout and functionality of the scheme. The NDIS, established by the NDIA and previously called the DisabilityCare Australia, is a reform launched in July of 2013. The Productivity Commission in 2011, an independent research and advisory body funded by the Australian Government, identified a gap between states in the support given to people with disabilities. After two years of deliberation, it was agreed by the Council of Australian Governments (COAG) that there was a need to improve the disability services and increase opportunity for people with disabilities (NDIS, 2014). The NDIS was announced as part of the Australian Government's 2012 budget and was established with the intention to ensure people with a disability, up to the age of 65 years, obtain access to community services and individual plans that meet their needs (Inner East Melbourne, 2012).

The scheme was first implemented on the 1st of July of 2013 in four locations. These locations were South Australia, Tasmania, the Barwon area of Victoria, and the Hunter area in New South Wales. It is expected that the full scheme will be launched in Victoria on the 1st of July of 2016, and every state and eligible resident will be covered by 2018-2019 (NDIS, 2014).

There are 6 sectors the NDIS identified as the key areas to address to better serve the community of people with disabilities. These sectors include independence, economic, education, health and wellbeing, living arrangements, and social (NDIS, 2014). A disability care organization that helps people with a disability in each of these 6 different sectors is eligible to receive funding from the NDIS. In Figure 2 you can observe the percentage of people identified in Victoria that need help in each sector based on the second quarterly report of the NDIS of 2013 (NDIS, 2013).

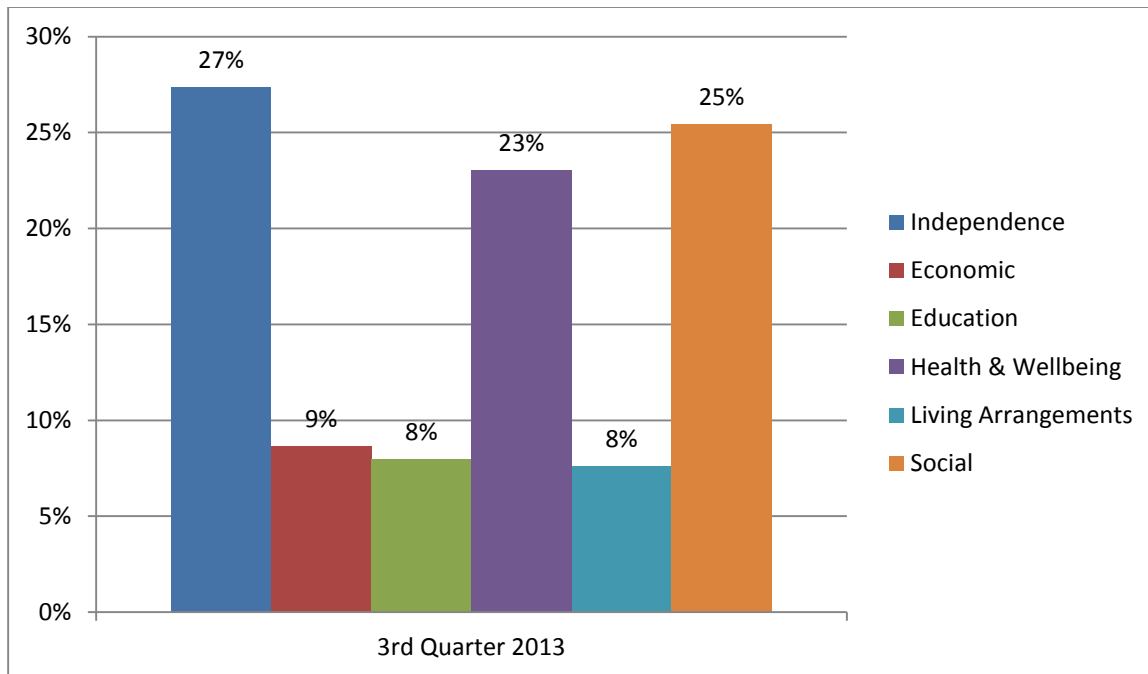


Figure 2 – People with disabilities' problems distribution

The most important issue addressed by the NDIS is the independence of people with disabilities and allowing them to choose their own service providers. In this manner, the NDIS incentivizes self-directed care through Individual Support Packages (ISP). These are funds allocated to a person with a disability to provide them with the necessary resources to meet their specific needs. The funds are then used to buy a range of disability-related support options chosen by the person with a disability to assist them in achieving their goals. An ISP allows clients to maintain independence and control of his or her decisions, while still receiving the disability services that best meet their needs (DHS, 2014).

2.2.2 Department of Human Services

The DHS is a national department that sets quality standards that need to be met by funded service providers and department-managed services. On the 1st of July of 2012 in Victoria, the DHS replaced the Standards for Disability Services, Registration Standards for Community Service Organizations and Homelessness Assistance Services Standards. The objectives of the standards set by the DHS are to promote and uphold people's rights in such a manner that people with a disability and children can have access to the best quality of service from providers, their wellbeing and safety is maintained, and their participation in the community is promoted (DHS, 2014).

The Victorian Department of Human Services is divided into four administrative regions, made up by a total of 17 locally-based areas for service delivery. Each region, north, south, east, and west, provides strategic oversight and coordination for the areas within them and act as both provider and commissioner of disability services. Funding is divided between the regions on the basis of population. Regardless of size, each disability service provider receives an equitable share of the fund. The DHS provided the community of people with a disability a total of \$1,587.7 million in 2013 (DHS, 2012).

Providers are required to be registered to receive DHS funding (DHS, 2014). The Victorian Register of Disability Service Providers currently has 273 registered organizations.

2.2.3 NDIS and DHS comparison

Both entities share a common goal, which is to promote the wellbeing of Australians and include everyone regardless of social status in the community. The NDIA and the DHS have different structures and models. In Table 8 below you can observe the differences between each model and how they come together in the Australian social system. The most important aspect to keep in mind between each model is that a disability and social service organization can obtain funding from both, because one provides funding for people with a disability and the other for protected children. It is important to notice this because an organization could provide services to both, children and people with disabilities, and if that is the case then such organization needs to abide to both, NDIS and DHS standards, regulations, and funding model.

Table 8 – NDIS vs. DHS

	NDIS	DHS
Service funded	People with disabilities	CSOs that protect children
Funding model	Follows a business model	Follows a contingency and block funding model
Description	The person with a disability that received funding holds the money and chooses the service desired. Then the service provider creates an invoice to the client, and afterwards gets paid for the services provided.	The CSO holds the money. Contingency model: the CSO gets funding after a house has been fully occupied. Block Model: the DHS asks the CSO to receive a set amount of children and then provides funding per children.
Fund payments	Pays the organization after the service has been provided	Pays the organization before the service has been provided.

2.3 ENDPOINT DEVICES

The following section describes what an endpoint device is, how they work and communicate, and why they are important. Endpoint devices offer different functionalities and are used for different reasons. This section provides information on how disability care organizations use these devices and how endpoint devices can be most efficiently deployed across organizations.

Endpoint devices, also known as wireless-enabled devices, are any type of devices that can communicate with other devices using frequency signals (Pinola, 2014). This category includes but is not confined to desktop and laptop computers, smartphones, tablet PC's, and thin clients. Protocols and

standards have been set in specific ranges of this signal to allow wireless communications. The most common methods of wireless communication are Bluetooth, infrared, GSM and CDMA, and Wi-Fi. Although these three methods are the dominant types of wireless communications, others exist such as Zigbee and ANT. In the scope of this project, an endpoint device was defined by our sponsor as an internet, Bluetooth and cellular-data enabled hardware device (Digby, 2014, personal communication).

Cellular

Cellular communications are any standard used for wireless communications, primarily in phone services. An example of these are LTE, 3G and 4G, Global System for Mobile communication (GSM) and Code-Division Multiple Access (CDMA). GSM is largely used in Europe, Asia, Australia, and the US, covering more than 90% of global mobile connections (GSM World, 2014). The remaining global mobile connections are covered by CDMA communications, LTE, and 3G and 4G. Some of the features that cellular systems provide are data networking, sending and receiving text messages, and phone calls (Carneiro, 2005).

Bluetooth

Bluetooth technology is a standard used to allow communication between devices within a short distance up to 100 meters. It is used with the intention to replace cables on phones, tablets, computers, and other devices. As of 2013, over 2.5 billion devices that use Bluetooth as a communication method have been sold, and over 20,000 companies support the use of Bluetooth in their devices (Bluetooth SIG, 2014).

Wi-Fi

Wi-Fi, also known as IEEE 802.11 standard, is a standard set by Wireless Fidelity with the goal of seamless connectivity between devices. A recent study made by Wakefield Research showed that 95 in 100 people already own a Wi-Fi enabled device. As of 2014, more than 4 billion Wi-Fi devices have been sold in the world (Wireless Fidelity, 2014).

With over 2.5 billion devices that have Bluetooth, 4 billion devices that come with integrated Wi-Fi, and more, it has become a need to be up to date with technology. As explained by the Australian Mobile and Telecommunications Association (AMTA) wireless enabled devices offer a wide range of useful features that allow a person to improve his/her daily activities. These features can include managing calls, listening to music, performing visual tasks with a colour display, taking pictures, sending and receiving text messages, accessing email, setting reminders, navigating through areas, among others (AMTA, 2014).

With the wide range of features offered, consumers have noticed an increase in productivity (Cisco, 2013). This has led the people into buying more devices every day. One third of the total global population is online or using endpoint devices (Blodget, 2012). It is expected that over 2.3 billion PCs, and over 1 billion smartphones and tablets combined will be used by people by 2015 (Vasquez and Shiffler, 2011). PC and non-PC sales in 2011 surpassed \$800 million (Deloitte, 2011). In Figure 3, the breakdown for PC and non-PC sales for the year 2011 can be observed. Smartphones and laptops were the top selling devices in that year with \$375 million and \$200 million, respectively.

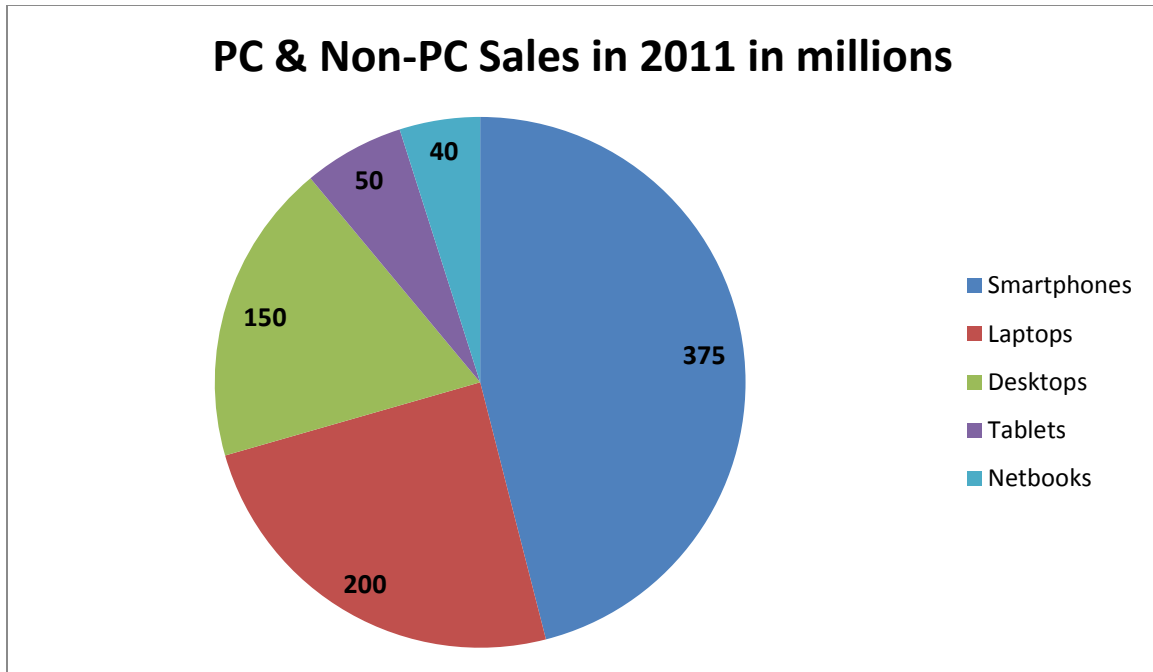


Figure 3 – PC & Non PC Sales in 2011 worldwide

Endpoint devices such as smartphones, laptops, desktops, tablets, and netbooks, communicate through CDMA or GSM, Bluetooth, and/or Wi-Fi. These devices are also the leading work tools for improved performance and connectivity in the workplace (Cisco, 2013). Each of these devices is aesthetically different, and therefore can be used for different purposes. Understanding these different features helps to understand the difference between each device and what each device can best be used for.

Desktops, netbooks & laptop computers

As described by PCmag.com, desktop computers are stationary computers with high capabilities and are very powerful in terms of processing applications; laptops, portable versions of desktop computers, and netbooks, smaller versions of laptops, offer the same features as a desktop computer (PCMag.com, 2014). For example, users can word process, browse the Internet, interface with other devices and more with these types of computers. See below Figure 4, 5, and 6, for reference of a desktop, a laptop, and a netbook, respectively.



Figure 4 – Dell Inspiron 300 Series Bundle © (PCMag, 2014)



Figure 5 – Lenovo IdeaPad Z710 © (PCMag, 2014)



Figure 6 – HP Mini 1104 Netbook © (PCMag, 2014)

Smartphones and tablets

Smartphones and tablets are endpoint devices with built-in applications and Internet access. The main difference between these two devices is the size. Smartphones tend to range from 7.6cm to 18cm while tablets range from 18cm to 30.5cm. They come integrated with functionalities such as digital voice service, text messaging, e-mail, Web browsing, camera, MP3 player and more. These devices are lighter and smaller than laptops, and their distinguishing characteristics are the use of touch screen as the input device, and the wide range of applications available for download ((PCMag, 2014; Indvik, 2012). Smartphone's and Tablets allow the user to download applications that they can use for increasing work productivity, managing tasks, entertainment, and more. As of 2014, there have been more than 47 billion applications downloaded across Apple, Android, Windows, and Blackberry platforms (Mobile Statistics, 2014). In Figures 7 and 8, you can observe examples of modern smartphones and tablets, respectively.



Figure 7 – Modern Smartphones © (PCMag, 2014)



Figure 8 – Modern Tablet Computers © (PCMag, 2014)

Thin clients

A Thin client is a device based on cloud computing, and includes a hardware and software package. It is used for desktop virtualization and IT support. Thin clients provide a virtual computer to users without the need of a physical PC. It connects through the Internet into a server, and in return provides the user the same features as a computer, such as Microsoft Word, and Internet (Thamel, personal communication, 2014). Because thin clients run an operating system locally and carry flash memory rather than a hard disk, they depend heavily on other computers or server to work. The reason for this is because all applications and data is stored on a central server (DevonIT, 2014). Some examples of Thin Clients could be the HP T620©, as seen in Figure 9.



Figure 9 – HP T620© (HP, 2014)

The solidification of endpoint devices into the business world has completely changed over the past decade the way that employees and executives access information and perform their job function. Desktop computers now have faster processing speed and more storage capacity for running data heavy programs and applications. Laptops are smaller and more mobile than desktops, but still provide enough processing speed for a majority of job functions. Tablets and smart phones have completely revolutionized mobile business, allowing employees and executives to sync information from their desktops, access this information from anywhere in the world and present it with a simple and efficient interface. These devices also allow for quick and easy collaboration on projects much faster than originally possible on laptops and desktops (Kondolojy, 2013). The importance of all these different endpoint devices, despite the different functionalities offered, is that they aim for a seamless connectivity. As described by Cisco in their Bring Your Own Device (BYOD) 2013 report, they state that an increased connectivity through endpoint devices gives employees increased flexibility and productivity in the workplace (Cisco, 2013). Endpoint devices play a big role in today's world and have made an impact in people's work due to the different functions and features offered.

2.3.1 Endpoint devices in disability care organizations

Endpoint devices not only have been playing a major role in the workforce worldwide, but also in disability care organizations. One major way that disability care organizations utilize endpoint devices to improve client care systems is through use of resources like Customer Relationship Management Systems (CRMS).

Customer Relationship Management Systems (CRMs)

There has been a recent increase in the use of Mobile CRMs by Australian disability care organizations (Community data solutions, 2014). Mobile CRM's are endpoint device applications that allow employees to access client data, company records, rostering and more on their endpoint devices. The ideal CRM allows for an employee to have the same connectivity to the organization's network when out of the office as when they are in the office (Tendigit, 2011). CRM's can also easily define security and access preferences to ensure different levels of access to all employees and executives in an organization.

CRM's have become even more essential to Australian disability service organizations with the introduction of the National Disability Insurance Scheme. Disability service organizations are facing a new range of challenges, including a change in the client payment system. The new model that the NDIS is establishing requires disability service providers to "have an accurate record of service date, service type, and care plan information to track outcomes" (Community data solutions, 2014). According to Greg Were, Director at Community Data Solutions, "this is a great opportunity for organizations to develop sophisticated data management systems to improve their whole agency-wide data management." It will be essential for organizations to both comply with the new regulations, and utilize the increasingly advanced technology that is becoming available in the field (Community data solutions, 2014).

CRM's can provide many other benefits to disability care organizations than just financial assistance. With a majority of their staff located outside of central or regional offices, mobile CRM's allow disability care employees to be connected and access information. They allow for a truly mobile

and informed workforce, which translates to better client support and care (Community data solutions, 2014).

There are a number of different types of mobile CRM's on the market. Each offers different features or tools to appeal to organizations. Major corporations will use powerful CRM's such as Microsoft Dynamics or MobileAccess that allow them to maintain and analyze detailed client and employee data. Most disability care organizations, however, use CRM's such as Spectrum Care or Carelink+, which have easier user interfaces and provide easy access to both clients and employees (Spectrum Care CRM, 2014). CRM's also vary with their compatibility with different endpoint devices. Besides the CRM's made for desktop and laptop computers, certain CRM's work best on mobile devices with apple or android operating systems, which can dictate how an organization obtains and allocates its endpoint devices (Tendigit, 2011).

2.3.2 Endpoint devices meeting the needs of specific job functions

Endpoint devices are essential tools that employees use in their job function in the modern world. It is important, however, to ensure that the features of the devices that are given to employees compliment the employee's job function, and that the employee is using the device in the best way to improve their efficiency and quality of work (Keitt, 2011). Endpoint devices can be used for different reasons given their different features and functionalities. The 2012 ECAR report on use of technology indicated that some of these reasons can be for communicating purposes, social interactions, learning, and management (ECAR, 2012).

To effectively determine the best device for an employee, each job function needs to be evaluated. This analysis focuses on the employee's specific role within the organization and the tasks that they are required to complete, and the methods they use to complete them. This analysis becomes even more important when organizations are employing any sort of mobile workforce. "If businesses are to smartly plan for and provision a mobile workforce, they need to have a firm grasp of what the issues are related to these workers" (Keitt, 2011).

One way that companies organize this information is by creating or adjusting their endpoint device policies to reflect different device needs. Endpoint device policies in most organizations outline the processes and regulations for obtaining and using communication devices. In most policies, employees are separated into different categories for similar job functions. Each category is evaluated and an endpoint device package is designed to best facilitate their job function. To obtain a new device, employees must go through the application procedure, and if they are approved, then they receive a replacement or additional endpoint device to complete the endpoint device package for their job function (American University in Cairo, 2013).

When it comes to selecting endpoint devices that best suit the needs of disability clients, a much more individualistic approach must be taken. Each client has a different set of needs based on their own personal abilities, which makes it virtually impossible to establish a set structure for providing clients with devices. Despite these difficulties, the benefits of providing clients with more access to endpoint devices are well documented. Endpoint devices have the ability to download applications that could provide assistance for any number of different types of disabilities (Mobile ability, 2013). One example of these applications is talk to text. This application allows people with sight impairments to effectively communicate with people on other mobile devices. Other examples of apps that help people with

cognitive disabilities are predictive texting or interactive learning applications for reading and writing. All of these applications help people with cognitive disabilities, such as down-syndrome, learn how to communicate with the world around them (AHRQ, 2012).

Children also benefit greatly from the use of endpoint devices. Marc Prensky, an American writer and speaker on learning and education, stated that touch screen devices with built-in Wi-Fi gives kids the ability to access thousands of apps available in the “app store”. For example, children can use dictionary and thesaurus applications to expand their vocabulary, navigate through the world using Google Maps, create stories with Story Kit, and explore space with the NASA app (Scholastic.com, 2001).

Offering an endpoint device that meets the needs of a variety of people, whether they are employees, children, or clients within an organization is important. As stated before, the use of technological devices in organization’s help employees increase their work productivity (Cisco, 2013). Some of the benefits from using endpoint devices, as shown by the 2011 EDUCAUSE Quarterly report are the ability to using multiple data capture methods, such as photos and GPS, gathering and analysis of data, electronic management of information and reduced usage of paper files (EDUCAUSE, 2012). In this manner, deploying endpoint devices that meet the needs of each job function within an organization, especially in disability care, will help the employee improve his/her productivity. Additionally, endpoint devices could help employees when providing care to people with disabilities or children by facilitating interaction, accessing information, and supporting and managing resources, ultimately assisting to improve client care.

3 METHODOLOGY

This project is intended to assess the endpoint device technology used by employees and clients of E.W. Tipping Foundation, concluding with a set of recommendations that suits the specific functions of each job within the organization.

To achieve the goal, the following objectives were completed at E.W. Tipping:

1. Established an understanding of their organizational structure, operational and client care systems, and current endpoint device use. This understanding provided us with knowledge of all job functions at E.W. Tipping, the client resource management systems in place, and how the endpoint devices they use impact the work they do.
2. Discovered trends in the empirical data collected from employee interviews. This allowed us to categorize job functions into groups based on endpoint device needs and job similarity. This also allowed us to identify areas for improvement and receive employee input on what devices would help them best do their job.

With the completion of these research objectives we achieved three deliverables.

1. Endpoint device recommendations that outline the technological needs of all job functions in the organization.
2. A framework for future endpoint device refreshment and specialized requests
3. A budget for endpoint device deployment

These objectives were accomplished by executing data gathering techniques such as interviews and a focus group. Employees with different job functions will be used as subjects to gain empirical data. This project was specifically intended for the E.W. Tipping Foundation, its employees and clients. The E.W. Tipping Foundation currently has 10 regional branches and 70 assisted care houses throughout the state of Victoria. This project was based in Carnegie, the E.W. Tipping headquarters. Although the methods outlined are specific to one organization, the steps outlined could be applied at other disability care providers that use endpoint devices for their client support services.

The following sections describe the methods we adopted to achieve each of the objectives.

To establish an understanding for their organizational structure, operational and client care systems, and current endpoint device use, we had to perform literature reviews, interviews, and regional branches visits. The literature reviews allowed us to understand the organization prior to the endpoint device assessment. The interviews allowed us to learn about each employee's job function and endpoint device use. The regional branch visits allowed us to understand the services provided and the needs of the organization as the culture varied from office to office.

3.1 LITERATURE REVIEWS

Before we assessed the infrastructure or endpoint device technology at E.W. Tipping, we established a base of information about E.W. Tipping from which to perform our project. We conducted literature reviews on the E.W. Tipping Foundations policies and procedures, annual report 2013, Strategic Plan 2013-2016, and organizational and hierarchical chart to learn more about the Foundation, and the services it provides.

The policies and procedures contain the guidelines an employee must follow when providing care to a client; because of the nature of the study it is important to follow the guidelines set in place by the organization. The annual report contains pertinent information about disability and children in Australia, and the organization's services and performance throughout the year. The Strategic Plan 2013-2016 explains where the organization currently stands, its goals for the future, and what it will do in order to address its current problems. Both of these documents, the E.W. Tipping's Annual Report 2013 and the Strategic Plan 2013-2016, allowed us to understand more about the disability and social services in Australia and how the organization fits in it and what it is doing to improve its quality of service, respectively. Lastly, the organizational and hierarchical chart of the organization taught us about E.W. Tipping's structure and how it operates.

The purpose of the literature review was to familiarize ourselves with the organization and the information gathered was used to write about where the Foundation stands and where it wants to go, its services, and how it fits in the disability and social care system in Australia. The information gathered through literature reviews helped us when performing interviews as we already had a basic understanding of the organization.

After performing the interviews and understanding of each employee's needs and job functions, a literature review on endpoint devices was made. All these endpoint devices help employees improve productivity in the workspace and each endpoint device is designed with different specifications, features and functionalities. To identify what devices meet the needs of particular roles we made literature reviews and online comparisons from PCMag.com, PCWorld.com, Gizmag.com, Gizmodo.com, TechGuide.com, and TechCrunch.com. This allowed us to compare smartphones, tablets, laptops and desktop computers, and identify which device could help best certain job functions.

3.2 EMPLOYEE INTERVIEWS

Based on our initial meeting with our point of contact, James Digby, we identified a list of 6 executives and 10 influential employees, 4 regional branches, and a stakeholder to interview and visit. The names of the executives, managers, regional managers and coordinators that we interviewed can be found below in Table 9. These interviews and visits were performed to achieve two major objectives.

The first was to understand the infrastructure and care systems of EWTF as an organization, and the second was to understand how endpoint devices were being utilized.

Table 9 – List of interviewed people

Person	Job Title
Graeme Kelly	CEO
James Digby	CFO
Catherine Cairns	Executive Officer – Services Business & Strategy Manager
Dean Westaway	ICT Regional Manager
Nalin Thamel	ICT Helpdesk Manager
Jantine Eddelbuttel	Human Resources manager
Jane Emery	Manager Community Relations
Danielle Ramsey	Marketing and Public Relations Manager
Matthew O’Shannessy	Marketing and Public Relations Manager
Vivian Potiris	Carelink+ Manager
Daniel Maxwell	System Administrator
Melissa Webster	COSI Manager
Matthew Casey	Organizational Health and Services Manager
Sharon Strutt	Financial Controller
Vikki Rogers	Payroll Manager
Keiran Credaro	Facilities & Services Manager

After the desired employees were identified, we were responsible for contacting them and establishing a date and location for the interview. We were given email aliases through E.W. Tipping Foundation, and we used these to set up and organize our meeting schedule to ensure that we got all of our interviews completed on time.

Our entire team was present for each employee interview. One member of the team was designated as the meeting moderator, and another was designated as the secretary, and recorded meeting minutes highlighting all information that was discussed. We also voice recorded a number of the interviews to establish a quote bank to reference in our project report. The interviews were conducted in a neutral conference room, or the employee’s own office.

Based on our initial research of the E.W.Tipping Foundation, discussions with our point of contact James Digby, and job descriptions of each position, we developed interview questions for each individual interview. These interview questions were developed as a structured guide, but often led to

more in depth discussion of different topics. A list of the interview questions to each employee position can be found from Appendix B to Appendix K, in the same order as shown in Table 9. The meeting moderator began each meeting with a brief synopsis of our project goal and objectives to ensure the employee knew what types of information we would be asking about. Following the description, we asked about the employee's job function. Then we asked about his/her use of CRMs and how he/she accesses client information. Lastly, we concluded the interview by discussing endpoint device technology at E.W. Tipping, as it is pertained to their job function. After the meeting, a detailed transcript of the meeting minutes was written and elaborated using the voice recording.

3.2.1 E.W. Tipping organizational infrastructure

The first part of each employee interview was focused on gaining information about the infrastructure and care systems at the E.W. Tipping Foundation. This began with obtaining specific information related to each employee's job function. Understanding the job function of the employee would help identify the areas of questioning that would be most effective, and helped to focus the interview as it progressed. For example, employees in the human resources department are able to explain how the NDIS and DHS apply to the organization, employees in the finance department are able to explain how the organization is run financially, and the ICT department can provide us with information regarding the organization's wireless infrastructure and inventory of devices.

Once we established the area of focus, we continued our line of question to learn about E.W. Tipping's infrastructure. One of the major areas within E.W. Tipping that we addressed in our interviews was how E.W. Tipping's client care management systems worked. Understanding their client care management system allowed us to understand how they access employee's and client's information, as well as do other tasks such as creating invoices, paying employees, etc. All this information contributes into developing recommendations for endpoint devices that meet the needs of different employee roles.

3.2.2 Endpoint devices at E.W. Tipping

The second part of each employee interview was focused on the features and problems with the current endpoint device technology at E.W. Tipping. This identified which endpoint devices were most commonly used by employees and highlighted the problems that the employees had with each type of device. All this information helped us identify what features and functionality the employees of E.W. Tipping needed, which helped us provide endpoint device recommendations. From a technological perspective, the goal of these interviews was to understand how endpoint devices are currently used in the organization, what functions are most important to each employee in their respective job function, and how the use of endpoint devices could improve the quality of service.

3.3 REGIONAL BRANCHES VISITS

We also organized visits to 3 of E.W. Tipping's regional branches to identify endpoint device problems outside of the headquarters. The Gippsland and Grampians branches were all located outside of Melbourne and we were responsible for organizing our own transportation to each of these branches. We used the train system and car-pooled with fellow employees to get to each branch. The third branch we visited was the Metropolitan regional branch, located at the E.W. Tipping headquarters where we worked.

Obtaining input outside of the financial office in Carnegie allowed us to obtain a better sample of data from people with similar roles to the people mentioned in Table 9. At each branch, we interviewed the regional service manager and as many service managers, service coordinators and team leaders as time permitted. These subsequent interviews were usually coordinated through communication with the regional service manager before the trip was made. The regional branches we visited and employees we interviewed can be seen below in Table 10.

Table 10 – People Interviewed from Regional Branches

Regional Branch represented	Employee Name	Job Title
Gippsland Regional Branch	Vivianne Everett	Service Coordinator
	Mitchell Brody	Service Manager – Child, Youth and Family
Grampians Regional Branch	Sean Duffy	Regional Manager
	Joel Turnbull	Program Development Manager
	Kelvin Meloury	Service Coordinator
	Jo Landwehr	Team Leader
North-West Regional Branch	Toby Laurence	Regional Manager
Metropolitan Regional Branch	Laurelle Edwards	Regional Manager

In the Metropolitan regional branch we had a large amount of employees to interview. To get more of a group opinion on endpoint device needs at E.W. Tipping, we conducted a focus group of the employees of the metropolitan regional branch in Carnegie, Victoria. In this focus group, the regional manager of the North-West branch also participated. Before the focus group began, each employee present conducted a brief questionnaire on their own so that we could understand each individual’s personal complaints and endpoint device needs. The brief questionnaire can be seen in Appendix N. Then we conducted the focus group, using the “Robert’s rules of order” meeting format. In this format, each member at the meeting stated their name before talking, so that it would be easier for the meeting secretary to take the meeting minutes.

The line of questioning in these interviews and focus group was different than the line of questioning of the executives and managers at the E.W. Tipping headquarters. These interviews focused less on the infrastructure of E.W. Tipping Foundation, and more on the problems that employees and caregivers are experiencing on the lower end of the Foundation hierarchy. We did prepare interview questions for each specific job type, but these interviews were far more informal, and the written questions became more of guidelines for constructive discussion. Having more information about endpoint devices in E.W. Tipping improved our understanding of the employee’s needs and how an endpoint device could satisfy such needs. This helped us when providing the recommendations, and validating our conclusions.

3.4 INTERVIEW WITH OTHER DISABILITY CARE ORGANIZATIONS

Our point of contact James Digby arranged for an interview with the CFO of DASSI, Peter Batsakis. DASSI is a community based disability care provider located in greater Melbourne. Our intention for interviewing with Peter was to learn about other methods that disability care organizations address endpoint device deployment and assessment. Our line of questioning addressed frameworks for endpoint device deployment, the merits of CRM's, intranet and electronic care systems, and the benefits of endpoint devices in mobile workforces. The interview transcript can be found in Appendix P.

3.5 CLIENT INTERVIEWS

The next step was to understand how clients operated within the different types of care systems at E.W. Tipping and how endpoint devices are used. We conducted an interview with John McKenna. According to our sponsor, he is a prominent board member of the disabled client community under E.W. Tipping care and was an excellent starting point when attempting to develop and understanding for the client side of the organization. For the interview transcript with John refer to Appendix O.

John McKenna is a board member at E.W. Tipping as well as a long time advocate for fair treatment of those with disabilities. He has a condition called arthrogyposis, and has used a wheel chair for most of his life. Mr. McKenna is a strong advocate for disability care services, and is heavily involved as a consultant for the National Disability Insurance Scheme (NDIS). He is very aware of the benefits of assistive technology in disability care services, such as endpoint devices.

3.6 ASSISTED LIVING HOUSES VISITS

To supplement our meetings with caregivers and clients, we arranged visit to all the different types of assisted living housing. Visiting these houses gave us the opportunity to assess the level of technology and connectivity that care givers and clients have access to while on site.

We also used this opportunity to speak with caregivers. These conversations were very informal, and focused on endpoint device access for employees and clients. We used voice recording to document these interviews, which ensured that an informal and comfortable atmosphere was maintained. From these interviews we were able to gain an understanding for how much access to endpoint devices exists in the houses, as well as, the client's and caregiver's access to these devices.

3.7 DISCOVERING TRENDS IN EMPIRICAL DATA

In order to analyze the empirical data collected, we performed research on best practices of developing a detailed analysis of large data sets. Because the data we received was qualitative, we needed the ability to treat every piece of data as its own entity. By breaking the information into smaller groups, it was easier to understand and identify trends in the information collected. In order to perform this analysis we used the conventional content analysis method.

Conventional content analysis is a commonly used to understand large qualitative data sets. This analysis is performed by organizing all of the information into individual statements and quotes, then identifying common themes or phrases within them. Using your initial understanding, categories are then developed, in which you place all of your information. When performing the analysis it is important

to avoid using preconceived categories (Kondracki & Wellman, 2002), instead allowing the categories and names for categories to flow from the data.

We recorded every statement made by employees and clients during our interviews. After the interview, organized all the statements and questions into a detailed interview transcript, which included all the information from that interview. Using these detailed transcripts, we imported all of the information into Microsoft Excel and labeled them by employee job function and work location. After reading through all of the statements, we developed a list of keywords and tagged each statement with a type and topic.

From this analysis we were able to identify the employee's endpoint device needs and recommendations that they believe best suit their job function. This method of content analysis also allowed us to sort through and separate the information in a multitude of ways depending on the keywords or job functions they were tagged under. This understanding was important for developing our own set of recommendation to provide to E.W. Tipping at the conclusion of the project because it helped us understand the needs of every group of employees.

For an example of the content analysis refer to Appendix Q.

3.8 LIMITATIONS WITH THE ENDPOINT DEVICE STUDY

Because we were conducting a study on endpoint devices, we encouraged employees to answer based on needs rather than on their own personal endpoint desires. To avoid providing false beliefs that the employee would obtain an endpoint device at the conclusion of the study, we notified the subject beforehand that there was no guarantee that a device would be implemented at the conclusion of the project. To facilitate this, we attempted to develop questions that focused on employee job function and how it relates to endpoint devices. For example, how they would use a device, what functions they need on a device, etc.

4 RESULTS: E.W. TIPPING’S ORGANIZATIONAL INFRASTRUCTURE

In this chapter we describe findings related to our project’s first objective, which is to establish an understanding of our sponsor’s organizational structure. We present a background of our sponsor, the E.W. Tipping Foundation, which includes the services it provides, a description of their plan moving forward, the Foundation’s organizational structure, and the systems and devices currently used. All these findings form the basis of our subsequent chapter which contains the analysis of the endpoint device assessment.

Through the literature reviews and interviews of employees highlighted in Table 9, we developed an understanding of EWTF’s services and their most recent Strategic Plan to improve their services as well as outlining employee job functions and Customer Relationship Management systems.

E.W. Tipping is a non-profit organization that was founded in honor of William “Bill” Tipping, a long-time journalist for the Melbourne Herald. Mr. Tipping was also a parent of a child with disabilities, and was passionate about equal rights for disabled people. He frequently wrote about social justice issues and the inclusion of disabled people in society. Soon after his passing in 1970, the E.W. Tipping Foundation was formed as a way to honor his legacy and continue his advocacy for the disabled community in Victoria (Tipping, 2014).

EWTF has grown to serve about 1,200 clients and employs roughly 1,200-1,400 people. Their work force consists of a mix of casual, part-time, and full-time employees. The E.W. Tipping Foundation is registered under the DHS as a disability and social care provider. The Foundation provides support to people with a disability, and children and families. They have locations all over the state of Victoria with a total of 10 regional branches and over 100 service locations. Each regional branch can be seen in the map of Victoria provided in Figure 10.

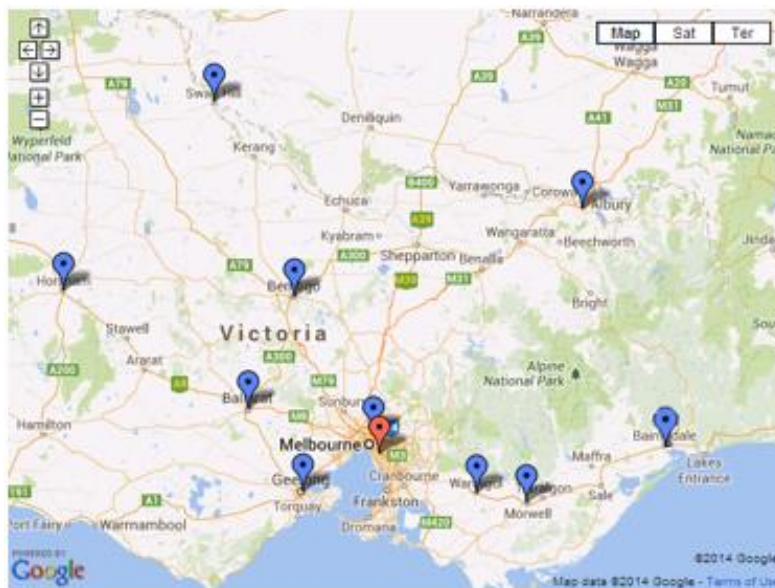


Figure 10 – EWTF Regional Branches Locations (Google Inc., 2014)

4.1 SERVICES PROVIDED

E.W. Tipping provides a wide range of care, including respite services, independent living programs, and community based one-on-one support, recreation and leisure activities, and high level support and programs for challenging and complex physical and behavioral needs (E.W. Tipping, 2014). Currently, the E.W. Tipping Foundation is composed of two separate business entities, E.W. Tipping Foundation and Vista Community Support.

4.1.1 E.W. Tipping Foundation

The overarching goal behind E.W. Tipping Foundation is to provide quality care to clients while still allowing them to choose how to live. In this manner, E.W. Tipping Foundation supports clients in achieving independence, greater choices and community involvement by offering respite and residential services (E.W. Tipping Foundation, 2014).

Respite Services

Respite services are designed to assist people with a disability and their families. They allow for a shared role as caregiver between the EWTF employee and the family members. The goal of respite services is to allow the client to individually seek support and be able to improve their own situation, whether this means physically or financially. There are two types of respite services (Wayne and White, 2013):

- In-home: This option allows the clients to stay in their own house and is provided by a volunteer or agency. The caregiver provides a wide range of support, ranging from daily chores such as bathing, dressing, feeding, and others to more specific tasks like meal preparation, shopping or housekeeping.
- Out-of-home: This option moves the client into a special house designed to provide the best quality of life. In these homes, special activities are planned to keep the client involved and access to medical and other services are readily available.

Residential Services

E.W. Tipping Foundation gives people with disabilities the option to choose the type of environment that they will stay and receive care in. The organization owns and rents over 60 houses across Victoria available to people with disabilities. These houses enable people to live independently while still receiving care and support from trained and experienced staff. E.W. Tipping Foundation offers several options, ranging from individual units to houses that can hold up to five residents. Each house is set up to meet the specific support needs of the resident, and encourage them to take responsibility of their own lives and achieve their own goals (E.W. Tipping Foundation, 2014).

4.1.2 Vista Community Support

Vista Community Support provides tailored assistance that adapts to each client's needs. As described by EWTF, quality support is about listening, understanding, and assisting people to achieve their goals (Vista Community Support, 2014). Vista provides support to people with disabilities, as well as children, youth and families and can be provided for "in home" or "in community" settings (E.W. Tipping, 2014).

Disability Support

Every person with a disability has different interests, needs and goals. Consequently, Vista Community Support designs specific programs for each client, in order to help them create and achieve their own personal goals. The organization provides specialized support for a wide range of conditions, such as physical disabilities, injuries, complex needs, etc. (Vista Community Support, 2014).

Children, Youth & Family

Not every child or young adult can live at home with his or her family. Additionally, not every family can provide basic support and care to their children. Vista Community Support provides out of home care (OOHC) services on a temporary or long-term basis. Children and young people are placed in the most suitable housing based on their needs. The DHS provides funding for this service only (Vista Community Support, 2014).

4.1.3 Consolidation of Entities

In an effort to further consolidate their business, EWTF is in the process of reassessing their current business model. They have been slowly integrating the separate business entities into one. Graeme Kelly, the CEO of EWTF said during an interview “It is expected that within the next 12 months there will be only brand, and that is the E.W. Tipping Foundation”.

4.2 EXPLANATION OF THE STRATEGIC PLAN 2013-2016

The Strategic Plan 2013-2016 is the comprehensive plan developed by the Executive board and the Board of Trustees at EWTF to address problems within the Foundation and set goals for the Foundation to achieve by the end of 2016. This plan was based off on the information obtained in informal meetings that EWTF’s CEO, Graeme Kelly, and Executive Officer of Services, Katherine Cairns, held with employees and clients in every regional branch throughout Victoria. This tour of the regions, formally named the “E.W. Tipping Road show,” was intended to obtain input and feedback from people related to the organization. Since the origin of the “Strategic Plan,” there have been two EWTF roadshows with a third scheduled for the fall of 2014.

The goal of the “roadshow” was to hear directly from the source what direction clients and employees wanted the Foundation to take moving forward, what the problems existed within the Foundation, and possible solutions or ideas for improvement. The mission of the Strategic Plan 2013-2016 is to “work together with people who have disabilities and children who are vulnerable and families.” By working with clients directly, they received feedback so the Foundation can respond effectively to meet the agreed goals of all their serviced groups. Over 1000 people attended these meetings and provided their recommendations.

As a result of the most recent roadshow, the Foundation identified three areas for improvement in regards to endpoint devices. These areas of improvement were problems that clients and employees mentioned consistently in meetings held throughout Victoria:

1. Better information and communication technologies, and resources for employees and clients
2. More training about the use of technology and client care
3. Better documentation, less paperwork and more electronic systems.

The “Strategic Plan 2013-2016” is divided into four strategic priorities, each of which addresses a different aspect of the Foundation. These strategic priorities as directly stated in the plan are services, people, relationships, and resources. During the interview with Graeme Kelly, we were able to understand the 4 priorities addressed in the Strategic Plan and how they relate to the newly identified areas of improvement to help guide our endpoint device assessment at EWTF. These sections are described below and their relation to endpoint devices.

4.2.1 Services

This priority identifies what the Foundation needs to do to improve the quality of its services. With this in mind, the Foundation has 3 goals and how they will achieve them using endpoint devices.

1. Demonstrate EWTF is capable of meeting the needs of clients and employees

They are addressing each goal by using client feedback and leadership. Using this feedback, EWTF will refine their services to better fit the needs and wants of the clients they provide service to. This will be done by asking each client exactly what their needs are, and how they can be fulfilled. A better fleet of endpoint devices at EWTF could help to facilitate better lines of communication between clients and employees, as well as improving documentation and management.

2. Improve the services offered to allow for growth

With the client now part of the improvement process, they plan to streamline their services which in turn will allow them to increase the number of clients their services can help. By using endpoint devices they will be able to foster communication between clients and employees and improve their services as a result.

3. Meet the needs of the stakeholders

Having good endpoint devices will help make EWTF pioneers in the disability field and will help the organization grow. A strategic advantage of growth for the future is having good public relations and public image, offering devices and using them to the organization’s advantage will help them meet the needs of the stakeholders.

4.2.2 People

This priority identifies what the Foundation needs to do to better serve clients and employees. With this in mind, the Foundation has 2 goals and how they will achieve them using endpoint devices.

1. Foster safety and health at the work place

Through the use of endpoint devices EWTF will allow employees to access training and safety tips without the need of being physically at the training location. Additionally, providing employees with devices that permit taking pictures and performing online assessments will help in sharing client’s information and it will be as a result cost-effective and promptly.

2. Improve the staff involvement

E.W. Tipping is working to recruit and develop staff that are driven to achieve organizational and individual success. By enhancing the moral of the workforce and providing updated technology, they will attract more devoted employees and set a positive vision and mission for the future of E.W. Tipping.

4.2.3 Relationships

This priority identifies what the Foundation needs to do to improve the Foundation's public image, and relationships with employees, clients, and stakeholders. With this in mind, the Foundation has 3 goals and how they will achieve them using endpoint devices.

1. Support independence and decision making

One of the main service goals of E.W. Tipping is to support a person with disability's independence. With the use of endpoint devices EWTF can foster decision making. As for example, if the organization has different plans, the client can choose the one that benefits him the most with the use of a device, as well as obtaining feedback through the use of online surveys and more.

2. Improve EWTF public image and awareness in the community

Through the use of endpoint devices EWTF can improve their reach in the community and create a greater community awareness. Sharing stories, videos, and using social media is a way to show decisions made for the betterment of the larger community, which will positively impact E.W. Tipping.

3. Reach stakeholders outside of the organization, i.e. funders, entities, organizations, etc.

By partnering with the clients, stakeholders, organizations and institutions in the local community, E.W. Tipping will further develop their reputation as outstanding care giver to people with disabilities. This will lead to increased support from stakeholders. The use of devices in a more effective manner could help improve the communication between the organization and stakeholders.

4.2.4 Resources

This priority identifies what the Foundation needs to do to improve the use of devices and systems in the workplace. With this in mind, the Foundation has 2 goals and how they will achieve them using endpoint devices.

1. Improve the services and organizational structure by having a good use of resources

E.W. Tipping intends to increase its financial sustainability by making better use of its current resources, and also, expand their resources by identifying new areas for growth and opportunity. This goal is meant to be forward thinking and will benefit E.W. Tipping more in the future than today.

2. Demonstrate the organization uses resources in a sustainable and ethical manner

With the use of devices, EWTF can address the third identified problem of poor documentation systems. Using endpoint devices will also aid in the transition to an electronic system, which would reduce the amount of paperwork and greatly improve the current documentation system.

EWTF intends to improve their services by having different devices that meet the needs of each client and employee. The Foundation's goal to improve relationships through continually improving communication and improving the capabilities of their workforce is one that directly connects to our project and how we plan to help E.W. Tipping. As Graeme Kelly said during our interview, EWTF will foster relationships, by continually improving communications, and will improve their resources by having a better and more efficient use of the endpoint devices in the organization. (Graeme Kelly, personal communication, 2014). The Foundation, in order to show its commitment to clients, implemented a 3-year technological refresh cycle. They currently use a "mix of technology", which is represented by a series of different laptops, tablets, smartphones, and other devices. We performed an endpoint device assessment at EWTF with the intent to identify the critical endpoint technology areas they needed to address, and providing endpoint device recommendations to help them achieve each of their goals stated in the Strategic Plan.

With the strategic plan in mind, before performing the assessment, we then proceeded to understanding each person's job function to provide recommendations that meet the technological needs of each role.

4.3 EWTF'S ORGANIZATIONAL STRUCTURE

From our literature review of organization documents and conducting interviews we were able to identify all of the various roles at E.W. Tipping and how they contribute to the overall success of the organization. The nearly 1400 employees spanning across Victoria provide various forms of service to their clients and organization as a whole. Table 11 lists the departments within EWTF, the overall role of each department and the employees each department is comprised of. For more details on each of the job functions listed below, please reference Appendix A.

Table 11 – EWTF Organizational Structure

Department	Description	Key Employees
Executives	Executives manage each of the major departments in the organizations. The major departments within the organizations include Financial, Human Resources, Community Relations and Services. Each executive is responsible for the managerial positions beneath them, as well as the staff overseen by these lower tiered managers. With the help of these staff, they all work together to fulfill the goals and objectives outlined in the strategic plan.	<ul style="list-style-type: none"> • Chief Executive Officer • Chief Financial Officer • Human Resources Manager • Community Relations Manager • Chief Service Officer
Finance	The finance department is in charge of the finances, facilities, and information technology. As a whole, the financial department are in charge of all assets within EWTF, which include but are limited to, residential and commercial properties, vehicles, and computer software and endpoint devices. They report directly to the Chief Financial Officer who is member of the executive board.	<ul style="list-style-type: none"> • ICT Manager • ICT Staff • Carelink+ Manager • Carelink+ System Administrator • Financial Controller • Regional Accountants • Financial System Administrator • Facilities & Services Manager
Human Resources	The Human Resource Department oversees payroll, human resources, learning and development, the occupation health & safety of the organization and their underlying systems. This team is responsible for ensuring the wellbeing of E.W. Tipping employees is up kept and report directly to the Human Resource Manager.	<ul style="list-style-type: none"> • Payroll Manger • Payroll Staff • Payroll System Administrator • OHS Manager • OHS Staff • Learning & Development Coordinator
Community Relations	The Community Relations Department is responsible for adequately relaying information to EWTF employees, clients and stakeholders. Employees in this department are in charge of all organization branding, publications, editorials and newsletters. They report directly to the Community Relations Manager	<ul style="list-style-type: none"> • Community Relations & Fundraising Officer • Communications Officer • Web & Social Media Officer
Services	The Services Department ensures that clients receive care that meets all government regulations, as well as, develop and implement new ways to improve the services provided to clients. This department is also directly connected to regional offices through the oversight of its staff. The services department reports directly to the Chief Services Officer.	<ul style="list-style-type: none"> • Regional Manger • COSI Manager • Practice Leader
Regional Staff	The regional staff are responsible for both E.W. Tipping and Vista services provided to clients. Direct support workers are employees who directly provide services to clients throughout the regions. They are responsible for organizing themselves such that a high quality of service is upheld. They report directly to team leaders, who pass all pertinent information to the Regional Manager.	<ul style="list-style-type: none"> • Service Manager • Service Coordinator • Team Leader • Direct Support Worker

Table 12 lists the number of employees in each department located at the central office in Carnegie.

Table 12 – Employees at Central Office

Central Office	
Department	Number of Employees
Executive	6
Financial	19
Human Resources	12
Services	3
Community Relations	4
Total	44

Table 13 lists employee types at each of the regional service branches. The number of employees varies greatly throughout the branches, with a majority of the employees working in the Metropolitan, Gippsland, and Grampians regions. This understanding for where employees are geographically located provided an understanding for common travel distances experienced by employees.

Table 13 – Employees at Regional Branches

	Regional Services Branches						
	Grampians	Gippsland	Barwon	Loddon-Mallee	Metropolitan	Riverina	Total
Regional Manager	1	1	1	1	1	1	6
Service Manager	2	3	0	2	2	0	9
Service Coordinator	5	6	2	1	9	1	24
Administrative Assistant	1	1	1	1	0	1	5
Team Leader	13	19	0	6	13	1	52
Caregivers	169	247	0	78	169	13	676
Other	4	1	0	0	0	0	5
Total	195	278	4	89	194	17	777

4.4 ENDPOINT DEVICE SYSTEMS USED AT E.W. TIPPING

The employees at the organization use endpoint devices for accessing the different systems in place at the Foundation. This section will outline the computer-based client care systems E.W. Tipping employees' use to maintain employee and client information.

4.4.1 Citrix

E.W. Tipping is currently using a web-based client as a platform for all of their other computer-based systems. Citrix is the equivalent of a virtual portal network and allows for employees to access shared files and applications found at E.W. Tipping without being connected directly to their network. These files and applications can be accessed through the Internet. All that is needed to access this information is an Internet connection and EWTF provided credentials. A benefit to this system is that it allows employees to have access to all of their work files and systems remotely and remove the need for high computing on your device, because all computing is performed on the Internet. One drawback to this system is that without an Internet connection, you are unable to access the information you need.

All subsequent systems are accessed through the Citrix portal, which is located on the E.W. Tipping staff login website.

4.4.2 Carelink+

Carelink+ is a customer relationship management system that was initially implemented for its ability to roster the staff of E.W. Tipping and revamp their paper-based based system. Rostering is the process of compiling employee timesheets and ensuring that all hours of service are properly allocated. Although the system is currently being used for restoring purposes, Carelink+ has many more capabilities that allow for the organization to keep track of client's finances, their medical records and manage their independent service package. This system, also, has the capability for end users to submit requests, such as a work order at a residential property or health and safety concern. E.W. Tipping is aware of the ways they can expand the system and are looking to perform updates in the near future.

4.4.3 Chris 21

The name is an acronym used to describe the Comprehensive Human Resource Integrated Solution of the 21st century. This system has the flexibility to add modules on a variety of human resource tools such as: learning & development, performance management, time & attendance, employee self-service and recruiting. These tools are intended to improve and streamline the human resource capabilities of the employees using it. At E.W. Tipping, Chris 21 is used to roster, timesheet and pay employees. Using this information financial statements are created for employees. This system is used in collaboration with the Carelink+ system for performing their bi-weekly payroll process.

4.4.4 Daisy

Daisy is a system that is used as a database for paper-based forms at E.W. Tipping. This application has forms for client intake, payroll, and facilities-related services. The site also includes information about the organization and its operation structures. This includes, organizational charts, policies and standard procedures.

4.5 ENDPOINT DEVICES USED AT E.W. TIPPING

E.W. Tipping has different endpoint devices in place at the organization. By interviewing employees and visiting regional branches, we were able to identify what endpoint devices employees are using and how they are using these devices. Currently, EWTF has approximately 350 devices total. These devices include over 200 laptops, 100 smartphones, around 10 printers, and the remaining are thin clients. The current devices owned by the organization are given to part-time and full-time employees only, and are dealt based on availability. In general, the employees from the CEO down to the Regional Management Teams all have a laptop, smartphone and some even have tablets. Almost all smartphones and tablets are personal devices that currently are being used for work.

4.5.1 Laptops

Every full-time employee and most of the part-time employees receive laptops to perform their work at EWTF. The laptop provided is a Lenovo ThinkPad, as seen in Figure 11. The current laptops used in the organization range in age, some are 10 years old while others are up to a year old. Laptops are used by employees to access CRMs, Citrix, email, and to process word and excel spreadsheets.



Figure 11 – Lenovo ThinkPad X100 Series © (Notebookcheck.net, 2010)

4.5.2 Phones

EWTF provides two different sets of phones. The first is a Samsung C5220 flip phone, and the second phone is a Nokia 1661. Both, the Samsung 5220 and Nokia 1661 were introduced in 2009. The phones provided by the organization only include the basic features in a phone such as sending and receiving texts and calls. You can observe a picture of each phone in Figures 12 and 13, respectively.



Figure 12 – Samsung C5220 © (Personal photo, 2014)



Figure 13 – Nokia 1661© (Nokia.com, 2014)

4.5.3 Tablets

The EWTF currently has only provided tablets to executives and board members to electronically manage meeting agendas, papers and documents, and improve information security. Other than executives, some employees have bought their own tablets and use it for work purposes. Most employees that own a tablet reported to have an Apple iPad, and a Samsung tablet, as seen in Figures 14 and 15, respectively.



Figure 14 – Apple iPad ©



Figure 15 – Samsung Galaxy Tab ©

4.5.4 Wyse Terminals

There are currently three different versions of Wyse terminals in use. The first is the SX0 model, the second is the C90LEW model, and third is the D90DW model. The SX0 model, launched in 2006, has been in place for the last decade and is being slowly replaced as it stops working with the D90DW model, launched in 2013. The C90LEW model, launched in 2011, replaced some of the previous SX0 models. EWTF has a Wyse device for every house, and out of 70 the majority of the Wyse devices in use are SX0 models. The C90LEW version is an updated, faster, and better model of the Wyse SX0 device, while the D90DW is a high performance thin client that is better than both Wyse devices. Despite all the internal changes and upgrades such as the memory RAM, flash and others, a feature worth noting between these three models is that the D90DW allows a faster internet speed download and upload of 1Mbps in comparison to the 512kbps provided by the SX0. The D90DW models have a market price of

\$530 AUD. In Figure 16, you can observe a Wyse model SX0, in Figure 20, you can observe the C90LEW model, and in Figure 18, the D90DW model.



Figure 16 – Wyse model SX0 ©



Figure 17 – Wyse model C90LEW ©



Figure 18 – Wyse model D90DW ©

Wyse terminals have been used in the organization for the past decade, and most of the devices that were bought 10 years ago are still in use. Wyse products were bought because of the nature of the organization. Since the two main clients are people with disabilities and children, EWTF had to provide an alternative to computers that would allow them to monitor the device usage and save client's information in a central system. For example, if a direct support worker came home with a client from the doctor's office and had a prescription, the Wyse system allowed employee had to upload this prescription to the system for other support workers to see. The Wyse system allows ICT to remotely troubleshoot any problems staff and clients have. In this manner with the use of Wyse terminals, EWTF can control the navigation and usage of the computer. In Figure 22, you can observe the typical setup provided at residential houses of E.W. Tipping. These houses, as explained before, are used to provide residential services to clients with disabilities or children. The setup consists of six devices.

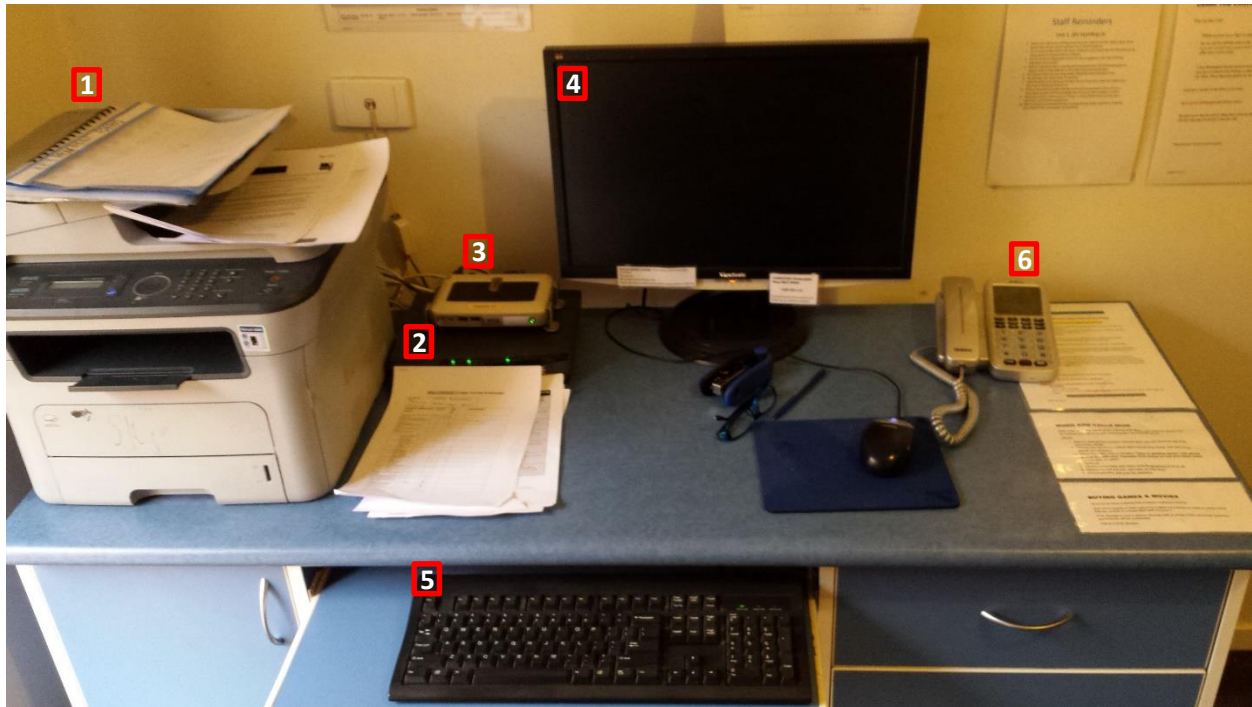


Figure 19 – Typical endpoint device setup at residential houses

- 1) Multi-station machine: provides printing, scanning, and faxing options
- 2) Internet router: connected to an internet line provided by a carrier, and in return allows the user to have access to the internet.
- 3) Wyse Terminal: as explained, it connects through the internet and provides a “computer” to the user
- 4) Monitor: outputs image and the virtual PC
- 5) Phone: Allows the staff to communicate with regional branches and offices, and houses.
- 6) Keyboard: is connected to the Wyse terminal and allows to input characters into the “computer”.

EWTF provides services to people with disabilities and children in need. As explained in the Strategic Plan 2013-2016, through means of endpoint devices, EWTF is looking to improve the quality of service they provide to clients. As explained, currently there are around 350 devices in the Foundation used to access systems such as Citrix and Carelink+. EWTF provides devices to employees without knowing the different requirements each job function in the organization has. The Foundation desires to obtain a better understanding of what devices can be used by different employees and understand where the organization stands in terms of endpoint technology. Consequently, the endpoint device assessment is explained in the next chapter.

5 RESULTS: ENDPOINT DEVICE ASSESSMENT AT E.W. TIPPING

This chapter outlines the results and analysis surrounding the endpoint device assessment at E.W. Tipping. This chapter includes the different technological needs employees have and how we categorized them to provide our recommendations. We also explain how the current devices at the organization are not satisfying the employees' needs. Following the endpoint device analysis, we identified some areas of improvement for EWTF. Lastly, we explain the results obtained in the market research we conducted on endpoint devices.

5.1 FINDING #1: DIFFERENT EMPLOYEES HAVE DIFFERENT TECHNOLOGICAL REQUIREMENTS

We had to analyze each employee's needs and what their job title exactly entails to provide recommendations that suits each employee's role in the Foundation.

A large number of employees at EWTF do a lot of traveling to different houses and regional branches. A certain number of these employees travel to perform health and service assessments, as well as client satisfaction analysis. These employees are in the OHS, COSI, and facilities department. A common trait between these three departments is the need to take pictures, and the need for a light, portable, easy to use, and flexible device. As an OHS employee said "it would be productive to have a device that allows me to take pictures and write notes at the same time" (OHS employee, personal communication, 2014). For each of these employees, a device that could help them record assessments at houses in an organized manner and keep track of certain extraordinary situations by writing notes would be extremely beneficial.

Specifically relating to travel time, employees of all levels spend a lot of time travelling throughout Victoria to attend meetings, provide services, and visit other branches. These meetings vary from personnel meetings to training sessions at regional branches and visits to care houses. Sean Duffy, regional manager at Grampians, said that on occasions he spends up to 8 hours driving without access to Internet or his phone. The varying access to Internet or Bluetooth technology in E.W. Tipping vehicles greatly limits the effectiveness of employees during their travel time. Vivianne Everett, Service Coordinator at Gippsland, suggested that the use of handheld free devices or vehicles with integrated Bluetooth to connect your phone would increase the work productivity during this travel time. Vivianne also said during an interview that "a Wi-Fi hotspot would allow me to check my email anywhere and access Carelink+ if an emergency occurs". EWTF currently has a set of Wi-Fi USB dongles for use by employees, but these Wi-Fi devices do not act as hotspots and only work when inserted in a USB port with the computer that the device is plugged into.

Moreover, a team leader stated "certain features, such as downloading attachments, taking pictures, and writing notes, would be a 'nice to have' rather than a 'must have' (team leader, personal communication, 2014). For a direct support worker, a device that allows such features would allow them to take pictures of certain client situations (bruises, cuts, etc.) and send them to team leaders. Consequently, the team leader could download these attachments and better provide aid to the situation. Although it is not a need that must be fulfilled, it is a need that should be considered when providing recommendations of devices.

On the other hand, regional managers, and service managers and coordinators, need to be on call 24/7. These employees would benefit from a device that permits a continuous connection to the Internet, and that can access Carelink+ and Citrix constantly. If a device allows such features then the manager or coordinator could help a team leader or caregiver by accessing client's information and be able to respond in a timely manner.

From the information we have collected about the employees at EWTF, we have been able to organize employees into groups based on similarities in their job position, duties and geographic location. Table 14 provides a description of each group, a list of key employees within the group, and an estimate of employee travel time. The employee travel time percentage is the percentage of workdays per week that the employee spends traveling to different EWTF locations. This method of grouping employees into broad job functions served as a valuable tool for determining endpoint device needs and recommendations.

Table 14 – Employee Groups based on similarities

Group	Description	Travel	Key Employees
Executive	All Executives focus on the oversight of others and ensure the completion of goals within the organization.	0-20%	<ul style="list-style-type: none"> • Chief Executive Officer • Chief Financial Officer • Human Resources Manager • Community Relations Manager • Chief Service Officer
Office-based	All office-based employees usually spend their work week stationed at the headquarters in Carnegie, VIC. This time is spent using and managing various client resource management systems at EWTF.	0-20%	<ul style="list-style-type: none"> • Payroll Manger • Payroll Staff • Payroll System Administrator • Financial System Administrator • Financial Controller
Technology-based	All technology-based employees work on technological systems within the organization. They are usually at the headquarters in Carnegie but sometimes travel to assess problems throughout Victoria.	0-20%	<ul style="list-style-type: none"> • ICT Manager • ICT Staff • Carelink+ Manager • Carelink+ System Administrator
Design-based	Design-based employees spend their time design publications and documents for employees, clients, and stakeholders. This work sometimes requires travel.	0-20%	<ul style="list-style-type: none"> • Community Relations & Fundraising Officer • Communications Officer • Web & Social Media Officer
Assessment-based	Assessment-based employees audit the properties and services of EWTF to ensure a level of safety, quality and service is provided.	20-60%	<ul style="list-style-type: none"> • OHS Manager • OHS Staff • COSI Manager • Facilities & Services Manager
Outreach-based	Outreach-based employees travel throughout Victoria for meetings, trainings or to provide information to other employees.	20-60%	<ul style="list-style-type: none"> • Learning & Development Coordinator • Regional Manager • Regional Accountants
Region-based	Region-based employees are stationed at a regional office where they travel throughout their region to provide service to clients.	20-60%	<ul style="list-style-type: none"> • Service Manager • Service Coordinator • Team Leader
Support-based	Support-based employees are those who directly provide, or aid in, the care provided to clients. These roles are very dynamic and can vary in travel time and the type of clients served.	0-100%	<ul style="list-style-type: none"> • Practice Leader • Direct Support Worker

During the interviews employees indicated that they had unfulfilled needs. Certain employees had specific technological needs not met by the devices at the organization. While every employee uses devices for the main features, such as emails and texts, there are other features that could benefit a wide range of job functions. Every technological need that employees have in the organization can be seen below in Table 15. The table consists of rows, with important features mentioned during interviews, and columns, which contains the employee categories defined before.

Table 15 – Employee’s technological needs

Employee Groups Features needed	Executive	Office-based	Technology-based	Design-based	Assessment-based	Outreach-based	Region-based	Support-based
Portable	✓		✓	✓	✓	✓	✓	✓
Access to Cellular-data	✓	✓	✓	✓	✓	✓	✓	✓
Access to Wi-Fi	✓	✓	✓	✓	✓	✓	✓	✓
Access to Bluetooth			✓		✓	✓	✓	
Access to emails	✓	✓	✓	✓	✓	✓	✓	✓
Managing calls	✓	✓	✓	✓	✓	✓	✓	✓
Sending/receiving texts	✓	✓	✓	✓	✓	✓	✓	✓
Access to GPS	✓		✓		✓	✓	✓	✓
Download attachments	✓	✓	✓	✓	✓	✓	✓	✓
Taking pictures and videos			✓	✓	✓			✓
Browsing the internet	✓	✓	✓	✓	✓	✓	✓	✓
Accessing Citrix		✓	✓		✓	✓	✓	✓
Accessing Carelink+		✓	✓		✓	✓	✓	✓
Accessing Chris21		✓			✓			
Video conferencing	✓		✓	✓	✓	✓	✓	✓

5.2 FINDINGS REGARDING USE OF ENDPOINT DEVICES AT E.W. TIPPING

Using the information collected from interviews and indenfiying the trends found in our empirical data, we indenfied areas in which the endpoint devices currently used at E.W. Tipping were currently falling short, and exactly what features about them did not meet the necessary standard for their specific job function. Thus, this section will provide a description of ways mobile phones, laptops, tablets, and Wyse thin clients are not meeting the needs of employees, or proved to be useful for a limited number of specialized tasks and events.

Finding #2: EWTF’S phones does not meet the technological requirements of employees

After speaking to employees of all levels in the organization, we found that everyone uses their own personal device to help them perform better at work. Out of 40 employees interviewed, only 10% use the phone provided by EWTF for work purposes. As explained by employees, the reason for not using these devices is because they are out of date and restricts the use to texting and calling. Every employee identified access to email and Internet on an effective interface as “essential” features in a phone, and these features are not provided by these two phones. Additionally, the phones given have a physical keyboard and a small screen that makes the user interface not as a friendly as that of a smartphone. In Table 16, the features that EWTF’s phones provide can be observed in comparison to the features provided by the personally owned smartphones used by employees.

Table 16 – Comparison of EWTF’s phones vs. Employees’ own smartphones

Features	EWTF’s phone	Smartphone
Calls	✓	✓
Texts	✓	✓
Emails	✓*	✓
Photos/Videos	✓*	✓
Wi-Fi	✓*	✓
Bluetooth	✓	✓
Downloadable applications		✓

** EWTF’s phones provide these features but not as efficiently as today’s smartphones*

Finding #3: Current laptops are outdated, heavy, and clunky

The laptops at EWTF vary in age, and there is no standard operating system. The last device refresh at EWTF was 4 years ago. The current system in place is to “update laptops as they break, pending a structured review and replacement of assets, which our project is contributing to (Digby, Finance, 2014). Some of these laptops are 10 years old and out of date. One of the problems with the recent “replace as they break” system is that there has been no standard of operating system. Some laptops run Windows XP, which was launched in 2001, others run Windows Vista and Windows 7, from 2006 and 2009, respectively. Because there is no standard of operating system, an incompatibility occurs with formatting documents over different versions of Windows.

Additionally, because of the laptops being outdated, an employee cannot run several programs at the same time without the computer freezing. As one employee said in an interview, “the laptops at EWTF takes at least 10 minutes to do calculations in excel”. This is an example of one of the problems with the laptops being at least 10 years old. As identified by the employees at EWTF, it is important to update the laptops at the organization.

Finding #4: Tablets are useful but not every EWTF’s employee needs one

During interviews we asked employees how their tablet helps them at work. The majority of employees interviewed said to use a tablet for e-mails, performing assessment, taking pictures, and taking notes in meetings. The features in a tablet are no different than a modern smartphone except for the bigger screen. Many employees that use tablets claimed to improve their productivity at work. As explained by Vivianne Everett, service coordinator at Gippsland, a tablet allowed her to provide a fast response to caregivers and find information about a client quickly. She did not have to turn on the device and wait for it to respond, the access to the main screen was almost instant.

As identified, most employees use tablets for simple features that can also be found on smartphones. Additionally, the reason for employees wanting tablets is because of the laptops being outdated. Through the interviews, we found that the only true purpose that a tablet can be used for in the organization is to facilitate an assessment-based employee’s job. For example, Matthew Casey from the OHS department currently uses his own camera for taking pictures because EWTF’s camera is old and takes low quality pictures. As he explained, a tablet would let him to take pictures and write notes in an easy manner, in comparison to the current method used.

Also tablets are very practical and useful resources if the organization needs to interact with clients. Vivian Potiris, Carelink+ Manager, explained that a tablet is not as invasive as a laptop and more visually friendly for people with disabilities. A tablet, as explained by the employees, helps with supporting clients, because it is portable, light, and easy to use.

Finding #5: Wyse thin clients are not reliable and expensive

Wyse terminals at EWTF only have flash memory and no RAM memory. This means that whenever an employee is using this type of device, he or she relies completely on the servers at EWTF. Wyse devices only provide a bare minimum of connectivity with the E.W. Tipping’s infrastructure and require Internet access to operate. If the internet at the headquarter fails, then every employee that uses Wyse terminals cannot connect and use the “virtual computer.” Additionally, every employee cannot access Carelink+ or Citrix, which in result becomes a bigger issue.

New Wyse terminals alone cost over \$500 each. The last Wyse terminal purchased, the D90DW, was \$530AUS as stated by Nalin Thamel, ICT Regional Helpdesk. Additionally, the terminals do not include a monitor and keyboard which could easily add from \$50 to \$100+AUD to the cost of the package.

5.3 FINDINGS REGARDING AREAS FOR IMPROVEMENT AT E.W. TIPPING

During each interview we identified common problems with the current technology at EWTF. These are areas that EWTF could further look into to improve the efficiency and happiness of its workforce. These areas are connectivity, device framework and policy, device accountability, and travel time and efficiency. Although these areas are about hardware specifically, they are endpoint device related and could help maximize the use of the devices

Finding #6: Poor network connectivity throughout Victoria

A problem we encountered is the network connectivity in EWTF. As explained by Nalin Thamel, ICT regional helpdesk, in our interview the current network infrastructure used at EWTF is that of an ad-hoc wireless infrastructure, meaning it is not centralized and varies depending on the area. Most of the offices are connected using ADSL connections and they all are linked to the financial headquarters which contains all the servers. Most of the internet is and it is not focused on just one wireless provider, therefore the speed changes throughout each region.

One of the main problems with the connectivity at E.W. Tipping is that every office is linked to the financial headquarter, and if the internet fails in the Carnegie area, then every region gets disconnected and cannot access any pertinent information.

Every employee we came across noted as well that the connectivity to the EWTF networks and systems was very slow and this makes very difficult to do their jobs. Employees are frequently unable to access systems such as, Chris 21, Carelink+, and Citrix, which are necessary for them to complete their jobs. We have found that the instability and strength in the connectivity of their networks, both locally and regionally, are a major way to help improve the user experience with the systems used by EWTF employees.

Finding #7: Lack of device framework and policy at EWTF

In the process of gathering information, we found that there was no framework for implementing new endpoint technology. As Dean Westaway, ICT Regional Manager, explained, there hasn't been a process in the past to refresh the endpoint devices in the organizations. Mostly the process has been looking at what devices are available at the Foundation, and which of these devices can they continue to use. Additionally, the devices are upgraded on a need basis and replaced as they brake. Meaning that devices were only replaced when they were no longer operating. Sharon Strutt, the financial manager, explained during an interview the reason for not having a refresh cycle framework. There is no set budget for the upgrade of devices, this is because funding is a major issue, and the money is allocated on areas of importance. Until now, endpoint devices were never considered a need in the organization. Not having a framework and policy in place has left employees with very outdated devices, as for example laptops that are 6 years old.

After identifying this gap we performed a literature review on policies and procedures for endpoint devices. We focused on finding policies of similar organizations to EWTF that could be easily related and converted. The policies we found came from the American University in Cairo and The Government of Western Australia.

Finding #8: Device accountability and inventory

Until recently, E.W. Tipping has not kept track of the devices owned by the organization. The new system that they have implemented to keep track of devices is more for allocating finances and does not log all of the information about a specific device. The system that is currently being used is an annotated Microsoft Excel spreadsheet that is shared amongst financial and ICT departments. After a device is purchased, the ICT staff records the device's information in the excel spreadsheet manually, inputting the serial number, model, description, and other pertinent information. The device is registered in the spreadsheet and it is not tracked afterwards. Nalin Thamel stated during an interview that the organization could benefit greatly from a barcode and tracking system for managing devices. This would improve the accuracy of inventorying and help providing a timely response when giving IT support.

5.4 FINDING #9: ENDPOINT DEVICE LITERATURE REVIEW AND COMPARISON

After identifying the technological needs of each employee and finding what devices are used in the organizational we performed market research on endpoint devices. Because all endpoint devices are designed with different specifications, features and functionalities, we had to understand the different features and functionalities each device offers. The purpose behind the market research was to identify what devices were available in the market, as well as what device met the specific needs of employees. From the research and online comparisons reviewed from PCMag.com, Pcworld.com, gizmag.com, gizmodo.com, techguide.com, and techcrunch.com, a comparison table was put together to compare the different features and range of capabilities of each endpoint device type. To observe this comparison between smartphones, tablets, laptops and desktop computers, refer to Table 17.

Through the market research we learned that laptops are the most efficient device for work purposes given its specifications, such as a standard of 4GB of RAM minimum in comparison to smartphones and tablets that offer up to 3GB. We found that no job function in EWTF needs a desktop computer because this type of device is used mainly for high computing purposes such as mathematical modeling and analysis. We found that a tablet's price outweighs its functionality, because for the same price the organization can purchase a laptop. Similarly, we found that thin clients are too expensive for the features it provides in comparison to laptops. We found that any employee that requires a device for taking pictures, a smartphone provides high quality picture taking with up to 41MP.

The tablets and laptops resulted to be the cheapest option ranging from \$300 to \$1,200, and \$300 up to \$5,000+, respectively. Smartphones cost around \$500 to \$1000 plus cost of data plans. Thin clients ranged from \$200AUD to \$700+ AUD. Lastly, PC computers start around \$500 up to \$5,000+ for the CPU tower only. From this literature review, we have concluded that a laptop is the most feasible option in terms of processing speed, battery life, hard-drive capacity, and price.

Table 17 – Endpoint Device Features Comparison

	Laptops	Desktops	Smartphones	Tablets	Thin Clients
Cellular			✓	✓	
Wi-Fi	✓	✓	✓	✓	✓
Bluetooth	✓	✓	✓	✓	
GPS	✓ ¹	✓ ¹	✓	✓	
Size	28cm to 51cm	N/A ²	6.5cm to 17cm	17.8cm to 31cm	N/A ²
Weight	725g to 4kg	6.8kg to 22kg	100g to 200g.	200gs to 752g.	0.8kg to 2kg
Build	Plastic, aluminum, carbon fiber	N/A	Plastic and aluminum	Plastic and aluminum	Plastic
Storage	Adaptable memory 100+ GB	Adaptable memory 100+ GB	16, 32 and 64GB with expandable memory	16, 32 and 64GB with expandable memory	N/A
Battery Life	Up to 21 hours	Outlet powered	Up to 16 hours	Up to 16 hours	N/A
Camera	Rear: N/A Front: 1.2 to 3.5MP	Bought separate	Rear: 8MP to 41MP Front: 1.2MP to 2.1MP	Rear: 5MP to 8MP Front: 1.2MP to 3.5MP	N/A
Memory	Standard: 4GB to 16GB Expandable: 32GB	Standard: 4GB to 16GB Expandable: 32GB, 64GB, 128GB	1GB to 3GB	512MB to 3GB	2GB or 4GB ³
Price⁴	\$\$ - \$\$\$	\$\$\$	\$ - \$\$	\$\$ - \$\$\$	\$-\$

1) GPS for laptops and desktops does not come as a built-in application and the user might need to purchase one, download a free one, or browse the internet for an online GPS website.

2) Desktops don't come integrated with screens. The screen can vary in size but it needs to be bought separate from the CPU

3) Memory RAM for thin clients is available only in upgradeable and more expensive models. Flash memory is the standard memory for this type of device.

4) Based on the review made from each site mentioned above, the price description was set as follows:

\$ - represents the cheapest option out of the four devices

\$\$ - represents the medium priced endpoint devices

\$\$\$ - represents the most expensive endpoint devices

6 RECOMMENDATIONS

Based on our findings, we were able to develop a set of recommendations not only to suit the short-term needs of EWTF, but also provide a sustainable framework for the organization from a technological standpoint. In this chapter, recommendations surrounding primary and auxiliary devices, deployment schemes, infrastructure and general technological guidance will be presented. The recommendations presented in this chapter are grouped according to each specific device. The goal of these recommendations is to address problems in EWTF's current Information and Communication Technology, and to help EWTF provide better resources to employees, and care to clients.

6.1 RECOMMENDATIONS REGARDING PRIMARY ENDPOINT DEVICES

The following are our primary endpoint device recommendations for the E.W. Tipping Foundation. They address the allocation of all necessary endpoint devices for job functions at the E.W. Tipping Foundation.

Recommendation #1: Forward thinking endpoint device selection

In the past, E.W. Tipping has invested in endpoint devices of which a considerable number either didn't completely fulfill their needed functions or were not used at all due to lack of necessary features. We recommend that moving forward, E.W. Tipping purchase endpoint technology that will completely suit the needs of its employees and serve their intended function. These devices should be comparable to those commonly used by employees in their personal life, so that they won't go unused and supplemented by employees personally owned devices.

Recommendation #2: Use laptops as a standard device for all computing

Based on findings 3 and 9, we concluded that laptops are the most useful tool for E.W. Tipping moving forward. They are portable, and provide enough processing power and features for employees to complete their job functions. Consequently, we recommend that EWTF implement laptops as the standard device for all computing within the organization. This implementation will result in the following:

- 1) The laptops currently in use be replaced with new updated laptops.
- 2) The desktops currently being used be phased out periodically and replaced with laptops.
- 3) That every Wyse terminal be replaced with laptops.

The laptops that are currently being used by employees at the E.W. Tipping are outdated. These laptops can be up to 6 years old, and run on obsolete operating systems, such as Windows XP. The laptops used at EWTF is the Lenovo Edge series, therefore we have looked at the most updated version of this line of laptops. The Lenovo Edge 440, with a 4th generation Intel core i3 processor, Windows 8, 500GB of hard drive, and 4GB of RAM, is in the market for \$599 AUS. Similarly, there are other suitable laptops that could serve equally well the employees of EWTF, as for example the Dell Inspiron 15 available on the market for under \$600 AUS. These examples of laptops would allow the employee to run several tasks and programs simultaneously, offer enough space for the employee to save documents, and has the latest Windows operating system installed. These laptops are forward compatible with the systems that E.W. Tipping is looking to implement in the future.

In finding 9, we show that desktops are predominantly used for applications that require high processing power, which is beyond the needs of ETWF. There are no job functions at E.W. Tipping that require this level of performance, given that most employees' needs were to access email, Carelink+, and Citrix, and browse the internet. For these simplified tasks a Laptop with 4GB of RAM will suffice. Additionally, a laptop computer gives the employee the possibility to bring the laptop anywhere he/she goes. As for example, a regional manager that travels up to 8 hours a week could benefit from the use of a portable device. A laptop is portable and is powerful to meet the technological needs of EWTF employees.

To address the poor performance of the Wyse terminal system, laptops would be a suitable option. As described before, Wyse terminal cost approximately \$600AUD with a keyboard, mouse, and monitor. Laptops have much more features, and are available for almost the same amount of money up front. As shown, a Lenovo Edge 440 is only \$599AUD and with laptops EWTF can provide employees a device that can work without connection to the Internet and is far off more powerful than the Wyse devices.

Recommendation #3: Tablets for assessment-based job functions and specific tasks

As per our conclusions, we recommend that E.W. Tipping only invest in tablets for job functions that are Assessment-based. Assessment-based job functions include the OHS department, Client Outcomes and Systems Improvement (COSI) department and Facilities & Services, who need to perform onsite assessments at different locations. Despite this, tablets could be used effectively for specific events or tasks by any number of employees. With that being said, 1 tablet should be purchased for each Regional Office to aid in the client intake process. Tablets hold a very practical value when used to aid client intake systems. As described by Vivian Potiris, they provide the prospective clients with an Interactive and friendly interface that helps them see understand the process as it progresses. Tablets would also cut down on hard copy paper work and ensure that the desires of the client are entered directly onto Carelink+ via Citrix.

An Apple iPad© with 16GB and Wi-Fi only can be found for \$449 AUD, while the iPad with Wi-Fi and Cellular costs \$598 AUD. A Samsung Galaxy© Tab 3 of 20.3 centimeters is on the market for a price of \$238, and the 25.7 centimeters costs \$279 AUD. There are more Tablets that EWTF could also consider such as the Galaxy Note, the Google Nexus, Windows Surface, and more.

Recommendation #4: Provide a minimum standard of smartphone

It is necessary that EWTF invest in mobile phones comparable to those used by employees in their personal lives. From finding 4, we concluded that the quality of smartphone administered by EWTF is currently below the level of devices commonly used by employees in their personal life. Every employee we interviewed used his or her own personal smartphones in place of those provided by EWTF.

We recommend EWTF to set a standard smartphone in the organization, of which is operated by either Android or iOS. Android devices have the ability to access the Carelink+ Mobile app, which would help improve employee productivity in the future once Carelink+ is used to its fullest capacity. With that being said, we found that Carelink+ does not have plans to develop an iOS application given there is no demand, as their representative said. Although there is no Carelink+ Mobile app for iOS devices, there is a Citrix Mobile app. This app would allow employees to access to the full Citrix platform through via their smartphone, which could help employees when accessing information mobile. We do not recommend that Windows Phone devices be selected due to their inability to access any either Citrix or

Carelink+ apps. Also, the fact that they are still in their first generations means that the technology is still maturing and needs time to become a viable option. In the table below, possible devices are listed.

Table 18 – Possible smartphone considerations

Operating System	Possible devices	Available apps
Android	HTC One Samsung Galaxy S4 Samsung Galaxy S5	Carelink+ Mobile
iOS	Apple iPhone 5 Apple iPhone 5c Apple iPhone 5s	Citrix Mobile
Windows Phone	Nokia Lumia 625 Nokia Lumia 925 Nokia Lumia 1020	

6.2 RECOMMENDATIONS REGARDING USE OF AUXILIARY DEVICES

Outside of standard endpoint devices, we have identified a number of auxiliary technologies that will help better facilitate and improve the use of a new endpoint device fleet as well as greatly increase the efficiency of E.W. Tipping’s employees.

Recommendation #5: We recommend that E.W. Tipping invest in video conferencing technology for all of their regional branches and houses.

Video conferencing has the opportunity to greatly reduce the amount of travel time by employees who act as a liaison throughout the regions. Almost all modern laptops come with a built-in camera and do not require the purchase of additional hardware for use. With the implementation of new laptops throughout the organization all the tools necessary for video conferencing will be available.

For video conferencing software, we recommend that the organization invest in a free service, such as Skype to start, so that the system can be tested for a period of time. Based on the performance of this trial, a more sophisticated video conferencing services such as Microsoft Lync or WebEx, which are designed for businesses, should be implemented.

Recommendation #6: We recommend that E.W. Tipping purchase bags for laptops and cases for smartphones and tablets.

Protective casing and travel equipment will ensure that the endpoint devices that E.W. Tipping invests in are kept in good condition. These devices generally cost a lot of money to purchase but can be deemed useless after one drop. With longevity in mind, protective gear is a great precaution.

Recommendation #7: We recommend EWTF to consider ergonomics when implementing endpoint devices

In order to transform the mobile characteristics into a comfortable desktop workstation, we recommend that docking stations be implemented. These devices allow the user to connect monitors, keyboards, mice, and all other devices commonly used at a desktop workstation while using the laptop as its main computing station.

When considering an investment in new endpoint devices, it is important to take into account ergonomics. Ergonomics is the study of how humans interact with a system, and in this case, an endpoint device system. The purchasing of ergonomic keyboards, mice and docking stations would greatly lessen the wear on employees who spend large amounts of time at their computer. We recommend that these auxiliary devices be purchased at the same time as the purchase of each device.

6.3 RECOMMENDATION #8: ALLOCATE FUNDS FOR UPCOMING ENDPOINT DEVICE REFRESH

From the inventory provided by Nalin Thamel and Sharon Strutt we identified that EWTF owns around 350 devices. This inventory is comprised of approximately 200 laptops, 100 smartphones, 70 Wyse terminals and the remaining devices are printers and more. Moreover, with the Network Organizational Chart & Contact Directory provided to us by Jantine Eddelbuttel we identified which employees should get endpoint devices and what devices they should receive. As stated in chapter 4, there are approximately 1,400 employees at E.W. Tipping. Out of these 1,400 employees, around 100 are full-time, and the rest are part-time and casual employees.

From the interviews we identified that every employee, except caregivers and team leaders, receives a phone from EWTF. Therefore, E.W. Tipping should replace every phone they have with a smartphone. From the list of employees we have there are 93 eligible employees to receive a smartphone.

Likewise, we recommend EWTF to replace all the outdated laptops and Wyse terminals with up to date laptops. Through the Network Organizational Chart and Contact Directory list we identified 145 employees that currently use laptops, desktops or Wyse terminals, and 70 Wyse terminals in houses that need to be replaced. Consequently, EWTF should invest in a total of 215 laptops.

For Assessment-based job functions we recommend EWTF to purchase three tablets, one for each department to use. Also, as shown in Figure 10, there are ten total regional branches. We recommend EWTF to purchase one tablet per branch to use for client intake. This total of 13 tablets could also be used for rental purposes, so if someone needs a device there will be at least one in every branch for employees to use.

Based on the quantities mentioned above, and the research made about endpoint devices we were able to develop a table, as shown below, with an estimated cost for the total number of devices. Because the final number of smartphones and laptops were based on estimates, we took into account the standard factor of safety which ranges from 1.1 to 1.3. Hence, we multiplied the total number of devices, 93 for smartphones and 145 for laptops, with the factor of safety, in this case 1.2. Consequently, the total number of smartphones and laptops was equal to 103 and 160, respectively. To the quantity of laptops we then included the 70 Wyse terminals that need to be replaced. The estimated cost was obtained from the research on endpoint devices as explained in finding 9.

Table 19 – Total estimated cost for update of endpoint devices

Device	Description	Qty.	Est. Cost	Total
Laptops	Replace current old laptops	160	\$ 599.00	\$ 95,840.00
	Replace Wyse thin clients	70		\$ 41,930.00
Smartphones	Replace current old phones	103	\$ 1,000.00	\$ 103,000.00
Tablet	Tablets for OHS, COSI, and Facilities	3	\$ 500.00	\$ 1,500.00
	Tablet for client intake by branch	10		\$ 5,000.00
Total		362		\$ 247,270.00

6.4 RECOMMENDATION #9: DEVELOP A FRAMEWORK AND POLICY FOR FUTURE ENDPOINT DEVICE INVESTMENTS

One of the major gaps that we have identified within E.W. Tipping’s system is a lack of framework and policy that identify the rules and regulations regarding purchasing and distributing endpoint devices to employees. We recommend that E.W. Tipping establish this policy during its upcoming endpoint device refresh so that all future technology refreshes are governed by the same policy. This policy would streamline the process of future device evaluations and replacements and allow for EWTF to grow in size while maintaining the appropriate amount endpoint technology. An ideal policy would also allow employees to apply for a policy adjustment if they feel as though they are not being given all of the necessary endpoint device technology to effectively complete their job function. The policy adjustment form would be reviewed by EWTF and either approved or denied.

The writing of endpoint device policy is outside the capabilities of our project team, given our lack of education in this subject area. However, we found 2 templates that were written by the American University in Cairo and The Government of Western Australia to govern their technology purchasing and distribution. These organizations were focused on the allocation of mobile phones specifically, but the policy structure could be adapted to fit the needs of EWTF. These references can be found in the References chapter under The American University in Cairo and Government of Western Australia.

The basic structure of these policies is as follows:

1. The first section of the policy outlines the purpose of the document and defines the policy statement. The policy statement defines the goal of the document and summarizes all the sections into a brief statement
2. The second section states the devices that are approved to be deployed to each group of job functions as well as limitations on device deployment. This section should reflect the endpoint device recommendations that we have made in this project.
3. The third section states the guidelines and procedures for the procurement of endpoint devices. This section would also include a statement regarding the intended 3-year refresh system at EWTF.
4. The fourth section states the regulations for usage of EWTF provided endpoint devices. This section would include policy on endpoint device data usage, maintenance requirements, and inventory policy

5. The fifth section outlines any fees or remaining policy adjustments that EWTF sees fit, as well as any additional documents or applications that apply to the endpoint device policy. The policy adjustment application would be at the end of this section

6.5 RECOMMENDATIONS REGARDING FUTURE PROJECT POSSIBILITIES

After our interviews and meetings with E.W. Tipping employees as well as visits to regional branches and houses, we have identified three areas within the organization that need to be addressed to help E.W. Tipping progress as a disability care provider. These are all possible projects for WPI students to complete in the future.

6.5.1 Address E.W. Tipping's connectivity throughout Victoria

The goal of this project would be to address the poor network connectivity and infrastructure at EWTF. Our project focus was on endpoint device needs at E.W. Tipping. The nature of the project led to us also obtaining information on connectivity and network problems at E.W. Tipping. Despite this fact, we still believe there is a huge gap that can be addressed more fully by a connectivity focused project group. Addressing E.W. tipping's network problems is essential to achieving the most effectiveness from our projects endpoint recommendations. It is the next step in the process for EWTF to improve its technology assets.

6.5.2 Develop a campaign for pursuing information technology partnerships

Many of the technology recommendations we have made in our project are not within the realm of fiscal possibility for the E.W. Tipping foundation. Being a not-for-profit, EWTF relies on outside investors and government funding to run their organization. Despite this fact, many disability and health care organizations are developing partnerships with big technology corporations to subsidize devices costs and receive information technology help. Such partnerships are more likely to be successfully developed through a comprehensive campaign backed by thorough research. This campaign would include a stakeholder analysis, demand analysis, market analysis, and risk analysis which would ultimately result in a contract management and investment strategy (Strategic Sourcing, Government Services Group, 2011).

6.5.3 Promote client access to endpoint technology

Providing and promoting client access to endpoint devices has the potential to greatly affect EWTF's care systems. According to John McKenna, disability advocate and member of EWTF Board of Trustees, "Good care givers need to not only help the client shower, but be able to help them connect with the world using technology." This is clearly the direction that EWTF is looking to move in the future, but it is an issue that cannot be solved simply by giving tablets or smartphones to every client that pays for service. Currently, EWTF has no formal process of obtaining device preferences from clients, and the evaluation of these preferences alone would be a massive undertaking. Every client would require different physical features or applications, and some might not want a device at all. If E.W. Tipping is to provide its clients with their own personal endpoint devices, there needs to be a vast amount of research behind which devices are most useful or easy to use, as well as policy and regulations to guide the process. This gap would be best addressed in a comprehensive effort as part of the "Strategic Plan 2016-2019" which is currently in the developmental stage.

7 CONCLUSION

With E.W. Tipping's focus on the Strategic Plan 2013-16, we believe that the findings and recommendations in this report will bring them one step closer to achieving the goals outlined in their plan. From the recommendations provided above, an improvement in the operations of the organization will lead to a higher quality of service provided to clients and a better work environment for its employees. With the purpose of this Interactive Qualifying Project to support the E.W. Tipping Foundation's efforts to improve its endpoint technology, the concept of investing in infrastructure and devices is expected to set a precedent in the disability care sector of Australia. With optimism, this precedent will result in a cultural change for many service providers and cause more organizations to invest in endpoint technology, resulting in overall increase in the capacity to provided quality services to people with disabilities and protected children.

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APPENDIX A - EMPLOYEE JOB FUNCTIONS

From our literature review of organization documents and conducting interviews we were able to determine all of the various roles at E.W. Tipping and how they contribute to the overall success of the organization. We have broken the organization into their respective departments such that their individual job functions could be better understood and analyzed. Within these groups, employees work to support the systems specific to their sector of the business and provide a better future for the business as a whole.

Executives

The staff positions that we have identified as executives are positions that manage each of the major departments in the organizations. The major departments within the organization include Financial, Human Resources, Community Relations and Services. These individuals are all chief officers and managers who are in charge of maintaining the operations of the organization. Each executive is responsible for the managerial positions beneath them, as well as the staff overseen by these lower tiered managers. With the help of these staff, they all work together to fulfill the goals and objectives outlined in the strategic plan. In the figure and table below, organization structure and duties of the executives can be found.



Figure 20 – Executives Organizational Chart

Table 20 – Executives Roles Description

Position	Duties
Chief Executive Officer	<ul style="list-style-type: none"> • Oversees of all subsequent executives • Is responsible for creating the vision and longer term plan for the organization • Ensures that goals are met
Chief Financial Officer	<ul style="list-style-type: none"> • Overseer of the Financial Department • In charge of all budgets and financial projections • Acquires, maintains, and releases all assets • Works to ensure financial stability and sustainability
Human Resources Manager	<ul style="list-style-type: none"> • Overseer of the Human Resources Department • Is responsible for the workforce at EWTF • Manages those who acquire, train and pay • Ensures the safety of the employees
Community Relations Manager	<ul style="list-style-type: none"> • Overseer of the Community Relations Department • Is responsible the marketing and branding of EWTF • Ensures that clients and employees are in up-to-date on what is happening within the organization • Is responsible for handling public relations related crisis situations
Chief Service Officer	<ul style="list-style-type: none"> • Overseer of the Services Department • Ensures that clients are receiving the best care possible • Identifies areas in which client care can be improved • Acts as a Direct link to what is happening throughout Victoria, from a service perspective
Business & Strategy Manager	<ul style="list-style-type: none"> • Ensures the implementation of all organization strategic plans

Finance Department

The finance department is the group of employees who are in charge of the finances, facilities, information technology and Carelink+. As a whole, the financial department are in charge of all assets within EWTF, which include but are limited to, residential and commercial properties, vehicles, and computer software and endpoint devices. They report directly to the Chief Financial Officer who is member of the executive board. In the figure and table below, the organization structure and duties of the Financial Department can be found.

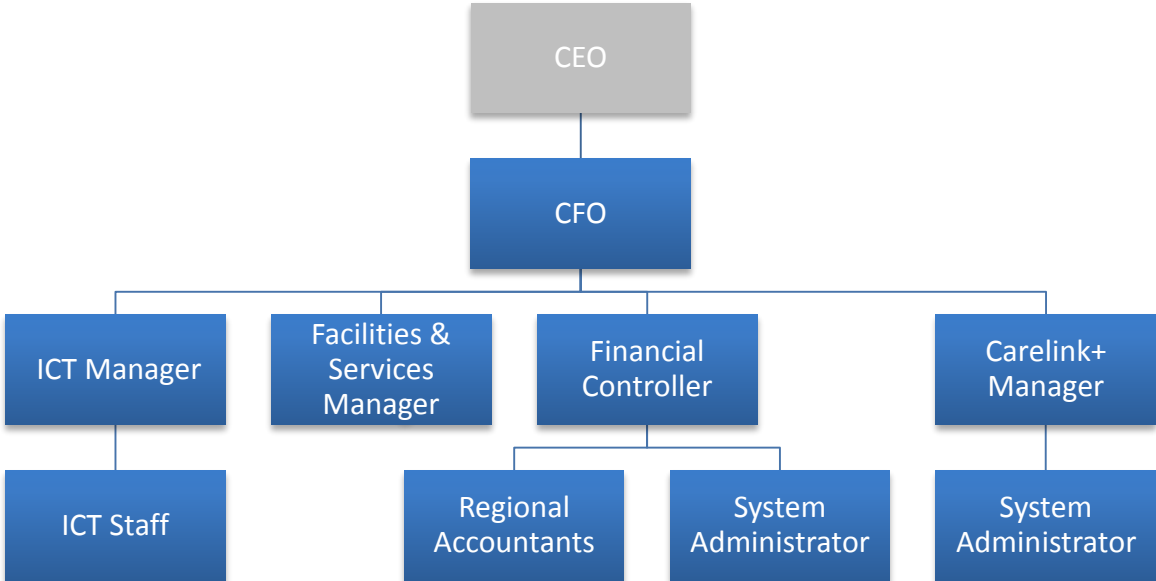


Figure 21 – Finance Department Organizational Chart

Table 21 – Finance Roles Description

Position	Duties
Information & Communication Technology Team (ICT Manager and Staff)	<ul style="list-style-type: none"> • Is responsible for diagnosing network issues and implementing new network infrastructure • Manage the Citrix platform and use this as a basis for the implementation of their network Infrastructure schemes • Help employees configure devices when they would like to add them to the Citrix and wireless networks to be used for work.
Carelink+ Team (Carelink+ Manager and System Administrator)	<ul style="list-style-type: none"> • Is responsible for the upkeep of the Carelink+ system • Identifying new ways to improve the system and maximize the use of its feature • System administrator is responsible for diagnosing technological problems and performing system updates
Finance Team (Financial Controller, Regional Accountants and System Administrator)	<ul style="list-style-type: none"> • Develops budgets and financial forecasts • Manages all regional accounts • Allocates all direct and indirect streams of revenue • System administrator is responsible for diagnosing technological problems and performing system updates
Facilities & Services Manager	<ul style="list-style-type: none"> • Is responsible for managing all EWTF owned properties and vehicles • Is responsible for the upkeep of all EWTF owned properties and vehicles • Responds to all repair work orders of EWTF properties • Manages all subcontracted employees filling repair work orders

Human Resources Department

The Human Resource Department is a team of employees that oversees payroll, human resources, learning and development, the occupation health & safety of the organization and all of their individual underlying systems. This team is responsible for ensuring the wellbeing of E.W. Tipping employees is up kept and report directly to the Human Resource Manager. In the figure and table below, the organization structure and duties of the Human Resources Department can be found.

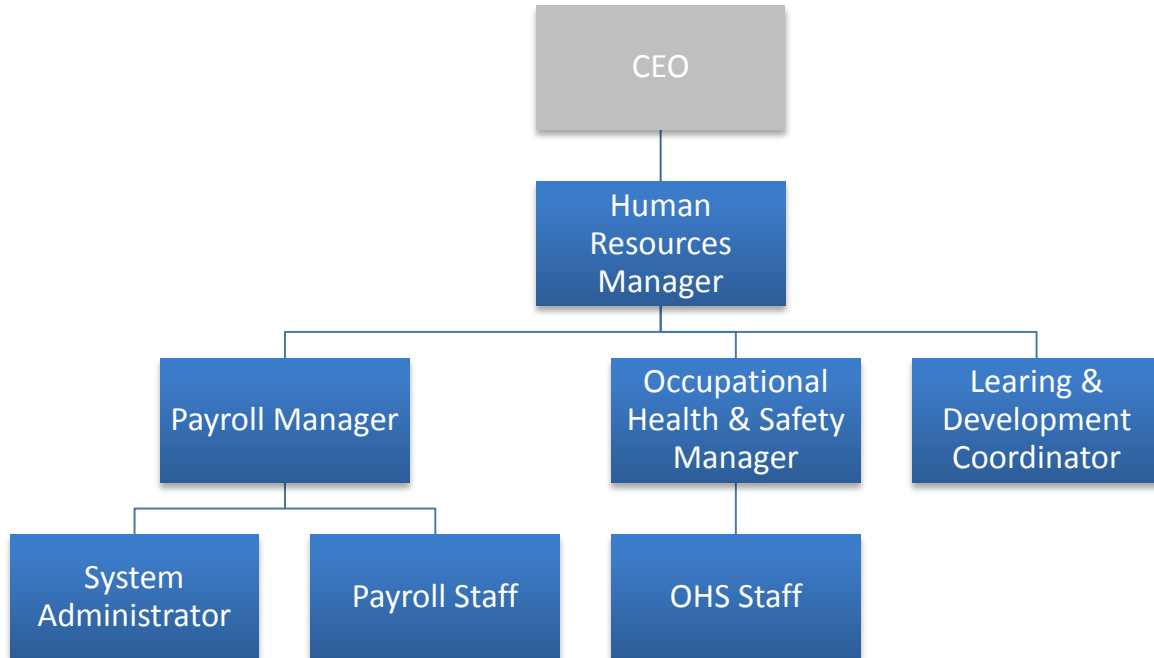


Figure 22 –HR Organizational Chart

Table 22 – HR Roles Description

Position	Duties
Payroll Manager and Team	<ul style="list-style-type: none"> Ensures all employee accounts are paid in a timely manner Ensures that all financial records are properly kept System administrator is responsible for diagnosing technological problems and performing system updates
Occupational Health & Safety Manager and Team	<ul style="list-style-type: none"> Is responsible for making employees aware of ergonomic, health and safety risks in the workplace Is responsible for diagnosing and minimizing the risks in the workplace Performs assessments of EWTF properties
Learning & Development Coordinator	<ul style="list-style-type: none"> Provides training to employees on the systems used at EWTF Travels regularly to do on-site trainings at regional offices

Community Relations Department

The Community Relations Department is responsible for adequately relaying information to EWTF employees, clients and stakeholders. As a whole, they are in charge of all organization branding, publications, editorials and newsletters. They report directly to the Community Relations Manager. In the figure and table below, the organization structure and duties of the Community Relations Department can be found.

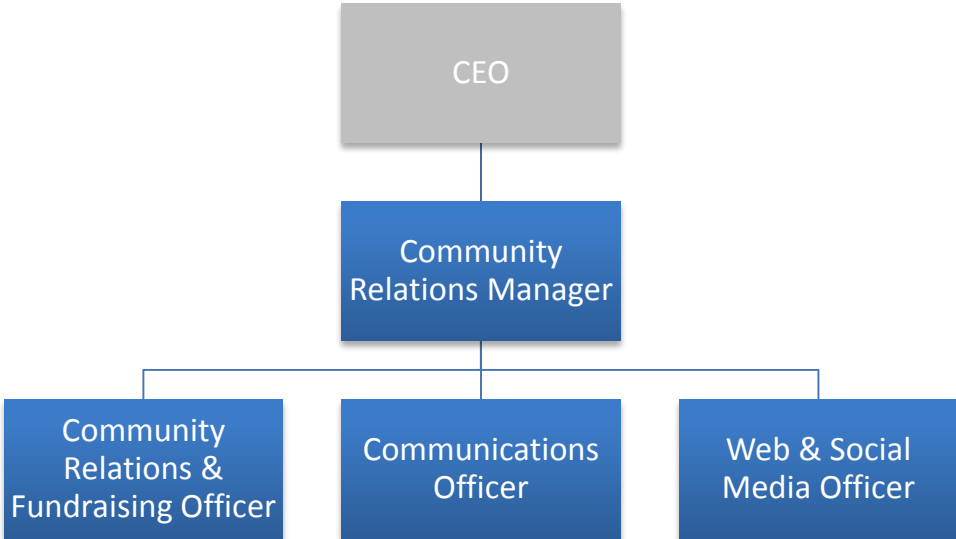


Figure 23 – Community Relations Organizational Chart

Table 23 – Community Relations Roles Description

Position	Duties
Community Relations & Fundraising Officer	<ul style="list-style-type: none"> • Manages all fundraising events
Communications Officer	<ul style="list-style-type: none"> • Creates articles for EWTF newsletters • Ensures that EWTF staff, clients and stakeholders are well informed • Creates statements for all EWTF crisis situations
Web & Social Media Officer	<ul style="list-style-type: none"> • Manages all social media accounts • Creates publications for social media sites

Services Department

It is the goal of the Services Department to ensure that clients receive care that meets all government regulations, as well as, develop and implement new ways to improve the services provided to client. This department not only manages staff located at the headquarters, but is also directly connected to regional offices through the oversight of its staff. This department reports directly to the Chief Services Officer. . In the figure and table below, the organization structure and duties of the Services Department can be found.



Figure 24 – Services Department Organizational Chart

Table 24 – Services Department Roles Description

Position	Duties
Regional Manger	<ul style="list-style-type: none"> • Liaison between headquarters staff and regional operations • Manages the operations of regional offices • Focuses on maintaining Human resources and finances
Client Outcomes & System Improvement Manager (COSI)	<ul style="list-style-type: none"> • Ensures that a certain level of quality is maintained in the services they provide • Works closely with Practice Leaders and employees of the Occupational Health & Safety group
Practice Leader	<ul style="list-style-type: none"> • Is a trained expert in some clinical practices • Helps train caregivers • Helps solve complex problems when serving challenging clients

Regional Staff

In figure 9 above, you can see that regional offices are placed in 9 locations throughout Victoria. These offices act as a hub for employees who facilitate or directly provide services in an area local to that office. Within these offices, the Regional Manager is responsible for both E.W. Tipping and Vista services provided to clients, which leaves them in charge of two sets of each job function. Although the job functions are identical, they are separated to match the services provided by the separated by each entity and can be seen in the figure below.

Direct Support Workers are employees who directly provide services to clients throughout the regions. They are responsible for organizing themselves such that a high quality of service is upheld. They report directly to their team leader, who passes all pertinent information to Regional and Headquarters Management. In the figure and table below, the organization structure and duties of the Regional Staff can be found.

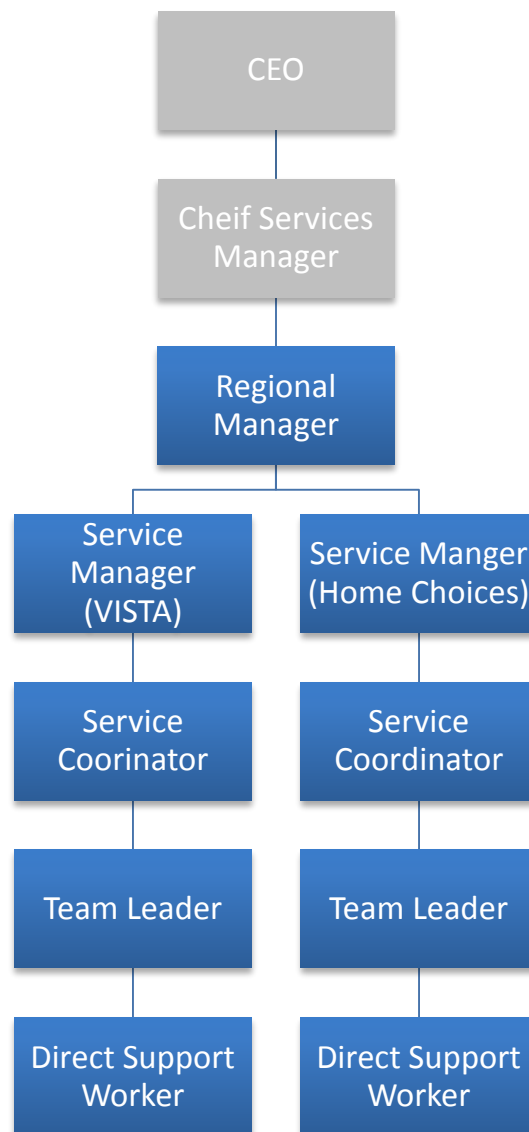


Figure 25 – Regional Staff Organizational Chart

Table 25 – Regional Staff Roles Description

Position	Duties
Service Manager	<ul style="list-style-type: none"> • Is responsible for ensuring that the services provided to clients and meet the standards set by the NDIS and DHS • Focuses on the operational side of these services
Service Coordinator	<ul style="list-style-type: none"> • Is responsible for ensuring that the services provided to clients and meet the standards set by the NDIS and DHS • Focuses on the operational side of these services
Team Leader	<ul style="list-style-type: none"> • Is responsible for managing Direct Support Workers and the services they provide • Is responsible for rostering employee timesheets • Reports facilities or OHS related risks
Direct Support Worker	<ul style="list-style-type: none"> • Is responsible for showing up to working on time • Provides quality service to clients • Accurately logs hours they have worked

APPENDIX B – CEO INTERVIEW

Interviewee: Graeme Kelly

Interview date: April 11th, 2014

Position in organization: EWTF's CEO

SUMMARY

Graeme Kelly is the CEO of EWTF. He started a year ago with the goal of moving forward with the organization and setting up a new strategy to improve the services of the Foundation. With this goal in mind, Graeme Kelly performed open sessions throughout Victoria where he obtained feedback from clients and employees, and in result the Strategic Plan 2013-2016 was created. During the interview we focused on the strategic plan and how endpoint devices fit in the future of the organization.

QUOTES:

- “Face to Face is very important and valuable in an environment like this. This business model is essentially human contact, therefore the technology can't replace the face-to-face interaction
- “I want to do my job better. I want to be connected so I can communicate more effectively, so I can be in touch with what's going on, and so I can be more efficient in my transactions”
- “Another problem was about rationalization of paperwork or data. If we had better technology we could do it better and in make everyone's life easier. Everyone gets access to information quicker”.
- “It is a key opportunity for us to find out what would work best for us and make decisions about resourcing and funding and capital”

Q&A

1. What are the main problems that EWTF is facing?
 - “1 of 3 issues is technology”
 - It came out in pockets before and certain groups mentioned it before
 - The back system wasn't there so we need to invest in all these systems.
 - We got actually smaller so we can get better at what we do because we couldn't sustain the amount of clients we had.

Employees

- Rationalize the paperwork or data. Have a better system without the need to duplicate paper
- Rostering is the main reason behind the device use

Clients

- Not so tech savvy
- Use technology for entertainment and social

2. What is the Strategic Plan 2013-2016?

- Next year will start planning for the 2017-2020 plan.
- Has performed 7 tours of information sessions to obtain feedback from clients and employees
- Consists of four main areas of improvement: services, people, relationships, and resources.

Services

- Demonstrate to meet the needs of our clients
 - o Can we meet client's technology needs?
 - o Easy to communicate to client's
- Better services grow because it best meets the needs of the stakeholders
 - o Having devices will make us pioneers in the field and will help our service grow as leaders in the disability sector
 - o A strategic advantage of growth for the future is a good PR, and devices would definitely help with this.

People

- Safety and Healthy work place
 - o Access to training and safety around the use of technology
 - o Sharing information that will be cost-effective
 - o Provide training and for staff on branches to be able to join without the need of being physically at the training location.
- Safety
 - o Take photos of hazards
 - o Perform assessments, submit reports and forms
- Staff
 - o If we have good technology and communication, the staff will be happy in the workplace. They will feel connected.

Relationships

- Opportunity to influence decision making
 - o Run surveys with clients and families and ask them to vote on certain topics
- Stakeholders outside of the organization: funders, and others
 - o Good communications will help establish relationships with stakeholders
 - o Really important because essentially they pay the bills
- Board of community will be more aware of us and the support we provide. In the sector we are much known. Technology like the video stories, social media.
- A more contemporary organization will attract younger clients and staff.

Resources

- Demonstrate to be used in a sustainable and ethical manner
 - o Demonstrate how regional managers are saving a day a week to use for better purposes
- Ethical

- We are not wasting fuel to be driving huge amount of hours that can be saved with video call
 - Avoid risks of accidents by having less time on the road
 - The available resources are better. Good use of the resources and it is a clear way of a more effective use of technological devices.
3. What do you recommend for this project?
- Consider the human aspect in terms of technology
 - The technology cannot be invasive or a barrier
 - Look into partnerships with technology providers.
 - Explore opportunities into brandings or other partnerships not related to technology

APPENDIX C – EXECUTIVE OFFICER INTERVIEW

Interviewee: Catherine Cairns

Interview date: April 1st, 2014

Position in organization: Business and Strategy manager, and Interim Executive of Services

SUMMARY

Catherine Cairns has been in the company for over a year, she is the business and strategy manager and is currently acting as the interim of executive services as well. Catherine Cairns gave us insight on the Strategic Plan 2013-2016, the steps EWTF is taking to improve its services, and the challenges they had to face and are facing in the organization.

Q&A

1. What does your job entail?
 - Permanently business strategy manager
 - o Based here in Carnegie and consists of implementation of the strategic plan
 - Interim Exec officer for services
 - o Manage delivery of services throughout the regions

2. Could you please give us an overview of the Strategic Plan 2013-2016?
 - Reasons for Strategic Plan
 - o The organization wasn't very connected to clients or regional staff
 - o Connectivity of systems and endpoint devices
 - Relation to the NDIS
 - o Strategic plan was formed as a way to address new structure of NDIS in Australia
 - o Works in parallel with NDIS regulations
 - o Their current model is well aligned to the NDIS
 - It represents a social, and economic participation of the people with disabilities in the community
 - o In many ways the NDIS doesn't change much in Victoria
 - In Victoria they already had that individualized plan for about a decade.
 - The NDIS was built based on some of the Victorian principles and values
 - o Plan makes sense from economic point of view
 - Clients want to go out and get a job and pay taxes
 - That means they put less of a burden on
 - Goals of the Strategic Plan
 - o It's not about creating a product but establishing a new culture
 - o Work together with clients so not there to do stuff for people but enable them to be independent and stuff with them
 - o Meet with clients and families and staff in all locations

- Progress of the Strategic Plan
 - o Since the launch we have made two update sessions
 - o Have done forums twice to receive feedback if it has gotten better.
 - o Respect has been established as main credo
 - o Catherine and Graeme had face to face forums and based the plan on the feedback received
 - o Performed an online survey as well to gauge client and employee need

- 3. What were some problems in the Strategic Plan and how were they overcome?
 - Overwhelmingly, particularly from clients and families they never heard back from the organization. They heard back from local services but not from them
 - o Implemented the newsletter. One goes for clients specifically and one for staff
 - Staff reward and recognition was an issue
 - o Now they have a reward and recognition program.
 - Constant Training of staff is another thing they have addressed

- 4. We are aware that EWTF has two different legal entities, how do most people know EWTF?
 - Brand Awareness
 - o People still associate their care or services with only Vista or Home Care
 - o Looking to transfer all that recognition to E.W. Tipping
 - o A lot of employees/clients left and not as many came in.
 - o We downsized the organization to provide better support

- 5. What are the problems EWTF has and how will you solve them?
 - To improve the services we will establish a service directions plan
 - o Record client information
 - Who we support
 - Where we support them
 - What disabilities each client has
 - Where they are within each region
 - o Helps streamline care system
 - o Get a better idea of the number of staff/ care services each region needs
 - Communication
 - o Responsiveness
 - Not as responsive as they should be to clients.
 - o Transparency
 - Work with a plan in terms of what a person wants to achieve in the next 12 months
 - Demonstrate concrete outcomes at the individual level but prove at global level what they've done

6. What are the risks and opportunities you see from the use of endpoint devices?
 - Risks
 - o Increasing connectivity and endpoint device increases employees and clients ability to give feedback, both positive and negative
 - o More problems become apparent as more information is exchanged from different levels of the Foundation
 - Opportunity
 - o Improving connectivity and endpoint device use will greatly improve E.W. Tipping's ability to provide reliable, consistent, high quality care to all clients
 - o Greatly improve their employee systems and streamline rostering and payroll processes
 - o Risks convert more to growing pains

7. How well are endpoint devices currently being used at E.W. Tipping?
 - Not in the best way

8. What are the problems with the endpoint devices?
 - It is an area of weakness
 - It is the volume of users we have in the system
 - Cabling and capacity in certain regions in Victoria is inadequate
 - We need to update how people connect to database, email is down, and more

Phone lines

- When clients dial in at regional branches, there enough phone lines
- The system gets overloaded
- The responsiveness is not there.
- ONGOING ONE: From a regional level. My phone calls don't always get returned

Carelink+

- Use the Carelink+ database all the time
 - o Sometimes slow even in Carnegie office
- It is critical to improve Carelink for the staff to check client's information. It adds frustration
- Not effectively used, But they just started actively using it around 8 months ago. It is a slow process but it is getting better. They are able to validate client's information.
- In terms of what it can do vs what it is doing → they are using around 20% of Carelink+ capabilities

Financial statements

- Need to provide the clients a update on how much of their available money they've used and how much is left

Regional Managers

- Some regional managers have phones that can't open attachments

- 9. What endpoint device do you for working purposes?
 - Mobile phones are essential. They spend a lot of time on the road.
 - She has an iPad.
 - Laptop - very old and heavy
 - o At times the computer is very slow
 - o If she doesn't has her own laptop it is a problem to connect to the server.

- 10. What are your recommendations in terms of endpoint devices?
 - For Regional Managers
 - o Upgrade to a Smartphone
 - For general employees
 - o Employees need access to phone that allow email management
 - For houses
 - o In the houses it would be important to have greater connectivity. Faster connection to database, internet, etc.
 - For Caregivers
 - o Instead of paper based timesheet move to an **electronic timesheet**
 - Process for employees to electronically check in and out
 - The time sheeting system would go through Carelink
 - o WHY
 - Because the paper timesheet process takes about 1.5 days. It used to take 3 days but we have gotten better at it.
 - We need to take boxes that contain all the timesheets and go one by one.
 - If it is electronic we save money and time because it would be an automated system and we would only need to check for the ones that seem out of the ordinary.
 - For Carelink+
 - o More actively Rostering.
 - o Building Client's profiles to access their information.

APPENDIX D – ICT INTERVIEW

Interviewee: Dean Westaway, Nalin Thamel

Interview date: March 21st, 2014

Position in organization: ICT Regional Manager, ICT Regional Helpdesk

SUMMARY

Dean Westaway and Nalin Thamel are both the managers for every technological operation in the organization. They both are the ICT Managers, and are in charge of managing the network infrastructure, inventory and management of endpoint devices, and providing IT support. Both ICT managers put us up to date with the current system in place at EWTF and gave us details on the technological challenges the organization is facing.

Q&A

1. What has been the process at E.W. Tipping for previous endpoint device refreshes?
 - There hasn't been exactly a process in the past to refresh the+ endpoint devices in the organisations. Mostly the process has been looking at what devices are available at the Foundation, and which of these devices can they continue to use.

2. Could you provide us with an accurate inventory of endpoint devices currently at E.W. Tipping?
 - Before they used to fax each other to communicate, but as technology has advanced they have introduced laptops, which are the dominating device in the workplace.
 - Infrastructure wise it has been carried on from refresh cycles. The last update made was changing from IBM to HP servers which allowed for more memory and speed.
 - Hardware wise they have around 350 devices. Around 8 or 9 printers, 200 laptops, 100 smartphones, and other devices. A detailed inventory will be obtained later from the finance department who have an excel spreadsheet.
 - o Most of the laptops used or IBM Thinkpads. There are a lot of iPads that higher managers have for board meetings and other related work. Lastly, employees use mobile phones for emails, and such.
 - The system in place to track the devices and have in inventory is an excel spreadsheet where whenever a device was purchased they would write the devices information in it, like serial number and other relevant information, and then pass it on to finance who would charge the respective department for the device.

3. Could you provide us with an overview of E.W. Tipping's current network, including positives and negative attributes?
 - E.W. Tipping's current infrastructure is that of an ad-hoc wireless infrastructure. It is not centralized, and varies depending on areas. A lot of the offices are connected using ADSL connections and they all are data linked to the financial headquarters which contains all the servers. A lot of staff uses 3G and 4G dongles from Telstra to connect to the internet.
 - One of the biggest problems with the network is the connectivity. Most of the internet is contracted and it is not focused on one wireless provider. Therefore, it changes over the

areas. For example, house accommodations currently run on 512kBps but it will be upgraded to 1MBps. Regardless, if the internet is a problem there is nothing that the best and most updated device can solve.

4. What devices, in your opinion, work best in E.W. Tipping's network?
 - There is no preference over what devices work best, and no preference over any vendor. Currently the E.W. Tipping environment is a Windows environment but any other operating system would work well in the current network infrastructure. The device doesn't really matter, what we need to look into is if a device doesn't work what E.W. Tipping can do to improve.
 - The only thing we need to make sure is that the device needs to be compatible with CITRIX. Which now a days should not be a problem, because most of the devices or CITRIX compatible.
5. Is there any difference between the main office and other branches?
 - Device wise it is the same for all offices. Network wise it is the same also for the exception that each office is linked to the financial headquarters because that is where the servers are.
6. Does the internet speed effect or limit the types of operating systems that you can deploy?
 - It doesn't affect the devices they deploy but it affects the connectivity. For example, if a house accommodation is trying to perform any task on a computer and the internet is slow, because it connects to CITRIX and it runs from it. So, if the internet is down, then the problem will have connection problems and will think that it is the device when it actually isn't.
7. How would you say the endpoint device distribution differs across the different regions of E.W. Tipping?
 - Currently every device is compatible to E.W. Tipping's network. Right now they are having problems with Chrome OS laptops, but it is something that will be fixed. CITRIX is compatible with android, windows, and IOS as well.
8. Could you tell us more about the new technology infrastructure facility that is set to be constructed soon?
 - E.W. Tipping is building an information technology site in Princeton. It is about 80% done and once it is fully operational every server in the Carnegie branch (about 20 CITRIX servers) will be moved to the Princeton office. Other investment will be made to improve the network infrastructure.
9. What is the biggest problem with the current infrastructure that prevents good connectivity?
 - Definitely the internet. It is something out of our reach.
10. What are your thoughts on BYOD?
 - It is definitely a good option to consider and something we could look into. We could weight BYOD by looking at the pros and cons of implementing such scheme. It is something not done yet because it means additional work and more support from the IT department. Not

only that, but it brings a lot of complications with people's personal devices and might mix work computer problems with personal computer problems.

- If it was to be implemented though some policies and procedures would needed to be set for people to know what devices are recommended and how to connect the device to the network, which would be through the IT department.

11. What are the main problems that we need to focus our attention to?

- The offices devices are outdated
- The houses have internet and connectivity problems
- If the device doesn't work what can we do to improve?
- Provide recommendations of what to do in terms of services
- Identify what people are using now and how to change (update) it.
- Internet is too slow
- Monetary problems (we can't do laptops for everybody)
- Label equipment so a better inventory is made.
- How can things be done differently?

CLARIFICATIONS

- Upgrading data links between houses, 4-6 weeks
- Houses are setup with a keyboard, monitors, router, WISE (Citrix repeater) and a multi-station printer
- Dean Westaway will be out of reach till 7th of April.
- Citrix = 20 servers here to be moved to Princeton
- Possibility to access data at houses without citrix (For that they need actual cpu)
- Currently 1 or 2 houses have endpoint devices
 - These devices are client owned

NEEDS

- All devices need to be citrix capability
- High speed networking in houses
- Increase access to Carelink+ on the road
- Houses connecting to citrix

APPENDIX E – HR INTERVIEW

Interviewee: Jantine Eddelbuttel

Interview date: March 25th, 2014

Position in organization: HR Manager

SUMMARY

Jantine has been in EWTF for 4 years now, and she is the manager of the human resources department. She is in charge of recruiting and selecting new staff, and making sure that every employee is fulfilling their duties within the organization. She provided us with the operational structure of the organization and explained the EWTF business model. Additionally, she gave us insight on the different roles, and technological needs and problems in the organization.

Q&A

1. What does your job entail?
 - Jantine looks after payroll, recruitment and selection, OHS, etc. She is also responsible for HR strategy and planning. She is responsible for the quality of the staff that they bring into the organization, in charge of Induction process before they start their roles, and training. She also plans special training programs for specific clients. Lastly she ensures that the environment where staff works is safe. With all this in mind she oversees four areas:
 - o Workforce
 - o OHS
 - o Leading and Development
 - o Recruitment
2. What is the structure of the organization?
 - EWTF consists of two legal entities, E.W. Tipping Foundation and Vista Community Support. Each has a separate agreement with independent conditions.
3. How does that breaks down in the organization?
 - The two entities don't really make any difference. For HR they deal with everything across the board. They work with 8 regions. Regardless of where the person is deployed.
4. Tell us about Job functions for each person. Any glaring places where people are not giving resources for their job functions?
 - There are:
 - o Regional Managers: based in a branch office
 - o Services Managers: based in a branch office
 - o Service Coordinators: based in a branch office
 - o Team leaders: based in a branch office and provide support to the staff in a house.
 - The coordinators and managers average age is 45 years.

- Team Leaders are on average 22 years old. Mostly do youth support so they are attracted to this type of work.
 - Team Leaders and coordinators are tech savvy. They require and want a greater technology do their jobs.
 - There could be at least 100 staff under each service coordinator.
 - Improve Carelink to acquire more about client needs and information. Have a better matching.
 - Constant complains about mobile phones.
 - o E.W. Tipping should provide a reasonable phone.
 - Annual reviews are done to each staff. Performance reviews documents that sit on daisy and need to be completed. They are probably better ways to be done rather than paper based. Needs to be more efficient.
5. Does everyone has access to employee survey?
- Everyone has access to employee survey
 - Reveals top priorities and in result requires a response plan per region.
 - Last year biggest problems was tools and equipments.
 - o Mobile phones
 - o IT Speed
6. A lot of people that we talked to seem to think that interactive type of tablet would be best for their specific job function. From your point of view do you think this is useful?
- Yes.
 - o For workforce who are working in disability communities.
 - o In houses it could be depending on the client at the house.
 - o Children are technologically savvy. They have a hunger to use technological tools.
7. What could be improved at E.W. Tipping?
- Improve the internal system. Set up an intranet.
8. What is the breakdown of employees at EWTF?
- Total:
 - o 130 staff work in child and family
 - 70% are casual employees
 - o Disability residential are like 450 staff that work in this area
 - 65% are part-time
 - o Most work in disability community
9. Major complain that we get from service managers and coordinators is that they are required to be on call at all times but are not given the tools to actually access the necessary information if they get called. Is these staff provided with the right tools?
- Probably comes with after-hours staff
 - They need access to Carelink and log into citrix
 - Personally speaking, I never had a problem accessing citrix from home.

10. What are some problems that managers and coordinators face?

- Travel time can be an issue.
- If you travel 2 hours between offices something can be arranged with the team for when you are on the road.
- Managers and coordinators do not have an expectation to be driving and accessing Carelink.

11. What devices do you use?

- Her old laptop stopped working and she replaced it with a newer one.
 - o She uses a laptop
- Now she has a laptop, an iPad, and a galaxy Samsung S4
- All of these were provided by EWTF.

12. Which one do you use more?

- Definitely the laptop.
- For long visits rather have laptop because it is better to have full functionality.
- iPad is better for answering emails and quick notes. Good for eye view as well.

APPENDIX F – COMMUNICATION RELATIONS INTERVIEW

Interviewee: Jane Emery, Danielle Ramsey, Matthew O’Shannessy

Interview date: April 1st, 2014

Position in organization: Manager Community Relations, Marketing and Public Relations Manager

SUMMARY

Jane, Danielle, and Matthew are all in charge of the community relations of EWTF as well as the marketing and public image of the organization. They do ads, advertising, brochures, slogans, share stories, social media, and more that can help EWTF in spreading their services and branding. All three of them provided us insight on their views of how endpoint devices could help improve the services and image of EWTF.

Q&A

1. What does your job entail?
 - Community Relations is the actual name
 - We do fundraising and communications
 - Staff:
 - o Michael is at a fundraising
 - o Matt looks after digital media and any creative development, design studio film, and art work and writing
 - o Danielle does writing, briefs, brochures, and communications in general. Organizational communications for Graeme, newsletters, press, etc.
 - E.W. Tipping has no advertising budget
 - They had five brands which they are centralizing into one, E.W. Tipping. Therefore they are constantly sending brochures, emails and other documents.
 - Create programs for activities and clients to boost the programs
 - Ultimately, all of it will be E.W. Tipping. Within the next 12 months vista and E.W. Tipping Foundation will be known as Tipping.

2. Can you tell us about the Strategic Plan 2013-2016?
 - How they did it
 - o They visited every single branch throughout Victoria and invited people to attend open forums. During these open forums they asked the employees and staff for feedback and recommendations.
 - o They main issues raised were what they could do to improve their service. They tried to get people to say the change they want to see in one word and that is how they got the key words in their strategic plan.
 - o They also performed a survey to their employees and clients.
 - o From here they created their strategic plan.

- Started a quarterly client newsletter
 - o It is a hard copy and it would be very beneficial to send them by emails. They don't have the emails in Carelink+ and someone would need to plug these emails in. It should be a required standard to get the clients or family member's email for contacting purposes.
 - o Videos are sent to the client by attaching a link in the newsletter!
 - Started a Graeme Newsletter where they make a video and send it to stakeholders and seniors to keep them in the disability sector and up to date with the organization
 - o Started with an interview to the disability commission, the editing is made and then they send it to over 100 people.
 - PR Plans
 - o Had an interview with Graeme's foster son
 - o Had an interview with Marry Wooldridge?
 - o Are planning on doing a video with him at Harvard
 - o Perform a Graeme video update of strategic plan
3. How could employees use Endpoint Devices and how would this help EWTF image?
- They are new to social media. Have been on Facebook and Twitter for about a month. Currently have around 100 followers and are aiming to get 500.
 - o So far they have received good feedback.
 - o Twitter is used to talk to people in a fast way.
 - o Facebook is used to share stories and events.
 - People, both employees and clients, could in fact use endpoint devices to improve the public image of E.W. Tipping. They could send into the department photos and videos and then someone would edit them and post them.
 - We have a story bank and sending emails with pictures and stories helps to keep all of these and use them later at specific moments throughout the year.
 - Link with a media company get space for advertising and get people to know them and ask for more donations
 - We have a Facebook page, a twitter account and a YouTube page. If anyone has an endpoint device they could connect with us and keep up to date with EWTF.
 - We have currently 5 videos on FB, but anyone is welcome to share videos and stories that impact positively the community.
4. What are some of the problems EWTF has in relation to technology?
- Logging working hours. Currently they have a paper timesheet. They want to transfer into an electronic timesheet.
 - Need to be aware of the not so tech-savvy and the tech people
 - Not everyone knows them as E.W. Tipping. In the region's most people know them as Vista.
 - For example, 400 Victorians didn't know where Tipping is and there is a problem linking these people with Tipping

- Transitioning to Vista and Tipping. Huge amount of history about both.
 - o Vista known as blind support.
 - o Tipping has background with the journalist (Bill Tipping).
- ½ of the problem is technology and the other ½ is relations with people. Matt could go out to a house and but if they don't have a relationship to capture moments then it will be of no use. On the contrary, if the care givers had an endpoint device the organization itself would benefit from pictures and more that could be used to improve PR.
- Need to first clean all the other brands (E.W. Tipping Foundation and Vista Community Support) and have one image (E.W. Tipping)

5. What are EWTF plans for the future?

- Internet project: they have looked at platforms and desire to establish an intranet.
- They are currently redesigning the website
- They want to replace Daisy (internal employee's login site)
- There is an idea to develop an application for phones or computers so clients can look at their packages, and other relevant information such as how many hours they have left, the services, etc. Carelink+ is looking at developing this app.
 - o Digital Assessing Tools: it is the app being developed. The app would link to tablets and smartphones. The carer would assess the Client with a disability on his needs and upload the information through the app and then this info gets download into the system and every employee has access to it.
 - o They have the funding and it would be developed as a version that could then be sold to other sectors.
 - o It is innovative and would make them a sector leader

6. What endpoint devices do you use?

- They use their own MACs and software for editing videos and such.
- E.W. Tipping provided them with a ThinkPad but do not use it.
- Use professional equipment like cameras. They hire this cameras and equipment.
- Computers are at least 3 years
- Danielle complains to Jane about the phone that she has. The phone is too old and can't do anything. They would need a phone that is fast enough to manage media crisis

Jane

- E.W. Tipping provided her with a PC (ThinkPad)
- She uses her own phone for work but E.W. Tipping pays for the plan.
- She has an iPad provided by E.W. Tipping
- She uses a MAC to create designs, ads, etc.

Matt

- E.W. Tipping provided her with a PC (ThinkPad)
- He uses his own phone for work
- Was given and old Motorola by E.W. Tipping but does not uses it.
- He uses a MAC to create designs, ads, etc.

Danielle

- E.W. Tipping provided her with a PC (ThinkPad)
- She uses her own phone(Samsung) for work
- She was given an entry level Samsung but does not uses it
- She uses a MAC to create designs, ads, etc.

APPENDIX G - CARELINK+ INTERVIEW

Interviewee: Vivian Potiris, Daniel Maxwell

Interview date: March 25th, 2014

Position in organization: Carelink+ Manager, Systems Administrator

SUMMARY

Vivian and Daniel are both in charge of Carelink+ and the rollout of this CRM throughout the organization. It is their job to address any problems with the system, provide training, and address any other pertinent issue with Carelink+. During this interview we obtained information on how Carelink+ works, the role endpoint devices play in relation to Carelink+, and the problems they've been facing and what they expect endpoint devices could solve.

Q&A

1. What does your job entail?

Daniel: systems administrator

- It is a technical role
- Creates template for employees and caregivers to follow so Carelink+ use is easier
- Follow up with updates and talk to IT to launch updates throughout the entire system

Vivian: manager

- Business process engineering
- Helping provide transition to "client first" use of Carelink+
- Quality of use
- Giving them better access

2. What is Carelink+

- It is a Client Management system (CRM) used for:
 - o Medical history
 - o Roster system – list of support workers
 - o Interface to payroll system
 - o Invoice and financial statements to clients

3. What is the maintenance of Carelink+ like?

- Make Periodic updates to system
 - o 2-3 times per year
 - o Goes through ICT department
- Major update recently
 - o Tested well and will go into production soon barring passing through ICT
 - o Will be done in conjunction with Citrix update

4. How is Carelink+ currently being used?
 - Whether you are an external or internal employee you have to connect through Citrix to access Carelink+
 - Have about 100 licenses for Carelink+ (100 ppl on at a time). If the 100 people are logged in and some 101 person wants to log in as well then someone needs to log out first before that other person can access Carelink+
 - o 70 licenses are for vista
 - o 30 licenses are for E.W. Tipping Foundation
5. What are some of the problems with Carelink+?
 - Takes too long to load for normal use
6. What would you like to see in Carelink+?
 - An app developed which could be loaded onto devices that allows access would be optimal
7. What is the current level of access to Carelink+ for support workers and clients?
 - Team leaders and coordinators can currently access their region
 - Support workers and clients don't have access
 - Shift changes go through coordinators
8. What would be the optimal system:
 - Clients had access to view their own information, make notes, attach documents etc.
 - Support workers would be able to make notes, access file
 - Training system to improve efficiency of employee use
 - Limit paper based system
 - Currently they have a system that sends mass SMS to care givers asking to take shifts. Easier and better than having the coordinator call every care giver
9. What are some limiting factors with Carelink+?
 - Money is the biggest limitation
 - Most care takers aren't good at IT
 - Not familiar with system
 - Low amount of training
 - Would rather use paper
10. What is the paper based system like?
 - Intake system: takes down information on paper and then inputs that information into Carelink
 - Ultimately would be best to input it directly into Carelink+
 - Maybe have a tablet and input data on the fly

11. Where would you like to see Carelink+ in the future?

- First getting monthly statements out to clients
- Time and attendance charts
- Then providing client and employee access
- They will have to keep dealing with the current system until at least this time next year when the NDSI is fully implemented in Victoria. Then they can focus on invoicing clients only.

12. What are some areas of improvement?

- Most important endpoint area: Improve Intake process with clients
- Tablets would really help getting information from clients
 - o Helps them see it and understand what is going on
 - o It is more visual friendly and doesn't seem as hiding something from the client.
- Service managers and coordinators
- USB Dongles are important for Wi-Fi and maybe sharing files.

13. What endpoint devices do you use?

- Laptops
 - o Is at least 5 years old
 - o Runs Windows 7
- Use their own personal mobile phones for work
- Lisa (another member of the Carelink+ team) does training a couple times a month and travels all over Victoria
 - o She needs remote access
 - o Could benefit from a tablet

14. What are some problems with the devices you have?

- Ideally they would have more processing power, bigger screen
- Takes 10 minutes to do calculations

APPENDIX H – OHS INTERVIEW

Interviewee: Matthew Casey, Rita Housiaux

Interview date: March 26th, 2014

Position in organization: OHS Manager, Injury Manager

SUMMARY

Matthew and Rita are both employees of the Occupational Health and Safety Department at EWTF. They are in charge of performing assessments and ensuring that the facilities are in optimal conditions for providing services. They both gave us insight on the OHS functions and how endpoint device relate to their role. Additionally, any benefits that endpoint devices could offer to the organization.

Q&A

1. What does your job entail?
 - COSI and OHS are very similar. They are both internal services to E.W. Tipping in charge of performing auditing, improving the working environment and promoting the health and safety of employees and clients.
 - OHS applies to both, E.W. Tipping Foundation and Vista Community Support.
 - They perform on average 2.5 hour assessments:
 - o Fire safety, infection control, chemical risks, cleaning, behavioral, physical, etc.
 - Perform checklists
 - Assess the environment
 - Consult with Staff
 - Document conversations
 - Generate reports (analysis, issues, recommendations, conclusions)
 - Walk around the house, look for critical areas
 - Perform weekly reports
 - Travel whenever there is an injury to assess the reasons behind such injury and what could be made to avoid the situation next time.

2. What would you say your functions as OHS managers include?
 - Talk to a lot of people.
 - Take a lot of pictures when performing the audits (on average 100 to 150 pictures per assessment)
 - Submit forms and reports including their audit results
 - Provide physical and behavioral support
 - Travel at least 2 times per week
 - Take in requests and follow up on them (i.e. the desk is too high, the chair is uncomfortable, etc.)

3. What are some of the problems you are faced with?
 - At the moment they record a lot of data and information on paper. They do intake system requirements.
 - They take a lot of pictures and are not provided with a camera. (They use their own)

4. Does E.W. Tipping create its own policies and procedures? How long have they been in place?
 - E.W. Tipping has its own policies and procedures in place. For following guidelines they came up with their own assessment methods. The policies and procedures are constantly changing with the disability standards, therefore it has to be updated constantly to meet the new requirements.
 - There are minimal variances between the policies in child and families services, and disability services. What changes is the steps taken when performing an assessment. You need to act certain ways when around of people with disabilities and act certain ways in front of children.

5. How could an endpoint device help on your assessments?
 - We keep a record of every report made. It is a very rudimentary database due to all the paperwork that needs to be filed. Currently they are working on an electronic system, they are looking into
 - o Periscope: a more flexible risk and project management as described by them
 - o Risk NAM
 - A device that takes photos and allows to write notes would make the assessments easier

6. What are the devices you use for work?
 - E.W. Tipping provided them with laptops and phones (not smartphones)
 - o The laptop is a ThinkPad about 4-5 years old.
 - o Matt's computer runs Windows 7
 - o Rita's computer runs Windows XP
 - "E.W. Tipping has a camera they provide for taking pictures when performing assessments but is very old and clunky." – Matt

7. What do you use an endpoint device for?
 - They check email on their phone
 - Also connects to CITRIX on the phone
 - Scanning documents is important
 - Use fax a lot
 - Ideal scenario
 - o Tablet for performing assessments. Take photos and write notes next to it at the same time.
 - o Replace Camera which is self-owned
 - o Replace paper with something electronic

8. We have received a lot of input stating that a tablet could help every employee performing their job functions. Do you see any problems with tablets?
 - "I suppose from modern perspective would be tablets with pens if you tend to do a lot of traveling. If you are stationed in a desk then probably a desktop computer" - Matt
 - Tablets are flat. They would be good for short term usage but I do not think they can replace laptops.

9. Do you have any recommendations for us?
 - They would benefit from a device that is flexible and portable (i.e. a laptop)
 - Every person has different needs (i.e. Matt's hands are too big so he needs a bigger screen)
 - Something that they can use to take pictures
 - Something they can use to complete forms and reports
 - Service coordinators do intake system requirements. They have a large amount of paperwork. Something that will ease the submission of forms and decrease the paperwork.

APPENDIX I – FINANCIAL DEPARTMENT INTERVIEW

Interviewee: Sharon Strutt

Interview date: March 27th, 2014

Position in organization: Financial Controller

SUMMARY

Sharon has been at EWTF for 12 months. Her role is that of a supervisor and she goes around the office and meets with everybody. She makes sure that all financials of the organization are up to date and on track. Sharon provided us with information pertinent to the update of endpoint devices, and how a refresh cycle would impact EWTF. Additionally she explained how the funding system works and how it applies to EWTF.

Q&A

1. What does your job entail?
 - Job Functions:
 - 90% of her time she is managing.
 - Attend meetings
 - Work with the people on the office
 - Supervise work with regional managers
 - Do cost analysis and reports
 - Work on financial planning
2. What is the role of the finance department?
 - Typical team in terms of finance
 - Pay invoices
 - Perform financial reports for management and stakeholders
 - Control money and budgets
 - Run cost analysis
3. How does the NDIS apply to the finance department?
 - The funding received for support contributes to the whole package of the client. It covers the wage of the carer and infrastructure cost as well as actually supporting the person.
 - The goal is to satisfy the client needs with the new NDIS in place

4. How does the NDIS and DHS apply o EWTF? And what are the differences?

NDIS

- The NDIS does not give the funding to the provider
- The client has the option to hold the money.
- The organization gets paid by the amount of service provided.
- NDIA does not give the money up front. Instead, it pays after the service has been given and an invoice has been made.
- Runs a business model
- “For small non-profit organization, the NDIS is a good thing. For larger organizations it might not be so good”.

DHS

- Provides the funding to whoever the clients wants them to hold the money
- The DHS ensures a quality level of service
- DHS gives 1/12 worth of client funding if they are to hold it every month
- Instead of getting money every month it will now be in a reuse
- At end of financial year the organization makes a financial report provided to DHS and gives all non-used funds back
- DHS provides funding for out-of-home care
- DHS moving slowly from contingency base to a block funding model
 - Block funding they ask you to hold a certain number of bids or houses and then you get paid to hold that
 - Contingency is that they will only pay you if the bid is full

5. What does the finance department use to perform their jobs?

- “Some people have laptops, a few people has smartphones, a couple PCs and that’s it.”
- They use three software’s: Carelink+, Chris²¹ (payroll database system), and Finmate (Financial Management System) and also use bank portals and DHS funding agency channel.

6. What are some of the problems the finance department has?

- There hasn’t been an endpoint device refresh cycle in the organization. The only way to change devices was if they broke. Then it was taken care off. “The team here has been using the same equipment for the past 3 years” (Strutt, 2014, personal communication”)
- There is no set process for refreshes.
- There has not been any turnover of equipment in the finance area
- No electronic timesheet system
- No electronic paper flow
- No electronic forms

7. Is there a budget in place for the upgrade of technology at EWTF?

- There is no set budget for the upgrade of devices. The devices are upgraded on a need basis. If you need one you request and then there is a follow up process.
- No actual budget. The money comes out of whatever they can manage.

8. Who is in charge of managing the upgrade of technological devices?
 - IT manages the purchasing and managing of endpoint devices in the organization
 - IT has its own budget as part of its contract. Last year money was starting to be set aside for upgrade of the technological devices. Not for this point in time but for the future.
 - The Foundation has slowly been upgrading their devices. First they updated their backup system and support. First they must have a good Foundation before deploying devices. It is worthless to upgrade all the devices and not have a good infrastructure to support it. Once the servers are operational and CITRIX is running smoothly then proceed into updating all remaining equipment.
 - IT has the inventory of the devices and the cost of each.

9. What is the monthly data bill at EWTF?
 - Sharon doesn't know how much the monthly data bill is. It comes in the bill and it just gets paid.

10. What are some problems you've seen with endpoint devices?
 - People complain the computers are slow but the work is based here and we can handle the slowness

11. Do you have any recommendations?
 - Set a budget for next year for the upgrade of devices and so on. They are working on it.
 - Setting data restrictions in terms of Carelink+ and have a full implementation and everyone gets access
 - It would work pretty well a renting system. You are going out you book a laptop! It would be useful to have laptops we could take with us when we go out and about instead of having "this is my laptop" mentality.
 - Getting a new finance system could be something to look into

12. What do you think are the needs of employees in terms of endpoint devices?
 - Everyone in the office has laptops. Not everyone needs one. No one in the financial department goes anywhere. They could benefit from the use of desktops and more powerful computers as long as it runs Carelink+ and Chris 21, and it is able to run excel and financial programs.
 - The devices need to be able to support both management programs used by finance (Carelink+ and Chris²¹).
 - Regional managers may need a laptop because they go out to the regions and they bring their bits and pieces with them
 - Scanners and Printers. Something useful could be a scanner with an optical scanner resolution (OCR) to avoid data entry and improve efficiency.

APPENDIX J – PAYROLL INTERVIEW

Interviewee: Vikki Rogers

Interview date: March 27th, 2014

Position in organization: Payroll Manager

SUMMARY

Vikki is the payroll manager of EWTF. She is in charge of maintaining both legal entities, Vista and E.W. Tipping Foundation up to date with any payment, and also paying employees. She explained to us how employees get paid, and how they track employees' hours for time sheeting purposes. She also explained how endpoint devices could improve the time sheeting system and make the payroll process more productive and efficient.

Q&A

1. What is the function of the payroll department?
 - Department pays for tipping and Vista Community Support

2. What is the process in place for paying employees?
 - a. Employees will do an export from Carelink from which will they take all the payment data
 - b. Payment data is pushed manually into payroll
 - o Use it for checking pays. Roster hours, etc.?
 - o If they upload employee's data, it gets transferred to Carelink+.
 - o Main application used Chris21.
 - c. Create a file that goes to accounts payable and it runs through the banking process.
 - d. Takes three separate systems to perform the entire process
 - e. After they have paid, they do a costing checks exercise to make sure they have done the right transactions and then finance runs their own process.

3. How does the two legal entities, Vista and E.W. Tipping Foundation affect payroll?
 - They use the same process for the two different companies
 - The two businesses each do different types of care
 - The two have different enterprise bargaining agreements
 - o Agreement for E.W. Tipping is far more beneficial for employees than agreement for Vista
 - It would be much more efficient for payroll and many other departments if both were aligned.
 - Organization may change with NDIS
 - o Most likely will come down to one bargaining agreement but still two companies.
 - o Employee pay will go up
 - Client per hour service charge will go up as well to counteract

4. What is the rostering process?
 - So when a person starts working it is setup on a call roster
 - That gets generated every 4 nights
 - It is up to them to approve there hours or not.

5. Do you have any Carelink+ and device accessibility recommendations? If so, what are they?
 - Recently talked with Carelink+ department about possibility of electronic devices like finger point devices to check in and out for timesheet.
 - o The system would be difficult to implement with Vista (no common location)
 - Another option is to have a code or digital signature
 - o The log in would be more accurate
 - o Easy to do from a simple mobile phone
 - o It would make regional managers jobs much easier (only have to deal with mess ups, instead of every input and output)
 - o Con - It would increase the need of employees for endpoint devices

6. What endpoint devices does the payroll department use?
 - Desktops for whole department (old)
 - o Don't leave the office very often, so desktops are sufficient
 - Printer/scanner – High level of printing
 - Envelope folder – (ask Pete about it)

7. What are some problems you think that needs to be addressed?
 - Paper recording system for employee records is inefficient
 - o Have to record hard copy of employee records for 100 years!!!
 - o Tedious process - They have to request to get a box and go through all the hard papers until they find it
 - o Not immediately reachable

8. Do you have any endpoint device recommendations?
 - Scanner for document organization
 - o It would be the most efficient method of data management
 - o It would reduce the need for storage space for payroll
 - o Storage of organizational records for 10 years and employee records for 100 years is expensive
 - In the process (august) to have a scanned copy. Scanner with OCR
 - From an audit point of view it would most certainly help.

- Make everything more organized and faster and easier to find information
 - It would be accessible and not need an archiving procedure
 - Everything would be in house and on a computer
- Nobody in the payroll department travels, except me. We could use a stationed computer and more powerful than something portable and light.

APPENDIX K – FACILITIES INTERVIEW

Interviewee: Keiran Credaro

Interview date: April 9th, 2014

Position in organization: Facilities & Services Manager

SUMMARY

Keiran job encompasses the direction of the properties owned by EWTF. He is in charge of performing assessments to this houses and making sure they are in optimal conditions for the clients to use, and do not reflect any danger or harm to the renter. Keiran provided us with an overview of the current status of EWTF regarding houses and the role endpoint devices play when he is performing a house assessment.

Q&A

1. What does your job entail?
 - Perform repairs and maintenance.
 - o Fix vehicles
 - o Supervise fleet managers
 - o Perform gardening in houses
 - Perform assessments of houses and make sure they are in optimal conditions
2. How do you save the assessments done?
 - Melissa is currently working on an electronic record management system
 - Currently use a facility software
 - Log-in on a computer and access daisy. Report is uploaded to daisy
3. How does the software help?
 - Best if utilized for contractors as well so they can log on and see where they stand in terms of services
4. Are you in charge of endpoint device maintenance?
 - IT takes care of everything regarding devices and wireless
 - He doesn't steps in IT boundaries
 - They are more in charge of the building surrounding the IT infrastructure
5. How many houses does EWTF currently own?
 - EWTF owns 40% to 50% of the houses.
 - The remaining or government owned
 - Inventory
 - o 10 offices
 - o Around 70 houses

- 46 owned
 - 30 or so are government owned
 - Any other house is leased on a personal agreement
 - They only take care of their own houses. Government houses problems are dealt by the government.
6. How do you know when to assess a house's conditions?
- If a team leaders in a house has a problem then the direct supervisor gets an email and the supervisor assesses if it is worth the attention. If it is then it passes on to him.
 - Ideally we would like to change the process:
 - The problem is recorded by a team leader
 - They currently can't see all the problems in the house. Only what has been recorded in the software. They are working on this to change it to look at everything.
 - They are trying to get support from the client/employee on how the service was offered, etc.
 - Currently in the future hopes to use WSM software.
 - Somebody requested and somebody addressed it.
 - They need someone to follow up, and make sure that it was completed.
7. What are some challenges with the new process you want to implement?
- Technical literacy of people using the devices on the other end?
 - The challenge would be, although in its most simplistic form, will be providing the training. The software might be easy, but teaching the person how to operate a device might not be so easy. It will be an interesting challenge. People are not so familiarized with devices, and the literacy factor is not as high as they would want to.
8. Do you take pictures when performing an assessment?
- Typically. Most of the problems are moved to that one authorized person. They have undertaken in the last 3 months a process to go over every assessment, take photos, does the door work, and window, floor, walls, etc. they are trying to look at the house in its entirety. Save it in the database and have each record on file.
9. Does the NDIS affect the houses?
- That is part of the new process in place. Before performing any changes you need to understand the problem behind it. That is why they are doing full assessments of the house so they know if there is a need to do any changes. Make sure the house complies with disabilities with areas.
 - They look at what is being utilized.
 - They look at the conditions.
 - They look at what they need vs what they should have.
10. What do you look into when performing an assessment?
- What is it being utilized

- What are the constraints
- What is the strategy looking/moving forward
- Going through the process of understanding what they need, looking at specialized vehicles, and looking at requirements.

11. What endpoint devices are being used

- Laptop: sits on the desk
- After hours: is a phone. The phone he uses is inadequate so he uses a smartphone.
- Portal to log in from home.
- DOES NOT USE IPAD
- Lisa: would use laptop
 - o A proper screen would be adequate considering her job function

12. Are you required to travel a lot?

- He travels but not extensively. Only half a day. He suspects that will change in the future. Travels at least once a week.
- Most of the time does it over the phone.

APPENDIX L – GIPPSLAND INTERVIEWS

I. INTERVIEW WITH VIVIANNE EVERETT

Interviewee: Vivianne Everett

Interview date: March 24th, 2014

Position in organization: Gippsland Service Manager

Summary

Vivianne Everett is the services manager for the Gippsland Regional Branch. Her job requires her to oversee both, Vista and E.W. Tipping Foundation services in that region. She is required to be on call at home and need to have access to data. She has been working at E.W. Tipping for 2+ years. As a service manager, she provided us with information of the Gippsland region, the services offered, and the employee demographics in the area. Additionally, she gave us insight on the problems currently faced in Gippsland and her recommendations that could possibly solve this issues.

Q&A

1. What does your job entail?
 - Supervises:
 - o Service Coordinator: each service coordinator (4) is in charge of a EWTF branch. Either E.W. Tipping Foundation or Vista Community Support, or even both. They oversee Team Leaders.
 - o Team Leaders: each leader oversees a house and the team is conformed of 10 to 16 people. They are expected to do clinical supervision which requires visual checking. Therefore they do a lot of traveling.
 - o She looks up after approximately 300 people.
2. What are the services offered in Gippsland?
 - Day Services
 - o Provide IT for people
 - o Access to computers
 - o Access to phones with minimal usage (emails, texts, send and receive mms)
 - Home choices
 - o Facility-based respite
 - o Permanently live in home
 - Vista
 - o Day services
 - o Community support
 - o Out of home care
3. What are some problems EWTF has?
 - Carelink+ software package has limited access. They do not have an application.
 - Only team leaders and above have access to Carelink+

- Care givers don't have access to records to view or modify
 - Sometimes the files are left as physical files in houses, and therefore Coordinators and Team Leaders don't have access to Carelink+ records
 - Every employee has the same username and password to access tipping
 - There are two entities Tipping and vista, each with its own websites
 - No conference call system in offices
 - Documents can take days to download (Internet problem)
4. What do employees currently use for work?
- Service Coordinators (select few) have an iPad that is used for photos, calendar, emails, etc.
 - Team Leaders have phones (flip phones) without internet.
5. In your opinion, what are the endpoint device needs of employees at Gippsland?
- **Service Coordinator need**
 - o Polycom to have conference calls
 - o USB Dongles to have internet access on the road, office and home.
 - **Team Leaders need**
 - o Access to internet on the road, office or home
 - o Access to video
 - o Light and mobile device (laptop, tablet, smartphone) for traveling. They travel for at least 2 hours.
 - **Houses need:**
 - o Printer, Scanner, Fax
 - o Training for care givers and clients on how to operate the multi-station device
 - **After Hour employees:**
 - o Access to internet
 - o Access to Citrix and Carelink+
6. What do you recommend to improve the efficiency at work?
- Update Monitors to accept USB sticks
 - Update laptops that include integrated camera
 - Devices that run Skype
 - Purchase cars that have Bluetooth or buy hands-free Bluetooth devices so you can sync your phone to the car. This way you avoid breaking the law or getting fined. It is an effective use of the travel time.
 - Purchase devices that have the ability to act as hotspots

II. INTERVIEW WITH MITCHELL BRODY

Interviewee: Mitchell Brody

Interview date: March 24th, 2014

Position in organization: Gippsland Service Manager for child, youth, and family

Summary

Mitchell Brody, was hired 8 months ago and works only for Vista Community Support. He is in charge of children in residential and protection care. Mitchell explained to us how the child, youth, and family services is, the support given, and the endpoint device areas that could be improved at Gippsland.

Q&A

1. What does your job entail?
 - Looks into service development and overview of the program in general
 - Out of the office a lot
 - Does a lot of driving
 - In charge of 6 houses, furthest house is 1 hour away
 - Oversees 70 staff

2. What endpoint devices do you use?
 - He bought an iPad
 - o Use iPad on 4g
 - o Uses it to access Carelink+
 - o Can access Citrix on iPad
 - o Uses it for emails
 - o Does not type documents on it
 - o Looks at notes after hours
 - Got a laptop and stick when he started work
 - Laptops are 7-8 years old
 - Got the sim card for his modem changed to his iPad so he can connect using cellular data
 - Uses iPad multiple times a day

3. In your opinion, what do you think employees need to perform better at work?
 - Thinks team leaders need bigger/better phone, or tablet
 - o Have laptops, phones, and modems
 - 7 year old laptops
 - o Phones are old and hard to operate
 - o Currently use flip phone
 - o Need mobile devices
 - o Device needs to be flexible
 - o Emphasis on functionality
 - o 24/7 email access
 - Coordinators need similar stuff to team leader
 - 6 steps to Carelink+ training were not received, or adequate
 - o Very ad-hoc. We all teach each other. There is no formal training.

- Would prefer individual training
 - System is easy to figure out
 - Needed complete renovation on IT
4. Do clients get access to internet?
- Not individually. Through a staff member they do.
5. What are some of the problems you've seen or experiences?
- Citrix is a slow system
 - Carelink+ causes a lot of frustration
 - Does more bad than good
 - Takes a long time to make changes
 - Slow connection speed, or stable
 - Causes a lot of complaints
 - Wireless printers take a long time to print
 - Issue with direct support workers, getting access to files
 - Can't see shift reports as regional staff because of support worker access
 - Units complain about ability to access, due to speed and stability also
 - Houses access to internet
6. How do you connect to Citrix through your tablet?
- Citrix has an app
 - Installed it himself
 - Could be a challenge for less technically trained people
 - Received no formal training on it
7. Do you have any endpoint device recommendations?
- Could use Bluetooth, being able to talk and drive
 - Look into how to give young people Internet
 - Need video links in the houses
 - Especially houses that are farther away
 - Have varying levels of access to Carelink+
 - Team leaders could use a laptop
 - Flexible work environments constantly on the move

APPENDIX M – GRAMPIANS INTERVIEWS

I. INTERVIEW WITH SEAN DUFFY

Interviewee: Sean Duffy

Interview date: April 4th, 2014

Position in organization: Grampians Regional Manager

Summary

Sean Duffy is the regional manager for the Grampians Regional Branch. His job is to oversee the entire region and supervise both entities, Vista and E.W. Tipping Foundation. He provided us with information of the Grampians region, the services offered, and the employee demographics in the area. Additionally, he gave us insight on the problems currently faced in Grampians and his recommendations that could possibly solve this issues, including endpoint device recommendations.

Q&A

1. Could you provide us with an overview of the Grampians region?
 - There is one office two hours away in Bushe?
 - Manages office an hour and a half north in vine
 - There is one house northwest. He also manages satellite offices
 - Ballarat has 100,000 people
 - In the area they have 440 staff
 - They have 20 houses
 - 4 Offices

2. What does your job entail?
 - Manager of the services of this part of the state. This is a regional hub. He reports to executives in Carnegie. Operationally to Catherine Cairns, and financially to James Digby.
 - Responsible for all services and staff.
 - Manages child services and disability services and all the teams
 - Have a structure of managers and coordinators.
 - Overall manages around 300,000
 - Talks to all divisions in Carnegie.

3. What is your role as a manager?
 - Central point of contact for the region
 - Managing the complex, industrial relationships, finance, problems, funding.
 - Manages Two regions (440 staff)
 - o Brati = \$100,000 (10 houses)
 - o Horshan = (5 houses)
 - o Bandigo = \$100,000 (2 houses)
 - o Swan Hill = \$10,000 (have 5 houses)
 - In every area they run community programs
 - Management structure. All north-western region

4. What are some problems you have experienced?
 - “Generally speaking I waste a lot of time driving in cars”
 - No video conferencing.
 - I use Skype but not everyone has video capabilities
 - Internet drops and often leaves people offline
 - The reliability factor is a significant problem
 - Rely heavily in going to houses and offices regularly.
 - Cannot track staff
 - Long time driving. Long time of dead time sitting in a car
 - o For example, if Kelvin went to Horshan the majority of people can’t get on the phone and check emails or anything until they get to the other site.
 - o Frustration: they are traveling to a site they can’t stop and check emails, but even if they stop at a site there is no way of connecting. You need to have a USB dongle.
 - It is impossible to access Carelink+ remotely. “Personal opinion”
 - The biggest issue is getting online wherever you are and accessing the client’s information.

5. What endpoint devices do people have in Grampians?
 - Most people got laptops. About 20 in total.
 - Service Manager has phones that allow them to read email and they have a smartphone
 - Sean has an iPad and a smartphone but it is his personally. He uses both all the time.
 - o He doesn’t bring the laptop on the road because he takes the iPad.

6. In your opinion, what do people need in?
 - Good Internet everywhere
 - o USB Dongle
 - o Mostly he needs is internet for emails

7. What do you think of Carelink+?
 - Staff uses Carelink+ to approve timesheets if the system is not working they can’t approve the timesheets on those sites.
 - Theoretically Carelink+ is very good. In practice there are a lot of limitations.
 - They rely on it to approve timesheets, when it works is great. They have deadlines they need to meet. What they have seen increasingly is that you can log in to Carelink and it can take you 2 to 3 minutes to move from one screen to the other. If you have 50 timesheets to do, and it takes you from 30 seconds to a minute in total for 50 timesheets that is just 1 hour of wasted time plus the time that takes to review each timesheet and approve it. It is an extremely frustrating process. There is no other way around. What the people in the outlined areas, when the system is working fine, it is efficient and is perfect. There are too many times that it doesn’t. They contact often IT Helpdesk and they say the problem is the internet service provider. We have a much stable system now than what it used to be before. In the central offices is much more reliable than what it is in the remote areas. The staff is trained in disability support, and often they try to fix technical issues over the phone but they are not trained in that area. You can’t mobilize IT easily. At times they will access your computer remotely to fix it but there is not much success with that.

8. Does the staff at Grampians travel a lot?
 - One of the coordinator in Bandigo drives to Swan Hill once a week
 - Kelvin drives to Horshan once a week
 - Service Managers travel at least twice a week. That is already a full day lost of work.
 - They own several Company cars. Service managers and coordinators have a car each. They also have book cars that people can rent.
 - o On average they travel 40 to 60 thousand km a year.
 - He does has Bluetooth in the company car. Probably the majority except for the book cars. Most of the cars are fairly new (under 100 thousand km)
 - Expectation from the staff is that they have to work wherever they are.

9. What do you think needs to be improved?
 - When they did a client satisfaction survey, IT Support was the most important aspect to improve.

II. INTERVIEW WITH JOEL TURNBULL

Interviewee: Joel Turnbull

Interview date: April 4th, 2014

Position in organization: Program Development Manager

Summary

Joel Turnbull is the Program Development Manager at the Grampians branch of EWTF. He is in charge of supervising operations and creating innovative programs for EWTF. He gave us feedback on endpoint devices problems and recommendations, as well as how they apply to EWTF.

Q&A

1. What are some of the problems with endpoint devices at EWTF?
 - A lot of wasted time driving
 - Tablet doesn't link into Carelink (or doesn't know how to)
 - They are very paper based. Should be able to write everything straight into the system.
 - o What we have right now and it is very backwards. Everything is duplicate so they have a paper file and an electronic file. Sometimes the paper system brings a lot of gaps because the information is not stored correctly.
 - o They have information that just sits in folders.
 - Connectivity is a major consideration.
 - o Tipping is time pressured always. If there is lag in the system that is a major issue. This leads back into connectivity.
 - Some people don't have an option to work outside of citrix because it is linked straight to it.
 - Carelink is not used to its full capacity. It has a lot of functions that has not been explored.
 - "The employees struggle" they don't have a full understanding of the endpoint technology. People are not necessarily using it to demonstrate the capabilities it can be used for client's information (referring to Carelink+ and how it is used only for financial purposes).
 - There is a lot of Carelink+ that can be taught to people that they do not know. > Get better at using it. There a lot of functions that can be explored and exploited.
2. What do you use for work at EWTF?
 - Uses a tablet (Samsung Tablet) and a laptop
3. What do you recommend to improve services and productivity?
 - Portability is important!
 - Ideally if you could just store the information electronically directly
 - The more electronic they can go the better.
 - It is not about having the right IT Tools but having the right IT systems!
 - There are about 12 different forms to fill out. These forms are constantly changing and it would be better if all these was automated and electronic.
 - Install AC Trackers you can login through phone into somebody's house.
 - Have video conference to better support people and more efficient use of everyone's time
 - A risk management software or system (Risk Naam he mentioned)
4. Where do you see EWTF in the near future?
 - Within one year everything will be electronic or at least that is the plan

III. INTERVIEW WITH KELVIN MELOURY

Interviewee: Kelvin Meloury

Interview date: April 4th, 2014

Position in organization: Service Coordinator

Summary

Kelvin Meloury is a service coordinator for the Grampians Regional branch. He works for Vista Community Support and oversees children services. He explained to us how out of home care (OOHC) services are, the support given, and the endpoint device areas that could be improved at Grampians.

Q&A

1. What does your job entail?
 - Works in OOHC system
 - Supervises 6 Residential houses in his region
 - Goes to each house once a week
 - Does an assessment of the unit. If it satisfies all the requirements
 - Take meeting minutes and do environmental assessment
 - Supervise Team Leaders and meet with them
 - "OOHC responsibility is to drive kids to the hospital if needed be, etc."

2. What are some of the problems you experience?
 - Connectivity
 - A lot of time wasted checking the timesheets and going through each.
 - Personally, on Thursdays no connection to the internet because it is my traveling days. Friday mornings a bunch of emails from the day before. It would be nice to have access to internet but with the flip phone I received I can't

3. What device do you use for work?
 - A Samsung flip-phone that is really old (provided by EWTF)
 - The care givers: They have 2 phones for the house. So the phones are crappy phones. They are passed from team leaders.

4. What endpoint devices do you recommend?
 - A smartphone would be ideal!
 - Have a consistent plan! And phone for everyone.
 - Smartphone with Email capabilities would be useful.
 - It would be nice to have photos more than a need to have.
 - Something digital for risk management
 - Something to improve the timesheets. Electronic timesheet.
 - Something portable and easy to use. Has preference for tablets or smartphones. But laptop would be equally fine. But if had a laptop that battery lasts enough.
 - Confidentiality is also important. Rather have something small that only he can see vs big computer with big screen and having people around you look at your business.
 - Coordinators or Team Leaders sometimes go to court to defend children. If had a tablet or smartphones would be easier to use than a laptop at court.

IV. INTERVIEW WITH JO LANDWEHR

Interviewee: Jo Landwehr

Interview date: April 4th, 2014

Position in organization: Team Leader

Summary

Jo is a team leader and she supervises around 10-16 care givers. She acts as a liaison between direct support workers and the Foundation.

Q&A

1. What does your job entail?
 - Supervises care givers

2. What problems have you seen or experienced at EWTF?
 - A lot of the equipment is outdated. Not all staff has training to use equipment and Team Leaders have to provide that training.
 - Distance is a problem. If your Wyse Terminal is faulty then they need to drive it to Carnegie and back. Time wasted.
 - Laptops are really old.
 - There is a lot of lag on the computers because it works online through the Wyse terminal.
 - If using smartphone can't send photos because they are limited with the internet.

3. What do employees use for work at EWTF?
 - Some people have laptops with screens.
 - Team Leaders use Wyse Terminal. People on Wyse terminals are very limited. All team leaders work on Wyse Terminals.

4. How do you access the network?
 - She accesses the network in three ways
 - o Home: At home she will have a lot of dropouts. Very unstable connection. Logs you out all of a sudden. Very unpredictable. IT said it was her internet connection. Could be.
 - o Office: problems with cable lag. IT is pretty good on the phone.
 - o In-care house: it is ok. Sometimes stable, sometimes unstable. Usually if there was a problem it is due to lack of knowledge from staff. Helpdesk is only available during set hours (9 to 5 M to F). If one house is down usually the whole network is down. Could be the whole weekend. Team Leader could not find out until Monday at 9AM.

5. Is it really efficient to set Wyse terminals for Team Leaders? Why not give a cheap laptop?
 - Team Leaders don't really need laptops. They are there for a set amount of time and they have all they need in the houses. It would be better if laptops were set in the houses instead of Wyse terminals but if anything happened in the house or the kid was to get access to the laptop you never know what they could do. But if the right precaution methods are taken it could be extremely productive to have a laptop.

6. Could clients benefit from using endpoint devices?
 - Clients would benefit from having endpoint devices on certain scenarios.
 - o The kids can access devices for educational purposes.
 - o We often get iPads for the small kids to teach them with games. They can get funding for obtaining the devices.
 - o Have a device with access to the internet for educational purposes.
 - o Kids can't come into the office to access our network because the behavior might not be the most adequate one.
 - o Be careful with teenagers' access to the internet because they might download pornography and get bad influences online.

7. What do you recommend to improve services and productivity?
 - Would be nice to have smartphones to take notes and photos.
 - A device with GPS
 - o Expected to pick up clients from some locations. Google maps or GPS device would be nice if in unfamiliar with area.

APPENDIX N – FOCUS GROUP QUESTIONS

1. Name: _____

2. Job title: _____

3. Job Function (i.e. what tasks are you required to complete on a daily basis?)

4. Do you travel a lot between separate regional branches? (Explain)

5. What endpoint devices have been allocated to you by E.W. Tipping?

6. Do you use your own personal devices for work? (explain)

7. What is one part of your job that could be improved by the use of an endpoint device?

8. What endpoint devices or technology would be ideal for your job function in your opinion?
(please elaborate)

APPENDIX O – JOHN MCKENNA INTERVIEW

Interviewee: John McKenna

Interview date: April 15th, 2014

Position in organization: Empowerment Advocate

SUMMARY

John McKenna is an advocator for people with a disability and he represents the disabled community in the NDIA. John has been with EWTF for a long period of time that he is now a deputy chair for EWTF. John was able to provide us an overview of EWTF and the disability infrastructure of Australia from a person's with a disability perspective. He also provided us with information regarding how endpoint devices have impacted his life and how it could help EWTF. Additionally, he gave us insight on the common problems EWTF has and what he thinks could be done to solve these problems.

KEY SEARCH

- Summit in France about Disability Care
- Salon Sate Autonome
 - Health Expo / HT / GE
- Inclusion International for disability
- TAC
- TALE medicine

QUOTES

- “Good care need to not only shower the client but be able to help them connect with the world using technology” – John McKenna

Q&A

1. From your experience how is EWTF's history and where is it going in the future? How the NDIS does relates to EWTF?
 - It is like a school
 - People has more choices now with the NDIS. It is the people's money so they spend it however they want
 - Tipping needs now to think of what quality of staff they have, services offered, etc.

Future

- To be leaders in technology
- Continually support individuals and families

NDIS

- It is a fair system that sets a standard for disability throughout all of Australia.
- It does not affect Victoria immensely, but it does makes an impact on other states

- Victoria has had the lead for the NDIS
- One of the drivers for the NDIS was legislation purposes
- The NDIS looks for disability care organizations to be more socially inclusive rather than a medical model

2. What is your perspective on endpoint devices?

Client Access

- It's more of a PR. It is good for advertising, but it will be more of a feature rather than something that will be used.
- "I can't say of any specific ways to use devices, the best way to support each person is by doing an individual assessment and recommending a specific device per case. A device will be individual to each person's needs."
- "We need to be careful of the influences of devices on clients and know the limitations. A person with a disability could pick habits from using devices by browsing the internet and looking at videos for example".

Employees

- Depends on the job
- A lot of caregivers are international and not all of them are fluent in English, so the use of devices with built-in translate applications would be come in use.

Child protection

- They are the biggest risk
- Very specialized quality staff is needed
- **GREY AREA WITH CHILDREN:** We do not act as an educational organization, we just give them housing. Therefore, although a tablet could be beneficial, it is not in our area to provide such device. We could, but that raises the question, when do we start acting like an educational organization?

3. What are your recommendations?

- Make sure the disability doesn't create a digital divide
- Look into a partnership with an American disability organization from three different aspects
 - o Governance
 - o Operational
 - o Clients

APPENDIX P – DASSI INTERVIEW

Interviewee: Peter Batsakis

Interview date: April 15th, 2014

Position in organization: DASSI's CFO

SUMMARY

Peter Batsakis is the CFO of DASSI. Dassi is a non-profit organization that provides home-based care for people of all ages. This organization is very similar to EWTF and as identified by his EWTF's counterpart, James Digby, DASSI has a good network infrastructure and control of endpoint devices. Peter explained to us how his organization goes about endpoint devices, how they are distributed among employees, if there is any policy in place for endpoint devices, and more. He also explained what time sheeting and tracking system Dassi uses, as well as the services provided by their IT department.

Q&A

1. Could you provide us with a background of DASSI?
 - Their main focus is attendant care business
 - Disability service care organization
 - Provide support to people with any form of disability in their homes. From simple to complicated disabilities. 24/7 support.
 - No respite services or support accommodations.

2. How does the funding apply to DASSI?
 - In terms of funding, similar to what E.W. Tipping currently has
 - o DHS
 - o TAC
 - o Funding from community services organizations: hospitals, etc.

3. Is there any policy and framework in place for endpoint devices?
 - They have thought about implementing one, but there is no system currently in place
 - Refresh cycle for computers every 3 years
 - No set policies for Laptops

4. Who of your employees own endpoint devices?
 - Cannot afford the employees to have devices
 - It is too expensive for them and any current investment in it would bring them down financially speaking
 - Support workers don't have any devices
 - Only the staff in office and executive staff have devices
 - Funding is a major issue

5. Do DASSI's clients get access to endpoint devices?
 - There is no Carelink+ application that is supported by devices
 - No Carelink online. It goes through Citrix as well.
 - Ideally both clients and employees would have access to Carelink
 - o Roster can be seen by both, including changes, etc.

6. Is there a system in place for payroll?
 - In the process of implementing online application through payroll (electronic approval timesheet)
 - o ASP
 - o Employee is given a code
 - o That triggers the payroll system

7. Is there an electronic timesheet used at DASSI?
 - EZTracker
 - o How it works
 - Go into person's home
 - The employee has a code
 - Once in the house accesses the client's device and inputs the code
 - o Not everyone uses it
 - Involves technology and fines
 - Clients don't want people accessing their devices
 - o 35% is actively using it
 - It is not easier to use because of the exceptions (employees that are early or late)
 - o Weakness
 - Internal Control: better management of the system and enforcing the use of the timesheet

8. What do you use an endpoint device for?
 - Email and Banking
 - For commercial improvement? – Very useful, but not at the moment

9. What endpoint devices do employees use?
 - Give smartphones
 - We give iPads but they have not done a transition of the iPad through the software. It is more a benefit to give the iPad rather than use it as part of the work
 - It is a funding problem why they haven't given updated devices for everyone
 - A lot of staff also is not tech savvy.

10. What is the current endpoint device inventory at DASSI
 - 75% of devices are PC computers
 - 25% are laptops, especially for after hour employees
 - Around 40 devices total
 - o 4 iPads
 - o 10 smartphones
 - o 15 laptops
 - o Remaining PC computers

11. Can your IT department and infrastructure support BYOD?
 - Currently no because they only have 1 IT staff
 - If they were to have IT to support this, they need bigger resources
 - Will test such a system. Increment staff to 3-4 IT employees

12. Does Dassi has an intranet in place?
 - Yes but not advances. Very basic level of intranet.

13. What do you recommend in terms of endpoint devices?
 - Device needs to connect to Carelink
 - Device needs to be compatible with Microsoft products

APPENDIX Q – CONTENT ANALYSIS EXAMPLE

This is an example of the content analysis as explained in Chapter 3, section 3.7.

	A	B	C	D	E	F
1	Location	Person	Job Type	Statement Type	Topic	Statement
2	Carnegie	Vivian Potiris	Care System Manager	Job Function	Carelink	Business Process Engineer
3	Carnegie	Vivian Potiris	Care System Manager	Job Function	Carelink	Helping provide transition to "client first" use of carelink+
4	Carnegie	Vivian Potiris	Care System Manager	Background Information	Carelink	Roster system – list of support workers
5	Carnegie	Vivian Potiris	Care System Manager	Background Information	Carelink	Interface to payroll system
6	Carnegie	Vivian Potiris	Care System Manager	Background Information	Carelink	Invoice and financial statements to clients
7	Carnegie	Vivian Potiris	Care System Manager	Background Information	Carelink	Current department progress chart
8	Carnegie	Vivian Potiris	Care System Manager	Background Information	Carelink	First getting monthly statements out to clients
9	Carnegie	Vivian Potiris	Care System Manager	Recommendation	Endpoint Device Options	Tablets would really help getting information from clients
10	Carnegie	Sharon Strutt	Financial Manager	Clarifications	IT	IT manages the purchasing and managing of endpoint devices in the organization
11	Carnegie	Sharon Strutt	Financial Manager	Clarifications	IT	IT has its own budget as part of its contract. Last year money was starting to be set aside for upgrade of the technological devices. Not for this point in time but for the
12	Carnegie	Sharon Strutt	Financial Manager	Background Information	NDIS	NDIS
13	Carnegie	Sharon Strutt	Financial Manager	Background Information	NDIS	The NDIS does not give the funding to the provider
14	Carnegie	Matthew Casey	OHS Manager	Background Information	OHS	Matt's computer runs Windows 7
15	Carnegie	Matthew Casey	OHS Manager	Background Information	OHS	Rita's computer runs Windows XP
16	Carnegie	Matthew Casey	OHS Manager	Quote	Endpoint Device Options	"E.W. Tipping has a camera they provide for taking pictures when performing assessments but is very old and clunky." - Matt
17	Carnegie	Matthew Casey	OHS Manager	Background Information	Endpoint Device Options	They check email on their phone
18	Carnegie	Nalin Thamel	ICT	Recommendation	Endpoint Device Options	All devices need to be citrix capable
19	Carnegie	Nalin Thamel	ICT	Recommendation	Endpoint Device Options	High speed networking in houses
20	Carnegie	Nalin Thamel	ICT	Recommendation	Endpoint Device Options	Increase access to Carelink+ on the road
21	Carnegie	Nalin Thamel	ICT	Recommendation	Endpoint Device Options	Houses connecting to citrix
22	Carnegie	Nilan Thamel	ICT	Background Information	Current Endpoint Device Use	What is the biggest problem with the current infrastructure that prevents good connectivity?
23	Carnegie	Nilan Thamel	ICT	Background Information	Current Endpoint Device Use	Definitely the internet. It is something out of our reach.
24	Carnegie	Nilan Thamel	ICT	Background Information	Current Endpoint Device Use	What are the main problems that we need to focus our attention to?
25	Carnegie	Nilan Thamel	ICT	Background Information	Current Endpoint Device Use	The offices devices are outdated
26	Carnegie	Nilan Thamel	ICT	Background Information	Current Endpoint Device Use	The houses have internet and connectivity problems
27	Carnegie	Nilan Thamel	ICT	Background Information	Current Endpoint Device Use	If the device doesn't work what can we do to improve?

Figure 26 – Content Analysis Example