Management of Volunteers and Build Sites Using Technology

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Abstract

For our project we examined the current methods Habitat for Humanity MetroWest/Greater Worcester uses to track volunteer hours at build sites and manage project timelines. The group surveyed volunteers and interviewed managers from Habitat for Humanity and other organizations to learn about possible project management and volunteer tracking software. We found Cervis to be the most cost effective program that met all of Habitat's tracking needs. For project timeline management, the group developed a comprehensive Google Sheets Gantt chart system taking advantage of its simplicity, customization, sustainability, and cost.

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Executive Summary

Introduction/Background

An inadequacy in affordable housing is a growing concern in the United States. In Massachusetts, a state that ranks as the seventh most expensive state to live in, the concern for affordable living is high. In the Worcester area, low and middle income families face the burden of wages below the necessary cost of housing. Habitat for Humanity MetroWest/Greater Worcester (MWGW) is a growing organization dedicated to building affordable housing for families in need. The Habitat affiliate faces project and volunteer management challenges due to the growing size and complexity of the organization. The nonprofit requires the adoption of technology to manage project and volunteers more efficiently.

In terms of project management, application of software is key in organizing timelines that have become increasingly complex. There are a variety of software available to assist nonprofit project management, ranging from digital sticky notes to advanced timeline tracking systems (Mistry and Maes, 2016). Two notable software are LiquidPlanner and Microsoft Project due to their visual tracking, cloud-based capabilities, and user friendly interfaces.

In terms of volunteer management, software is necessary to ensure effective use of volunteers, who are one of the most valuable resources a nonprofit organization has access to (Ariza-Montes, 2014). In 2001, the volunteer workforce in America reached a value of $239 billion, providing valuable labor needed for nonprofits to operate (Finkelstein, 2006). Volunteer administrators can use technology to harness this resource of free labor. An organization can improve their operations and increase their overall impact by finding the right management system. We researched three potential systems: eRecruiter, Volgistics, and Volunteer Reporter to provide a better understanding of different available software.

The implementation of volunteer and project management software at Habitat for Humanity MWGW will assist the nonprofit in handling their unique complexities. This will strengthen Habitat's ability to fulfill their mission of combating the issue of affordable housing in its surrounding communities.

Methodology

We are a group of students from Worcester Polytechnic Institute (WPI) working on an Interactive Qualifying Project (IQP). The IQP is a school wide graduation requirement that involves applied research that connects science and technology with the social science aspects of engineering and its effect on society. The group completed this project at the Worcester Community Project Center (WCPC). This project helped Habitat for Humanity MetroWest/Greater Worcester improve communications and operations by piloting and recommending an information management system to more efficiently communicate build site timelines and track volunteer hours. We achieved the following objectives to complete this project:

- Objective 1: Assessed Habitat for Humanity's needs for volunteer/project management
- Objective 2: Assessed Habitat for Humanity's volunteer and staff access to and comfort with technology
- Objective 3: Identified management information technology used in other organizations
- Objective 4: Evaluated the suitability of identified software and techniques for Habitat for Humanity
- Objective 5: Piloted and evaluated the recommended software at build sites for Habitat for Humanity
- Objective 6: Developed & recommended a plan to implement the most effective information management technology systems

We conducted interviews with the Project and Volunteer Managers and Board of Directors from Habitat for Humanity MWGW, representatives from other Habitat for Humanity affiliates

and various nonprofit organizations. We analyzed this interview data to determine which project and volunteer management strategies Habitat currently uses. We compared and contrasted the programs for management to find the project and volunteer management programs that most effectively satisfied the needs of the organization. The group then tested and piloted the programs that included all the features the organization wanted. Then the group compiled our research, findings, developed recommendations, project and volunteer management deliverables, including how-to manuals and video tutorials in order to help Habitat to fully implement and sustain our recommendations.

Findings & Recommendations

Volunteer Management

Habitat for Humanity MWGW needed a user friendly and easy to update project and volunteer management program. Habitat has sufficient technology including smartphones and tablets to support cloud based volunteer and project management software. Through nine semi structured interviews with various organizations we discovered that there is a variety of software that could satisfy the volunteer management needs of Habitat, including: VolunteerHub, Volgistics and Cervis.

Habitat for Humanity MWGW was looking for a volunteer management program that satisfied the needs of the organization. Habitat required that this program be cloud based, have the ability to track volunteers, provide tech support, allow volunteers to register online and have the ability to track the number of volunteers. Each of these three programs were able to meet this listed criteria that can be seen in the chart below. The considerations for each software include the cost, the number of volunteers tracked, quality of tech support, and the free trial length and quality. Each of the programs were compared and extensively analyzed to determine which software had

the best of these features. When testing the programs, the volunteers responded best to the simplest program that did not have extra and confusing features. Thus we prioritized simplicity and ease of use when we analyzed the possible software.

Table 1: Volunteer Management Software Comparison

Volunteer Management Software			
Features	**Volunteer Hub**	**Volgistics**	**Cervis**
Type	Web-based	Web-based	Web-based
Price	$2000/ year	$195/month	$175/month or $1800/year
Track # of People	1000 volunteers	Price increases with volunteers	Unlimited
Kiosk	✓	×	✓
Back End Access	✓	✓	✓
Track Volunteer Hours	✓	✓	✓
Thank You Notes	✓	✓	✓
Confirmation Email	✓	✓	✓
Reminder Email	✓	✓	✓
Volunteer Ability to See Hours	✓	✓	✓
Instantnly Message Volunteers	✓	✓	✓
Online Application/Registration	✓	✓	✓
Transfer Data	N/A	$500	$100 start up $300 to import
Security and Privacy	✓	✓	✓
Tech Support	✓	×	✓
Free Trial	30 Days	30 Days	30 Days

There are also a variety of project management programs that provide excellent service for other organizations which include: Microsoft Project, Buildertrend, Google Sheets and Microsoft Excel. Using interview data and content analysis, we analyzed the pros and cons of both the volunteer and project management programs.

Project Management

Habitat for Humanity MWGW desired a project management software that satisfied the needs of the organization. Habitat required a program that was aesthetically pleasing, easy to use, cloud based and sustainable. We considered four programs for recommendation that are compared in the chart below. The group made additional considerations including the price, simplicity and maintenance. The program needed to be the right price but also needed to be easy to update. We tested and analyzed each of these four programs to determine which software was the most effective solution to the needs of Habitat for Humanity MWGW. When testing out the program with Habitat Project Manager, Mr. Bram, he responded best to the program that had the simplest

features and could be easily updated from a mobile phone (J. Bram, personal communication, March 24, 2016). We heavily considered these features when deciding on the best program.

Table 2: Project Management Software Comparison

Project Management Software Comparison				
Features	**Microsoft Project**	**Buildertrend**	**Google Sheets**	**Microsoft Excel**
Aesthetics	✓	✓	✓	✓
Price	$280	$99/ month	Free	Free
Ease of use	✓	×	✓	✓
Maintenance	×	×	✓	×
Flexibility	✓	✓	✓	✓
Cloud based	✓	✓	✓	×
Sustainability	×	×	✓	×
Simplicity	×	×	✓	✓

The group ultimately recommended the two programs that best satisfy Habitat for Humanity MWGW needs: Cervis and Google Sheets. We recommended these programs because they best met the criteria that Habitat was looking for, specifically aesthetics, price, ease of use, etc. Cervis had the best features for a fair price. Cervis outshined the other competitor programs in categories such as unlimited volunteers, ease of online registration, tech support and price. Google Sheets was the best option because it met all the needs of Habitat for free. This program was easy to customize to the Project Manager's needs and will be easy to maintain in the future (J. Bram, Personal Communication, March 24, 2016).

Conclusion

Habitat for Humanity MWGW is a growing nonprofit organization, having built 36 homes from 1985-2016 and is currently taking on about five home builds a year. They are continuing this expansion trend in the future and need to accommodate the growth of the organization. The group used surveys, interviews and participant observation to decide that this affiliate would greatly benefit from management information technology systems for their volunteer and project management. The group looked into several programs and eventually narrowed them down based

on specific needs of the affiliate. Finally, the group recommended Cervis & Google Sheets to address the needs of the Volunteer and Project Managers, respectively. The group created written how-to manuals and tutorial videos to accompany these recommendations to ensure sustainability of the programs in the future.

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1. Introduction

Access to affordable housing is a major concern facing many low-income and middle-income families across the United States. A house is considered "affordable" by the Federal Government if the cost of living requires no more than 30% of the family's income (Woo & Mangin, 2009). Affordable housing is critical not only for families and children, but for the communities themselves. Residential instability has been shown to have a negative effect on the overall health and education of children, as they are less likely to finish high school (CSSP, 2011). Neighborhoods impacted by high poverty rates lack a central support network for their residents. Unfortunately, affordable housing options have become more limited in the past years, as housing demands have increased and federal funding for programs providing these homes have been cut (Reamer, 1989).

Massachusetts is one state facing a critical need for affordable housing units. According to the 2014 *Out of Reach Report* of the National Low Income Housing Coalition, Massachusetts was ranked the 7th most expensive state to live in ("Homelessness in Worcester County", 2015). In addition, New England has one of the lowest rates of housing production in comparison to other regions of the United States. According to the Federal Government's expectation of "affordable" housing, low-income families in New England spend about 67% of their income on living expenses, which is more than double the threshold value (Sasser et al., 2005). Middle income families in Massachusetts are also being affected by the lack of affordable housing options. They are only making 65%-80% of the income they need to purchase a suitable home in the area (Sasser et al., 2005). Fortunately for residents in the Worcester area, Habitat for Humanity MetroWest/Greater Worcester is currently joining the affordable housing effort to help residents

in 42 cities and towns of central Massachusetts (About Habitat, 2012). Habitat mainly relies on their large volunteer workforce to help complete the houses in a timely and efficient manner.

From 2013 until 2016, Habitat for Humanity (HFH) MetroWest/Greater Worcester has grown from building just one home per year to five. They have served 64 families through new construction and home repairs and built 42 homes between 1985 and 2015 (About Habitat, 2016). Habitat is serving more families and communities in need than ever before but the management of build projects and the tracking of volunteers has become more complex. Given the anticipated increase in build projects and volunteer numbers, HFH needs a volunteer and project management system that can accommodate the growth.

Habitat for Humanity looked to integrate a management information system to enhance the management and operations of the build site timelines and the planning of future home construction. This organization had a great opportunity to improve efficiency and sustainability by introducing a management information system. This project helped Habitat for Humanity MetroWest/Greater Worcester to more efficiently communicate build site timelines between the Site Managers, Board of Directors and the Volunteer Coordinator by introducing a program that assists in managing information. This project also assisted Habitat for Humanity MWGW to more efficiently track volunteer hours at build sites by creating a technological volunteer tracking system.

In order to assess Habitat for Humanity's needs for volunteer and project management, we conducted interviews and immersed ourselves into the organization through participant observation. The group evaluated Habitat for Humanity MWGW's current technological resources and assessed available technology used in other nonprofit organizations. We weighed the pros and cons of each software and piloted the software that suited their needs. By synthesizing the results,

we recommended a software to Habitat for Humanity MWGW in order to improve their current methods of managing build sites and tracking volunteers.

In the next chapter, Chapter 2, we discuss the background of the issue of affordable housing, Habitat for Humanity's role in combating affordable housing, and the introduction of technology to aid in volunteer and project management of nonprofits. In Chapter 3, we address the methodology of the project, outlining the steps we took to complete our goal of improving communications and operations. We accomplished this through research, piloting, developing, and recommending information management systems to more efficiently communicate build site timelines and track volunteer hours at Habitat for Humanity MWGW. In Chapter 4, we discuss the findings and recommendations made through our information gathered from our methodology. In Chapter 5, we conclude the overall methods, findings, and recommendations of the project.

2. Background

Since 2008, access to affordable housing has become more difficult for low income families in Worcester, Massachusetts to obtain. In section 2.1 we discuss the affordable housing issue in Massachusetts. A stable home provides a feeling of accomplishment, safety and security for families which is essential for the growth and maturity of children. Since 2012, the Northeastern United States has experienced a drastic increase in housing costs and an overwhelming amount of government cutbacks. We examine these challenges in section 2.2. Nonprofit organizations and state level housing funds are trying to lessen the burden on low income families by helping them to find housing. In section 2.3, we discuss Habitat for Humanity (HFH), which is a global nonprofit organization that assists families in need with affordable housing. This nonprofit organization, like many others, relies on the work of volunteers.

As volunteer forces grow, organizations need a streamlined method for managing them. We explore the integration of technology in nonprofit management in section 2.4. The increased number of HFH build sites occurring simultaneously with the increased number of volunteers requires Habitat to investigate new streamlined management tracking systems. We discuss project management in section 2.5 and conclude by exploring volunteer management and tracking methods in section 2.6.

2.1. Affordable Housing

The shortage of affordable housing is a major concern throughout the United States. The Federal Government, alongside nonprofit organizations, are addressing this issue in several ways. In the United States, the US Department of Housing and Urban Development (HUD) determines which families qualify to live in various housing developments by using Median Family Income

(MFI), which varies across different regions of the country. The "affordable rent burden" is the threshold required for housing to be considered "affordable" and is set at no more than 30% of a family's income (Woo & Mangin, 2009). The following sections will discuss the strained housing affordability in the United States, and specifically in Worcester, Massachusetts.

2.1.1. The Need for Affordable Housing in the United States

Having a stable home environment is crucial for the wellbeing of children, families and the community itself. According to Sheila Crowley, the President and CEO of the National Low Income Housing Coalition, residential instability has been associated with a greater risk of illness, malnourishment and abuse, vulnerability to mental health problems, such as depression, as well as underachievement in school (Crowley, 2003). A study by the Center for the Study of Social Policy found that neighborhoods with high poverty rates have low economic prospects and usually lack the support, services and opportunities their residents need to reach their full potential. Affordable housing can help create strong, stable communities that are able to provide services such as quality health care centers, schools, community centers, grocery stores and libraries for their residents (CSSP, 2011).

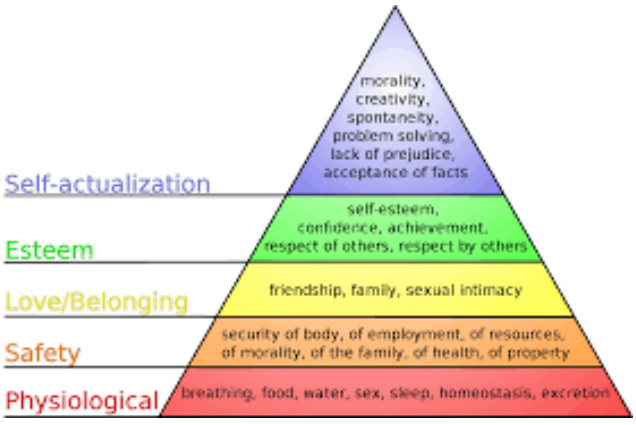


Figure 1: Maslow's Hierarchy of Needs

Figure 1 represents the various essential needs of human beings. The base of the pyramid contains essential needs. Once these needs are fulfilled, the individual is able to rise to other levels of the pyramid (Maslow, 1943). When families do not have to worry about decent housing, they have more time to focus on medical care, preparing healthy meals, transportation and education. All humans should have access to affordable housing to be able to adequately provide for their families.

From 2010 to 2011, the number of low income families rose from 10.2 million to 10.4 million in the United States (Population Reference Bureau, 2013). As a result, the demand for affordable housing has increased. A study conducted in 2005 by Alicia Sasser, the Associate Director of Dukakis Center for Urban and Regional Policy, discovered that the two most prominent reasons for shortage of affordable housing include an increased housing demand and a limited supply of housing. Cost of housing is escalating and an insufficient source of affordable housing is encumbering low income Americans.

2.1.2. Strained Housing Affordability in Worcester, Massachusetts

Worcester, Massachusetts is the second largest city in New England with a population of 182,544 in 2013 ("Worcester, Massachusetts"). Massachusetts was ranked the 7th most expensive state to live in, according to the 2014 *Out of Reach Report* by the National Low Income Housing Coalition ("Homelessness in Worcester County", 2015). New England is also home to many states that rank at the bottom for housing production rate, causing a severe housing shortage in this area.

The affordable housing issue is especially prominent in Worcester with the unemployment rate reaching 7.5% as of June 2014, higher than that of the state and country at the time ("Worcester, Massachusetts"). In Worcester, low income workers face wages that are inadequate to support sufficient living conditions.

Figure 2: Average Worker Salary versus Need for Housing

In the Worcester area, the average worker makes $11.83 per hour, which does not reflect the amount needed to provide shelter. Workers would need to make at least $18.21 per hour in order to afford the costs of the average two-bedroom apartment which can be seen in Figure 2 ("Homelessness in Worcester County", 2015). Access to affordable housing is not only a problem for low-income families but middle-income families as well. In Massachusetts, 29% of middle income families cannot afford their homes according to the affordable rent burden (Sasser et al., 2005). These homeowners only earned 65%-80% of the income needed to purchase a median-priced house in New England (Sasser et al., 2005). As a result, many Worcester citizens turn to affordable housing programs to provide appropriate shelter for themselves and their family.

2.2. Policy and Responses: Affordable Housing Programs

Governments at all levels across the United States are focusing their efforts on increasing availability of affordable housing for families in need. The government usually takes one of two approaches: (1) increasing the ability of families to rent or purchase a home; or (2) increasing the supply of affordable units. The first approach gives subsidies directly to families so they can afford their housing. The second approach uses tax incentives, such as low-interest loans or other types

of subsidies, to encourage the landlords or housing developers to provide affordable housing for families.

The Federal Government's effort to create affordable housing developments has changed over the past 100 years. From the 1930's until 1974, the Federal Government created several programs, such as the Reconstruction Finance Corporation and passed laws in an effort to provide affordable housing throughout the country (Husock, 2009). These programs and laws gave loans and grants to companies, local governments and local housing agencies in order to help build and maintain affordable housing units. The government began to encourage public-private partnerships to provide affordable housing during the 1970's due to major vandalism issues they were facing. The government also started giving subsidies, referred to as Section 8 vouchers, to eligible families to find their own housing from private landlords (Woo & Mangin, 2009).

Since 1981 federal funding for low-income housing has been cut by 76% from over $33 billion to under $8 billion (Reamer, 1989). One specific instance where federal funding was cut was from The Massachusetts Affordable Housing Trust Fund (AHTF). This fund was originally designed to provide resources to create affordable housing throughout the state for households with incomes less than 110% of median income ("Massachusetts AHTF Guidelines", 2006). Affordable housing programs have decreased in Massachusetts since 2003 when the state's general fund was cut. However, nonprofit organizations, such as Habitat for Humanity, are working to increase availability of affordable housing.

2.3. Habitat for Humanity

Habitat for Humanity currently has over one million volunteers who donate time and money to supplying affordable housing (Habitat for Humanity Annual Report, 2013). The organization is a worldwide, nonprofit Christian housing ministry. It was founded in 1976 and has

become a leader in construction and repair of low income housing (About Habitat, 2012). The mission of Habitat for Humanity is to build "a world where everyone has a decent place to live. Seeking to put God's love into action, Habitat brings people together to build homes, communities, and hope" (Habitat for Humanity Annual Report, 2013: 12). In order to accomplish this mission, Habitat focuses on shelter, advocating for affordable housing, upholding dignity and hope, and supporting sustainable and transformational development (Habitat for Humanity Annual Report, 2013). Habitat has been successful at implementing and accomplishing their goals.

According to the Habitat for Humanity annual report, in 2013 Habitat aided 124,946 construction projects worldwide, 9,874 of which were completed in the United States and Canada. Habitat built 3,588 new homes in the US and Canada in 2013. These homes provide stability for low income families while building hope for the family and community receiving aid. A daughter of a family who received a new home in Nicaragua said, "I am very happy in my new home, not only because now I have a safe place to live, but because now I realize that I can accomplish great things" (Habitat for Humanity Annual Report, 2013: 18). The impact these homes have on families reach far beyond a stable place to live. Habitat also offers programs to revitalize entire neighborhoods scaling their mission beyond single homes. Over the past 40 years, Habitat has continued to grow and expand worldwide, as illustrated by Figure 3, below.

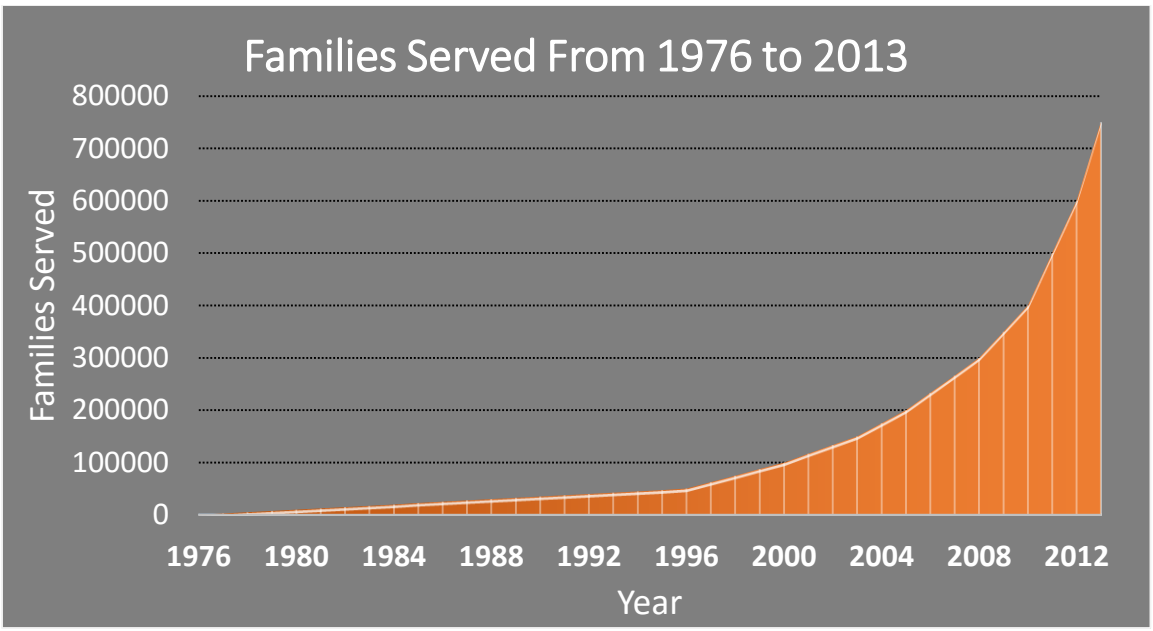


Figure 3: Habitat for Humanity Families Served from 1976 to 2013 according to the Habitat for Humanity Annual Report in 2013

The trend has been exponential, illustrating the potential impact that Habitat and its affiliates could have on families in need of affordable housing (Habitat for Humanity Annual Report, 2013). Habitat for Humanity's affiliate MetroWest/Greater Worcester is among these affiliates that are having a growing impact.

2.3.1. The Current State of Habitat for Humanity MetroWest/Greater Worcester

Habitat for Humanity MetroWest/Greater Worcester (MWGW) has followed the same expansion trend as the overall organization. The affiliate currently serves the housing needs of 42 cities and towns in Central Massachusetts (About Habitat, 2012). The headquarters of this sector is located in Worcester, Massachusetts – a city in demand for low income housing projects. The organization began in 1985 by a local activist who identified the affordable housing problems in the area. Habitat MWGW has completed 36 homes since 1985. This equates to about one home every year for the past thirty years. However, this year alone, Habitat MWGW is working on five

building projects; the most in history (About Habitat, 2012). This rapid expansion has created new requirements to accommodate the growth of the organization.

Volunteers are the work force of a nonprofit organization. The two forms of volunteers are formal and informal. Formal volunteers give a specified amount of time to a nonprofit, while informal volunteers participate on a less consistent basis (Brudney & Gazley, 2006). Habitat for Humanity is mostly composed of formal volunteers but has some informal volunteers (About Habitat, 2012). Formal volunteers that donate their time on a regular basis are the most important resource to nonprofits because they drive the efforts and provide valuable free labor for the organization.

The major challenge for nonprofit organizations is maintaining a constant stream of volunteers. This is especially important considering recent trends of Americans volunteering less hours each week on average. Inconsistent volunteering results in a larger volunteer base; however, individuals serve less each year (Brudney & Gazley, 2006). Habitat relies on the regular volunteers that serve multiple times a week. Studies link organizational support for volunteer administration to increases in volunteer involvement. This demonstrates that the better volunteer management an organization has, the higher quality services and increased involvement the organization will receive (Brudney & Gazley, 2006). Volunteer management and tracking are major concerns at Habitat for Humanity MetroWest/Greater Worcester. We explore techniques and technologies to provide more effective management of volunteers in section 2.6. In order to fully understand the challenges of MWGW, nonprofit management as a whole must be analyzed.

2.4. Nonprofit Organization Management

Nonprofit organizations are companies that reinvest all profits back into the charitable services they provide to the community (Hackler, 2011). Nonprofit organizations have

management obstacles that many for-profit companies do not face (Anheier, 2000). This section discusses the complexities of managing nonprofit organizations and considers how the implementation of technology can help with the growth of a nonprofit.

2.4.1. Management of Nonprofit Organizations

The management of nonprofit organizations requires dealing with an additional level of complexity. Nonprofit organizations are complex due to their environment and internal components (Anheier, 2000). The complications in the environment of these organizations include managing diverse constituencies, public payments, stakeholders, revenue sources that include donations and charges as well as grants and contracts. When examining nonprofits, one will notice there is an array of organizations that differ substantially in populations and services. These differences in missions, size, and scope influence management issues (Oster, 1995). Nonprofits must also take into consideration the environment of the government and businesses surrounding it. The need for a nonprofit's activity relies on the severity of the issue and the amount in which the government is involved in resolving it. Nonprofits not only compete with the government, but they must also contend with other active nonprofits (Weisbrod, 2000). For-profit companies that do private work in similar sectors bring competition as well. This heavy level of competition adds complexity to the expanding nonprofit groups (Tuckman, 1998). The organization can become more complicated due to internal components that include staff, volunteers, and clients.

Gomez and Zimmerman established a management model for nonprofits that contains multiple dimensions (Anheier, 2000). The first is the *holistic conception* of the organization which emphasizes the relationship between the organization and its diverse environment. The *normative dimension* of management includes the struggle between being economically viable as an organization while still emphasizing the importance of its values. Lastly, the *strategic-*

developmental dimension shows that nonprofit organizations are constantly evolving, causing greater complexity over time (Anheier, 2000). A nonprofit's evolution includes the incorporation of technology and information management to improve efficiency and deal with these high levels of complexity and operations (Tuckman, 1998). This model is a guiding model for nonprofit management.

2.4.2. Adopting Technology and Information Management

Nonprofit organizations have integrated technology and information management techniques to improve volunteer recruitment, fundraising, and tracking of internal information. Nonprofit organizations may struggle with implementing such strategies due to lack of budget or a higher complexity in organizational operations as discussed in section 2.4.1 (Dantec & Edwards, 2008). However, integrating technology and information management techniques can successfully improve nonprofit operations. Budgets for Information and Communication technology (ICT), technology that manages an organization's information and enhances communication, are often limited at nonprofit organizations. This generally leads to ICT being underutilized in the sector. A case study of two similar nonprofit organizations illustrated this underutilization and the effects it had on the two organizations.

One organization, *Center A,* lacked internal cohesion from within because technology was not used to link communications between individuals on each level of the organization. This caused several miscommunications and breakdowns inside the organization. However, the second nonprofit, *Center B,* utilized their communication technology. Levels of the organization worked together effectively with technology linking their communication and execution of tasks. Digital forums were used to communicate with and organize the efforts of the volunteers. There were less break downs with this organization and the ability to coordinate schedules and share essential

information improved the performance of the group. Clients were aided more effectively, improving the overall impact of the organization (Dantec & Edwards, 2008).

The balance of technology is key in a nonprofit. Excessive technology dehumanizes their processes by automating a lot of their activities (Iverson & Burkart, 2007). In an organization that thrives on emotional support, dehumanizing the efforts can be detrimental to a nonprofit organization. It is vital that the organization only use technology to meet the needs of the client and aid in the efficiency of the nonprofit. The technology used widely in for-profit companies fail to consider that value for a nonprofit comes in the form of achievement in social purposes, not necessarily monetary profit. For-profit technologies fail to account for the complications introduced by the nonprofit's revenue source being grants and donations rather than customer purchases or services (Moore, 2000). These shortcomings must be addressed to tailor and implement technology efficiently in nonprofits.

Habitat for Humanity MetroWest/Greater Worcester has a need for technology to meet their expanding organization. This implementation of technology needs to encompass volunteer tracking which will be vital in the upcoming years as grants become more complicated with requirements of service. Many nonprofits also lack the staffing and management resources to undertake multiple affordable housing projects at a time (Terantello & Seymour, 1998). The challenge for Habitat for Humanity MWGW is to overcome this typical lack of resources and effectively utilize project and volunteer management techniques in order to support the rapidly expanding organization. Thus, leading to an impact on the community far greater than was possible in the past.

2.5. Project Management

Project management refers to the management of discrete project initiatives, such as house builds for Habitat for Humanity. Project management in nonprofit organizations is a complex activity that requires the balance of personal relationships and technology in the modern world. Software such as Microsoft Project and LiquidPlanner assist project and construction managers in more efficient communication with stakeholders.

2.5.1. Project Management in Nonprofit Organizations

The project manager is the leader of the project and can help strengthen their team through good leadership practices (Lock, 1969). Effective communication is essential to be a great project manager (Murphy, 2013). A project manager always needs a strong team to achieve the task at hand, which only occurs with returned managerial support. A well-supported staff will ensure that any conflicts that arise during operations are quickly and fairly resolved (Lock, 2013). Conflicts that could arise may be due to the added complexities that come with a nonprofit. Nonprofit organizations deal with sensitive issues that produce differing, strong opinions from those volunteering and others heavily involved. Unlike in a private for-profit organization, money and financial power are not everything (Adams, 2010). As these issues make project management in a nonprofit organization increasingly complex, project managers are realizing that technology could be an effective way to manage their organizations (Murphy, 2013).

2.5.2. Technology Usage in Project Management

The integration of technology in project management in nonprofit organizations has become essential. Many nonprofit organizations have experienced growth due to technological contributions. There is a huge untapped potential for nonprofits to use technology to reduce the time and cost of operations (Citrix Helps Nonprofits, 2014). The Pace School is a nonprofit

organization that serves special education students. They conducted a case study in 2004 to evaluate their use of technology when managing their projects. They discovered that the integration of technology has increased the students' productivity because students are able to replay lectures and use other online tools. The school is also able to track trends online to ensure students are making notable progress (Wormer, 2004). Technology allows organizations to spend more time making life altering contributions to community members and less time worrying about the organization of project tasks. The integration of the cloud and other mobile technologies can benefit nonprofit organizations, but only about 20% of nonprofits in the United States use technology to record project management data. A recent study by McKinsey and Company, which is regarded as one of the most prestigious management consulting companies in the world, stated that companies typically undergo a 20-25% increase in productivity when using modern software programs for project management (Citrix Helps Nonprofits, 2014). This recent increase in technology usage in organizations has proven to be very effective in various industries, especially in construction management.

2.5.3. Project Management Technology

The application of this software is key in the construction management industry because timelines can become increasingly complex (Lock, 2013). However, just like in any other organization, there requires a balance of technology and interpersonal relationships in the construction management industry (Applebaum, 1982). There are a variety of software programs available to assist nonprofit organizations with project management that ranges from digital sticky notes to advanced timeline tracking software.

There are various project management strategies that vary with effectiveness however, three of the most popular programs were Quickies, LiquidPlanner and Microsoft Project. Quickies

are digital sticky notes that merge the paper and digital world by converting handwritten sticky notes to digital copies. This software helps to enrich the conventional sticky note by managing lists, documents, reminders and information more effectively (Mistry and Maes, 2016).

Microsoft Project and LiquidPlanner offer very similar features, however, they are more robust programs. These programs offer the ability to manage far more volunteers and perform more activities. Both programs are cloud based solutions and offer the user the ability to update timelines and tasks in real time (Rapoza, 2008). In a case study involving Inflow, a marketing based company located in Colorado, the CFO decided that the company needed to manage their projects more efficiently and communicate more effectively. Workers' hours were being entered late and inaccurately and spreadsheets were not getting the job done. After running multiple pilots, the company chose LiquidPlanner due to its forecasting feature that helped to predict deadlines and delays (Inbound Marketing Agency, 2014). The software was able to tolerate uncertainty and shifting timelines in real world projects. Very similar to LiquidPlanner, is Microsoft Project which is also a cloud based solution and can be easily updated when timelines are changing. Microsoft Project is known as one of the most user friendly project management software tools on the market (Using Microsoft Office Project, 2007). Microsoft Project offers a variety of visual charts and tables, however, it is still user friendly.

The Hilti Company, a construction manufacturer, realized that they needed to integrate project management software into the organization to increase productivity. After comparing a variety of programs, they decided to use Microsoft Project because it is a cloud based solution managed multiple projects (Construction Manufacturer Employs, 2013). Microsoft Project was a perfect fit for the Hilti Company and could assist nearly every type of organization in creating

more effective communication and increased productivity (Rose, 1988). Shown in Table 3 below, is a chart that compares the features of each project management program.

Table 3: Project Management Comparison Chart

Project Management Comparison Chart			
Features	**Microsoft Project**	**LiquidPlanner**	**Quickies**
Visual Tracking Feature	✓	✓	✗
Manage more than one Project	✓	✓	✓
Cloud Based	✓	✓	✓
User Friendly	✓	✓	✓
App	✓	✗	✗
Simplicity	✗	✗	✓
Sustainable	✓	✓	✓

2.6. Volunteer Management

2.6.1. Importance of Volunteer Force

Americans are volunteering in record numbers and represent an enormous part of the workforce. In 2001, 44% of adults volunteered, equivalent to over 9 million full time employees at a value of $239 billion, according to the Independent Sector, a networking coalition for nonprofit organizations. Many organizations, particularly the nonprofit sector, could not effectively operate without this support (Finkelstein, 2006). These new opportunities have required additional management and coordination to ensure effectiveness and success (Connors, 2011).

2.6.2. Issues with Poor Volunteer Management

Poor volunteer management in nonprofit organizations results in inefficiency and wasted resources. In a previous research project, students from Worcester Polytechnic Institute organized and maintained useful information for the Literacy Volunteers of Greater Worcester (LVGW). The

project's main goal was to make the system of information easy-to-use and manageable. The LVGW educates people who are learning English as a second language, which requires management of many individuals such as volunteer tutors and clients. The program must submit information to Literacy Volunteers of America to track the progress and success of the nonprofit organization. The student researchers found that LVGW had shown very little progress. Constantly locating files and recopying information by hand wasted a large amount of time. The redundancies made the organization run unproductively and wastefully (Mackey et al., 2006).

Nonprofit organizations rely heavily on their volunteers, however, the administrators cannot always utilize them as efficiently as they would like. In 2006, 61.2 million volunteers donated their time to nonprofits across the country; unfortunately, 21.7 million of them did not return the following year (Eisner et al, 2009). New approaches need to be looked at in order to manage volunteers and volunteer data more accurately and sustain the volunteers through the years. According to Robert D. Eisner, an American author and professor of economics at Northwestern University, the major issue nonprofits face is that they do not always view their volunteers as strategic assets to the organization and do not take full advantage of all that the volunteers can offer (Eisner et al., 2009).

2.6.3. Strategies to Successful Volunteer Management Using Technology

As society changes and technology evolves, nonprofit organizations must embrace new strategies and approaches to meet the needs of their volunteers. In the past, Volunteer Coordinators have had responsibilities including: identification, selection, orientation, training, utilization, recognition and evaluation of the volunteer group. These duties are known as ISOTURE (Connor, 2011). The value of this data to a nonprofit organization is higher than ever (Hagen, 2006).

However, collecting, maintaining and accessing this data can be challenging. The way nonprofit organizations manage, direct and utilize their volunteer resources truly sets them apart from other organizations. Volunteer organizations are becoming experts at managing people to ensure their goals are met (West et al., 2008).

The implementation of any new technology is a complex, dynamic process that involves a variety of people and multiple steps. Over the past decade, researchers have developed theories focused on explaining the factors associated with the acceptance, use and rejection of new technologies.

Volunteer resource managers and their volunteer management teams are responsible for many tasks that may be time consuming and inefficient when done "traditionally" using paper files and manual entry. Technology use can be essential and vital to volunteer administrations. (Ariza-Montes, 2014). Jayne Cravens and Rob Jackson, experts in the field of nonprofit management, conducted a survey in 2012 regarding Volunteer Coordinators in nonprofit organizations to collect information about their technology use. According to their results, the most commonly used tool was spreadsheets, including Microsoft Excel and Google Sheets. The most commonly used software created explicitly for volunteer organizations was Volgistics (Cravens and Jackson, 2012). Volunteer management software can be classified into two categories. The first category is comprised of *standalone systems*, which are designed specifically for the management of volunteers. The other category contains *consolidated systems*, which consists of software that has capability of tracking volunteers, donors and other groups in the same database. Each system exhibits advantages and disadvantages (Ariza-Montes, 2014). In a case study conducted in May 2011 by Idealware, the contributors researched different volunteer management software. This study compares and contrasts the strengths and weaknesses of three standalone volunteer

management systems: eRecruiter/eCoordinator, Volgistics and Volunteer Reporter. Table 4 below summarizes the comparisons made in this case study.

Table 4: Volunteer Management Software Chart

Volunteer Management Software

	eRecruiter/eCoordinator	Volgistics	Volunteer Reporter
Type	software	web-based	software
Price	$5,500 first year/$2,500 succeding years	$195/month	$695/copy
Track # of People	unlimited	price increases with more volunteers	unlimited
Kiosk	✘	✘	✔ $500
Back end acess	✔	✔	✔
Track Volunteer Hours	✔	✔	✔
Thank You Notes	✘	✔	✘
Confirmation Email	✔	✔	✔
Reminder Email	✔	✔	✔
Volunteer Ablility to See Hours	✘	✔	✘
Instantly Message Volunteers	✔	✔	✔
Online Application/Registration	✔	✔	✔
Transfer Data	✘	✔ $500	✔ $1000
Security and Privacy	✔	✔	✔
Tech Support	✔	✘	✔ $300/year
Free Trial	can request a demo	30 days	30 days

Nonprofit organizations rely on volunteers to achieve their mission and serve the community. Finding the right volunteer management system can help an organization to improve efficiency, move effectively and recognize volunteers.

2.7. Conclusion

Volunteers are essential for organizations like Habitat for Humanity MWGW. Habitat for Humanity helps combat the issue of affordable housing in communities and needs the assistance of volunteers to fulfill their mission. Therefore, our project identified and implemented helpful strategies to increase the efficiency of their volunteer tracking systems and build site communications. We will discuss our methodological approach to tackling this project in the following chapter.

3. Methodology

This project helped Habitat for Humanity MetroWest/Greater Worcester improve communications and operations by piloting and recommending an information management system to more efficiently communicate build site timelines and track volunteer hours. We achieved the following objectives to complete this project:

- Objective 1: Assessed Habitat for Humanity's needs for volunteer/project management
- Objective 2: Assessed Habitat for Humanity's volunteer and staff access to and comfort with technology
- Objective 3: Identified management information technology used in other organizations
- Objective 4: Evaluated the suitability of identified software and techniques for Habitat for Humanity
- Objective 5: Piloted and evaluated the recommended software at build sites for Habitat for Humanity
- Objective 6: Developed & recommended a plan to implement the most effective information management technology systems

A group of four students from Worcester Polytechnic Institute's Worcester Community Project Center worked on this project from March 14, 2016 - May 3, 2016. We conducted research at three different Massachusetts build sites for Habitat for Humanity: Wayland, Worcester and Auburn, and analyzed our data at the Worcester Community Project Center space in downtown Worcester. We discuss each objective in more detail below. We include an overview of our project timeline in Appendix F.

Objective 1: Assessed Habitat for Humanity's Needs for Volunteer/Project Management

The first step of the project was to assess the current status of how Habitat for Humanity MetroWest/Greater Worcester (Habitat or HFH) tracks volunteers at build sites and manages their project timelines. In order to accomplish this objective we conducted interviews with Habitat employees, distributed surveys to Habitat volunteers and conducted participant observation at the Wayland and Worcester build sites. We then compiled our data and analyzed it to identify Habitat's most important priorities for a management system.

We conducted formal interviews with Ms. Molly Pietrantonio, the Volunteer Coordinator for Habitat for Humanity MWGW, and Mr. Jon Bram, the Project Manager for HFH MWGW. These formal interview questions can be seen in appendix C and D respectively. We used the questions in these interviews to determine the amount of volunteers being managed, the volunteer tracking requirements that must be met, timeline requirements for the organization, grant requirements that may influence these decisions, and general concerns for the two management systems. We found this information to be important because implementation of a program can significantly improve the communication between managers and onsite workers.

The group also conducted semi-formal interviews with Mr. Tim Firment, Executive Director of Habitat for Humanity MetroWest/Greater Worcester and Ms. Deborah Huegel, Director of Development for Habitat. We used these interviews to determine Habitat's upper-management's opinion on the needs of the two systems. This semi-structured interview allowed for the collection of information desired by our group. It also provided the opportunity to our interviewees, Mr. Tim Firment and Ms. Deborah Huegel, to discuss other information they believed to be important for our project and was outside of our structured questions (Berg, 2001).

We wanted to consult the volunteers on any technological changes to the current tracking system as they are going to be the ones using it. We distributed surveys to 13 volunteers at two different build sites (Wayland and Worcester). The survey took five minutes to complete. We analyzed these surveys for trends in volunteers' needs and wants for project and volunteer management. This included volunteer opinions on the current system and thoughts on a potential new system. See Appendix B for the entire survey. We included a sample of the survey questions below in Table 5. We hoped to gain buy-in from volunteers by consulting them in the initial stages of the project. This buy-in is necessary for Habitat to be able to fully implement a new volunteer management system. The more cooperative the volunteers are, the more sustainable the solution becomes.

Table 5: Sample Interview and Survey Questions

Stake Holder	Method	Key Research Questions
Volunteers	Surveys	What are some of the issues with the current tracking system? What are some of the things you like about the system? What could help make your check in process more convenient?
Project Manager	Interviews	What are your likes and dislikes about the current tracking system? What issues did you have with Microsoft Project during the first trial? What is the most important parameter we should be considering when deciding which programs to pilot?
Volunteer Coordinator	Interviews	What requirements do you have for volunteer tracking? What are you likes and dislikes about the current tracking system? What are the top priorities for a new tracking system?
Executive Managers	Interviews	What do you like about the current project and volunteer management systems? What are your top priorities for new tracking systems? What level of communication is needed for both systems?
Interviews Financial Director	Interviews	What is the current technological budget? What would the organization be willing to spend on new software?

The group engaged in participant observation two days in the first two weeks of the project in the form of an immersion week. Immersion week refers to a period in which we volunteered at two separate Habitat build sites, receiving the experience of a typical Habitat for Humanity volunteer. We used participant observation to expand our understanding of build site daily operations. We also received insight informally from volunteers and Site Directors that may not come through fully in a survey.

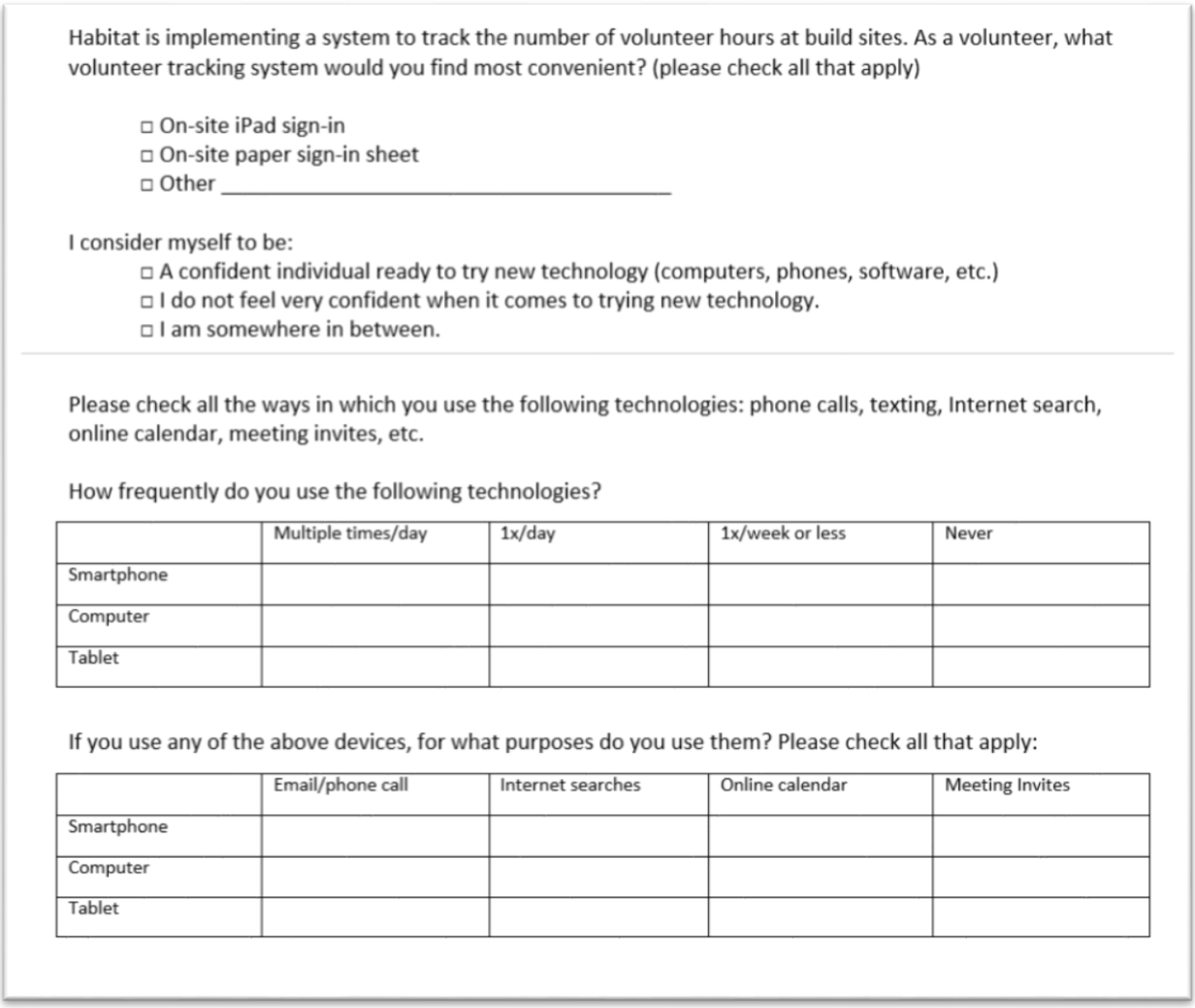
At the end of the immersion week we compiled data from the interviews, observation and surveys and analyzed it searching for trends and themes. Using these themes, we created a detailed assessment of Habitat's needs for volunteer and project management. The group sorted responses from each interview to understand the themes among the different groups. We created charts of the data received from the questionnaire responses. The group used data collected from participant observations qualitatively to understand commonalities among project leaders onsite and volunteer opinions onsite.

Objective 2: Assessed Habitat for Humanity's Volunteer and Staff Access to and Comfort with Technology

Once the group ascertained Habitat for Humanity's needs in a management system, we evaluated Habitat's current technological resources and identified any resources that could be harnessed for a management system.

We first identified resources available to volunteers. We used the survey (discussed in objective 1) to request information about any technological resources, including home computers, laptops, and smartphones that volunteers have access to off-site. The survey questions also assessed the volunteers' level of comfort with different technologies, as seen in Figure 4. Understanding both the volunteer's access to technology and level of comfort with technology

allowed us a fuller understanding of what resources Habitat can readily take advantage of and what technologies may prove to be a challenge to implement. This gave us a comprehensive understanding of what technologies the frontend, volunteers, could utilize effectively.



Habitat is implementing a system to track the number of volunteer hours at build sites. As a volunteer, what volunteer tracking system would you find most convenient? (please check all that apply)

- □ On-site iPad sign-in
- □ On-site paper sign-in sheet
- □ Other _____

I consider myself to be:

- □ A confident individual ready to try new technology (computers, phones, software, etc.)
- □ I do not feel very confident when it comes to trying new technology.
- □ I am somewhere in between.

Please check all the ways in which you use the following technologies: phone calls, texting, Internet search, online calendar, meeting invites, etc.

How frequently do you use the following technologies?

	Multiple times/day	1x/day	1x/week or less	Never
Smartphone				
Computer				
Tablet				

If you use any of the above devices, for what purposes do you use them? Please check all that apply:

	Email/phone call	Internet searches	Online calendar	Meeting Invites
Smartphone				
Computer				
Tablet				

Figure 4: Habitat for Humanity MWGW Volunteer Survey Excerpt

We then explored the resources at the offices and on the build sites using the information collected during the interviews conducted with Ms. Pietrantonio and Mr. Bram (discussed in objective 1). In these interviews we sought information about what technology Habitat already owns, what Habitat has used in the past and what prior experience the staff and executives had

with different technologies. This provided a grasp of what technologies the backend, Habitat for Humanity staff, had comfort with and access to for proficient volunteer and project management.

Once we completed a technological assessment of the available build site, office and volunteer resources, we interviewed both Mr. Terry McGoldrick, Habitat's Finance Director, and Molly Pietrantonio, Habitat's Volunteer Coordinator, to explore the breadth of existing technology resources and funding available for new technology. We compiled all of the information gathered from surveys, interviews and participant observation into an easy to read document listing all the technological resources available to Habitat, see Appendix G.

Objective 3: Identified Management Information Technologies Used in Other Organizations

The team assessed the available technology used in other organizations in order to determine software that could assist Habitat for Humanity in their volunteer and project management needs.

We identified possible management information technologies by interviewing a variety of nonprofit organizations. We identified both local and nonlocal nonprofits with a similar size and/or operations to Habitat through online research and snowball sampling. We contacted each organization via email and phone to arrange interviews. We created a well-rounded list of 14 organizations that vary in sector and structure while providing an array of different management systems. The varying sectors of the organizations are construction, animal rescue, and community services. The structure of these organizations differ in size and business models.

We contacted 14 organizations in total and were able to conduct interviews with nine of them. Specifically, we conducted interviews with: Worcester Animal Rescue League, Bide-a-Wee animal shelter, FW Madigan Construction Consulting Company, YMCA and various Habitat for

Humanity affiliates. During our interviews, we sought information on each organization's volunteer and project management systems. We researched costs and long-term benefits of each management technique and we used them to identify information that will be discussed in objective 4.

Objective 4: Evaluated the Suitability of Identified Software and Techniques for Habitat for Humanity

In order to evaluate the suitability of different software, we compared the management systems we identified in objective 3. We created a table of needs using the information gathered in objective 1. According to 13 regular volunteers and five managers the necessary components of a volunteer management system include:

- Backend Access: Ability for managers to register volunteers or log volunteer hours.
- Number of Clicks: The number of screens and/or mouse clicks a user must go through in order to access information.
- Aesthetics: The overall visual appeal of a program.
- Thank You Notes: Ability to send thank you notes through the volunteer program.
- Confirmation Emails: Ability to send automated emails confirming the registration of volunteer event.
- Reminder Emails: Ability to send automated emails reminding the registered volunteers of the event.
- Volunteer Ability to See Hours: Volunteers can view their own hours served per week, per month, per year, or lifetime.
- Instantly Message Volunteers: Capability to instantly message volunteers.
- Price: The cost of the software on a yearly basis. Includes start-up and additional costs.
- Transfer Data: Ability and ease of transferring volunteer data from previous database to the new software.

- Security and Privacy: The security of the program and the ability to keep sensitive volunteer information private.
- Technical Support: Aid from customer support when in need of technical assistance. Response time and helpfulness.
- Kiosk Feature: Includes a sign in feature for volunteers to log hours at build sites.
- Online Waivers: The program offers online waivers for volunteers.
- Effectiveness: Potential to meet Habitat's needs
- Ease of Use: The user-friendliness of a program.
- Maintenance of the Program: The amount of upkeep after the program is implemented.

The necessary components of a project management system include:

- Aesthetics: The overall visual appeal of a program.
- Price: The cost of the software on a yearly basis. Includes start-up and additional costs.
- Ease of Use: The user-friendliness of a program.
- Maintenance of the Program: The amount of upkeep after the program is implemented.
- Flexibility: Ability to make changes to the program when needed.
- Cloud-Based: Internet based that allows for timelines to be updated in all locations at any time.
- Sustainability: Program can be used long-term and will remain prevalent.
- Simplicity: Program has features needed, yet remains simple in use and structure.

We created a table that identified these characteristics in each software. We presented our comparative findings of each of the volunteer and project management software in a table (see appendix H & I) to Ms. Molly Pietrantonio and Mr. Jon Bram. We gathered their feedback on the utility of each of the software we explored. We used these discussions to narrow down the potential project and volunteer management software.

Objective 5: Piloted and Evaluated the Recommended Software at Build Sites for Habitat for Humanity

Using the results of objective 4, we piloted three volunteer tracking programs and one build site timeline software. After the presentation of our project management software, we received feedback that led us to only pilot one build site program.

The group chose three volunteer tracking programs with the input of the Volunteer Coordinator: Volgistics, Cervis and VolunteerHub. We established free trials of each software to set-up for demonstration. The group held a meeting with the Volunteer Coordinator to walk her through the process of each program. The group then contacted the representatives from the different volunteer software programs to get quotes on pricing/features to present to Habitat for Humanity. Accompanying these quotes, the group further demonstrated and piloted the features such as on-site sign-ins. These pilot runs revealed which programs were most feasible for Ms. Molly Pietrantonio, Mr. Jon Bram and all involved in Habitat for Humanity MetroWest/Greater Worcester.

Objective 6: Developed & Recommended a Plan to Implement Most Effective Information Management Technology Systems

Using the results of objective 5, we made an educated recommendation for the final volunteer and project management systems.

The team recommended a tracking system to help Ms. Molly Pietrantonio and Volunteer Management at Habitat for Humanity MWGW, accurately track all volunteers that participate at the build sites every day. Habitat for Humanity has the potential to receive grants to help finance

the costs of their build sites by keeping more precise records. The team also recommended a program to track build site timelines to help Mr. Jon Bram and the project management team at Habitat for Humanity MWGW. This program helps Mr. Jon Bram, the Project Manager, accurately communicate the timeline of the project to all involved personnel in Habitat for Humanity.

We created a how-to guide for each program as a deliverable for the project. The volunteer management guide includes steps for the administrator and the volunteer for performing any activity they would need to complete. The administrator is guided through actions such as creating events, adding volunteers, producing reports, editing shifts and schedules, creating accounts and changing settings. The volunteer is walked through creating an account, registering for an event, creating a group and changing their information. The written guide is complete with screenshots of every step of every action that needs to be taken and times that each action is discussed in the video tutorial. The administrator can also refer to the volunteer management video guide which walks the user through each step right in front of them. Lastly, at the end of the written user manual, there is a list of frequently asked questions that were compiled when piloting and interviewing the Volunteer Coordinator. It is our hope that this guide will allow for this volunteer management system to be a systemic change for Habitat for Humanity.

The project management guide ensures that the Project Manager understands how to access and maintain the program we recommended for Habitat for Humanity. The group has created both a written manual and video how to guide. Both of these guides are meant to serve as a resource for current and future users of Habitat to understand any change or action they made need to take. The video walks the user through creating a new build site timeline, editing deadlines, and editing existing sheets. The user can easily follow along and repeat the steps that are taken in the demonstration video. The written manual for Google Sheets is even more extensive and explains

the concepts in more detail than the video. The manual also includes frequently asked questions that were compiled during research and interviews with the Project Manager. The manual will also include the exact times in which those actions occurred in the video. The creation of the project and volunteer management written and video guides will ensure that the users can perform any task making it as sustainable for the future as possible.

We formulated multiple findings that were based on the methods that were previously discussed. The findings from each objective add to the overall goal of assisting Habitat with volunteer and project management. We gave the Volunteer and Project Managers a list of recommendations to improve their management based on our findings.

4. Findings and Recommendations

This project helped Habitat for Humanity MetroWest/Greater Worcester (MWGW) to improve communications and operations by piloting and recommending an information management system to more efficiently communicate build site timelines and track volunteer hours.

4.1. Habitat for Humanity's Volunteer and Project Management Needs

After interviews, surveys, and participant observation we were able to develop multiple findings to identify and address Habitat for Humanity MWGW. These needs were thoughtfully compiled from all levels of the organizations including the executives, managers, and volunteers. We discuss our findings below.

Finding 1: Habitat for Humanity MWGW needs a user friendly and comprehensive volunteer tracking system that will help track volunteer participation and be used to secure grant funding.

Habitat for Humanity MWGW is a growing organization that manages 2,400 volunteers annually. Currently the Volunteer Coordinator estimates volunteer hours for each volunteer at the end of each week. Although the regular volunteers are not difficult to track using this tactic, the number of hours given by one-time volunteers can be difficult. The Volunteer Coordinator needs a new system to accurately track volunteer participation due to the rapidly increasing number of volunteers. The most effective way to accurately track the always increasing number of volunteers, is to implement a user friendly and comprehensive volunteer tracking program.

The easier to learn the software is, the more sustainable it becomes.

The user friendliness of the program refers to a software that is easy to use and learn. Habitat for Humanity is in need of a volunteer management program that offers features such as technical support, backend registration of volunteers, onsite check in process, track volunteer hours accurately, etc. without a lot of extras. The unnecessary features can cause confusion and frustration when learning or teaching the software. The integration of a simple and easy to use program ensures that the current Volunteer Coordinator will be able to teach a new Volunteer Coordinator someday.

The software should also be easy to understand from the volunteer's perspective so they are comfortable using it. 11 of the 13 (85%) volunteers that were surveyed were retired and did not have a lot of experience with technology. There is a large learning curve for the vast majority of these volunteers when it comes to using any kind of technology.

In addition to user friendliness, the program had to be comprehensive enough to serve the Volunteer Coordinator's needs. An appropriate volunteer management program is one that includes: the ability to track volunteer hours; virtual kiosk sign in station; a live customer service center for technological support; cloud based; track the number of volunteers; the ability to send thank you and reminder emails to volunteers; back end access to contact and emergency information for staff; and is easy for volunteers to access (M. Pietrantonio, personal communication, March 23, 2016).

Features such as live technical support, ability to track hours, cloud based and the ability to track the number of volunteers were features that appeared consistently in our background research as essential components. The Volunteer Coordinator requested that the software include the ability to send thank you notes, allowed back end access, provided emergency information and sent reminder notifications. The Volunteer Coordinator, Project Manager, and Executive Director

would also like to track volunteer waivers online. The group heavily weighted cost into the equation as well as the previously listed criteria.

Finding 2: Habitat for Humanity MWGW needs a volunteer tracking system focused around volunteer participation and not donations.

Throughout our research we identified ten of possible volunteer tracking programs. However, we were able to quickly eliminate seven.

Volunteer tracking programs such as VolunteerHub, Volgistics and Cervis satisfied the needs specified by the Volunteer Coordinator and were the top considerations for the pilot. These programs offered the desired features and few that were not needed. Volunteer coordination software such as Bloomerang, Kindful, E-Tapestry and NeonCRM were programs that focused too much on donations and fundraising thus would not be suitable for HFH MWGW (M. Pietrantonio, personal communication, March 23, 2016). Habitat for Humanity already uses a donation based software for the ReStore called GiftWorks. These programs offered various features that were not desired. Volunteer management software, such as Bloomerang, e-Tapestry, Kindful, and NeonCRM offered far too many unnecessary features which usually increased the price. The amount of features in the software is directly correlated to the price thus it is key that the program not offer features that will not be used.

Finding 3: Habitat for Humanity MWGW needs a user friendly and easy to update Project Management software program that is a capable of updating office employees on the current progress on the build site.

The Project Manager at Habitat for Humanity MWGW currently communicates build site timelines to the Board of Directors and other managers via phone calls and emails. According to Mr. Bram, Habitat's Project Manager, this process is time consuming and without consistent updates, managers and office workers often fail to be updated. This is a huge problem because

upper level management must be up to date on the build sites to ensure the organization is running as smooth as possible. Humanity MWGW is a rapidly growing organization and will see their build site numbers more than double from two projects to five projects by 2017. The current method for tracking build site timelines is insufficient for Habitat's projected growth (T. Firment, personal communication, March 16, 2016). The organization needs a program that can track the build progress and update management quickly and easily. The best project management software will be one that is easy to use and offers all desired features without extras (J. Bram, personal communication, March 24, 2016).

Finding 4: Habitat for Humanity MWGW needs management software that is cloud based.

Habitat for Humanity MWGW needs a cloud based solution to satisfy their project and volunteer management needs as a growing organization. Habitat MWGW has completed 36 homes from 1985 to 2016. This equates to about one home every year for the past thirty years. However, this year alone, Habitat MWGW is working on five building projects; the most in history (About Habitat, 2016). This will ensure that the Executive Managers, Site Managers and the Volunteer Coordinator are updated in real time. Real time updates notifies the Board of Directors where the project stands instantly and if additional funding is needed. In the modern world of technology, using paper and pen is no longer the most effective solution to tracking volunteer hours. Software programs can do a better job than a manual strategy because it will also get done quicker and more accurately. Manual volunteer management strategies can result in frequent mistakes that include incorrectly recorded service hours. Recording hours manually for hundreds of volunteers is a lot to keep track of and an automatic online software can handle this task easily. Using a cloud based program will free up valuable time by quickly allowing access to important information and reports for the Volunteer Coordinator. This information stored in a cloud based program can help pursue

essential grants and donations. Access to a smartphone on the build sites will allow the Project Manager to update the build timelines onsite through a potential cloud based solution. The Volunteer Coordinator also has access to the iPad which will help to allow volunteer check in and make tracking possible

4.2. Though Habitat for Humanity Has Sufficient Technology Available, Their Current Management Technology is Insufficient for Their Project and Volunteer Management Needs

Habitat for Humanity MWGW has access to various forms of technology that will help to improve their current project and volunteer management techniques.

Habitat currently tracks build sites by relying on the Project Manager to update the office through emails and phone calls (J. Bram, personal communication, March 24, 2016). Volunteer tracking is currently conducted by the Volunteer Coordinator who estimates the hours that the volunteers contributes at the end of each week (M. Pietrantonio, personal communication, March 23, 2016).

Habitat for Humanity MWGW currently has access to one iPad at the build site and computers in the office. The Volunteer and Project Manager are equipped with smart phones and MWGW is budgeting for two more iPads in the near future for use at build sites. Habitat owns a copy of Microsoft Project for project management and an antiquated VolunteerHub account for tracking volunteers (M. Pietrantonio, personal communication, March 23, 2016).

Habitat for Humanity MWGW has sufficient technology because the iPhones, one iPad and numerous computers at the ReStore are sufficient to sustain a technologically based project and volunteer management software. Access to sufficient technology is essential when trying to integrate software into their project and volunteer management strategies.

In addition, the Project Manager has an outdated version of Microsoft Project, a project management software that, according to Mr. Bram is seldom used by Habitat for Humanity MWGW. Although it is used inconsistently, Mr. Bram, Habitat Project Manager, has some experience using Microsoft Project, making it easier for him to more consistently integrate Microsoft Project or an alternative project management program. On the volunteer management side, Habitat for Humanity MWGW has an older version of VolunteerHub to track volunteers. The version of VolunteerHub is basic and offers a limited number of features. It can only be used to track volunteer names, addresses, and contact information rather than a dynamic system that tracks volunteer schedules and service (M. Pietrantonio, personal communication, March 23, 2016).

4.3. There Are a Variety of Volunteer Management Software that Could Fill Habitat for Humanity's Volunteer Tracking Needs

The group conducted fifteen interviews with both profit and nonprofit organizations to gain a better understanding of the existing management programs and techniques used elsewhere. These organizations included four other Habitat for Humanity affiliates, a private construction company and other nonprofit organizations that operate in different sectors. These sectors include construction, affordable housing, animal wellness and community development. This gave the group a good understanding of the programs that work for other organizations.

Finding 1: Volunteer Management programs such as Cervis, VolunteerHub and Volgistics currently satisfy the volunteer tracking needs of other nonprofit organizations.

There are various nonprofit organizations that use technology to track their volunteer hours and countless programs that track volunteer participation. Three of the popular software programs are Cervis, VolunteerHub, and Volgistics. As of spring 2016, the Habitat for Humanity Omaha affiliate uses Cervis to track their volunteers and this program satisfies their needs. The affiliate

has been extremely impressed with the exceptional service that this program provides. Cervis provides online waivers, on-site kiosk sign in and 24/7 tech support at no additional charge. It has been described as easy to use, maintain and set up. He shared that the help and call center always provide effective and timely assistance (C. Heavner, personal communication, March 23, 2016).

Cervis, VolunteerHub and Volgistics project management programs have a variety of similarities and differences. Each program has the ability to track volunteer hours, are web based, include back end access, allow volunteer hours and can send thank you and reminder notes. This information was found through exploring each of their websites and free trial programs. All of the programs also offer a free trial. The three programs are also similarly priced with Volgistics being the most expensive followed by VolunteerHub and then Cervis. The biggest differences with the three programs are related to the tech support offered and the number of volunteers that can be tracked. VolunteerHub and Volgistics both increase their prices as the number of volunteers increases while Cervis offers the same price regardless of amount of volunteers. In addition, Cervis and VolunteerHub offer tech support via phone and email while Volgistics only offers only email support. A more extensive comparison can be seen below in Table 1.

Table 1: Volunteer Management Software Comparison

Volunteer Management Software			
Features	**Volunteer Hub**	**Volgistics**	**Cervis**
Type	Web-based	Web-based	Web-based
Price	$2000/ year	$195/month	$175/month or $1800/year
Track # of People	1000 volunteers	Price increases with volunteers	Unlimited
Kiosk	✓	×	✓
Back End Access	✓	✓	✓
Track Volunteer Hours	✓	✓	✓
Thank You Notes	✓	✓	✓
Confirmation Email	✓	✓	✓
Reminder Email	✓	✓	✓
Volunteer Ability to See Hours	✓	✓	✓
Instantnly Message Volunteers	✓	✓	✓
Online Application/Registration	✓	✓	✓
Transfer Data	N/A	$500	$100 start up $300 to import
Security and Privacy	✓	✓	✓
Tech Support	✓	×	✓
Free Trial	30 Days	30 Days	30 Days

Finding 2: Volgistics is a complex volunteer management program and will not satisfy Habitat for Humanity's MWGW needs.

Volgistics volunteer management software was considered to be too complex for Habitat for Humanity MWGW. When piloting the program with the Volunteer Coordinator, she did not enjoy the added complexity and unnecessarily higher costs of the program. The program was extremely difficult to set up as there were countless settings that needed to be specified before accessing the software. Using the simple features such as creating an event or volunteer profile was unnecessarily complicated. In addition, Volgistics does not offer a call center for assistance so problems encountered in the future could be difficult to deal with. The help videos that are offered on the website are also quite expensive. It was an easy decision for the Volunteer Coordinator to eliminate this program from the list of suitable software.

Finding 3: VolunteerHub and Cervis were the two preferred volunteer management programs.

Cervis and VolunteerHub are similar programs that offer all of the desired features that Habitat for Humanity MWGW requires. Both are user friendly, easy to use and maintain and available at a reasonable price. Habitat for Humanity owned an outdated version of VolunteerHub

but needs to upgrade because they exceed the volunteer tracking limit. Using a new version of VolunteerHub in the future would not require any volunteer data to be transferred and the company offers the kiosk feature and training entirely free of charge. However, Habitat for Humanity MWGW would need to pay extra for features such as online waiver forms. The program also has a cap on the volunteer and administrator users.

Cervis is a great program that is similar to VolunteerHub. Cervis is aesthetically pleasing and offers all of the features that the Volunteer Coordinator is looking for. Cervis offers a call center similar to VolunteerHub and is a user friendly program. Cervis, however, is less expensive than VolunteerHub and offers all of the features at one flat rate. Kiosk and volunteer waivers do not cost anything in addition. Cervis also offers unlimited number of volunteers that can be tracked and there is no limit to the number of administrators. This is important because the organization does not have to worry about needing to upgrade the software when the number of volunteers tracked increases over 2500. The unlimited administrators means that a large number of people can monitor and help the Volunteer Coordinator. Habitat for Humanity MWGW is a growing organization and if they track volunteers using Cervis, they will not have to worry about having to upgrade the software when the volunteer numbers increase even more.

4.4. Volunteer Management Recommendation

We recommended that Habitat for Humanity MWGW uses Cervis to manage and track their volunteers. The unlimited number of volunteers that Cervis can track make it a better choice when compared to VolunteerHub's bump in pricing after 2,500 volunteers. The flat rate for features like kiosk and liability waivers also proved Cervis to be cheaper, yet more encompassing. The overall aesthetics and better integration into Habitat's website also played a role in the decision. The piloted free trial of the Cervis program demonstrated that this software best

accommodates Habitat's needs while remaining within their budget (T. McGoldrick, personal communication, March 23, 2016).

4.5. There Are a Variety of Project Management Software that Could Fill Habitat for Humanity's Build Site Timeline Tracking Needs

The group piloted and evaluated the software that was analyzed and deemed appropriate for Habitat for Humanity MWGW. The programs that did not satisfy all of the needs were eliminated and a few programs were left. The pilot and evaluations of each software was conducted to understand the preferences of the Project and Volunteer Managers. All of their suggestions and preferences were heavily weighed when considering programs to pilot.

The group gathered a vast amount of information from the interviews and analyzed the information extensively. Each software was evaluated to determine its suitability for Habitat for Humanity MWGW. As the process unfolded, various software programs used by other organizations were eliminated due to their complexity and difficulty to use, and the group further analyzed those that they believed would satisfy the needs Habitat for Humanity MWGW.

Finding 1: Project Management programs such as Microsoft Project, Buildertrend, Microsoft Excel and Google Sheets currently satisfy the build site timeline tracking needs of other construction organizations.

Many construction organizations, both for-profit and nonprofit, use technology in order to manage their build site timelines for ongoing projects. Four of the popular programs the group came across during interviews were Microsoft Project, Buildertrend, Microsoft Excel and Google Sheets. FW Madigan Construction Company currently uses Microsoft Project to track their build sites (J. Madigan, personal communication, March 22, 2016).. This for-profit company tracks build site timelines and monitors many more aspects of the build site than are relevant for Habitat for

Humanity. Affiliates of Habitat for Humanity track build sites using a wide variety of strategies. Habitat for Humanity Westchester uses Microsoft Project however, they struggle to update the software regularly (J. Killoran, personal communication, March 21, 2016). The Habitat for Humanity affiliate located in Omaha uses Buildertrend to track their project timelines. Habitat for Humanity Atlanta uses a Microsoft Excel spreadsheet strategy for project management and they require staff to meet each week to update management.

Microsoft Project, Buildertrend, Google Sheets and Microsoft Excel are project management programs that offer some similarities and a variety of differences. Each of the programs are aesthetically pleasing and are flexible meaning they can be updated and changed as the timeline unfolds. Other than this similarity, these programs are quite different. Both Google Sheets and Microsoft Excel are both free programs while Microsoft Project are not. Buildertrend is the only software that is difficult to use while Google Sheets is the lone program that is easy to maintain. Microsoft Project, Buildertrend and Google Sheets are cloud based while Microsoft Excel is not. Lastly, Google Sheets and Microsoft Excel are much simpler than Buildertrend and Microsoft Project due to fewer features. A more extensive comparison can be seen in Table 2.

Table 2: Project Management Software Comparison

Project Management Software Comparison				
Features	**Microsoft Project**	**Buildertrend**	**Google Sheets**	**Microsoft Excel**
Aesthetics	✓	✓	✓	✓
Price	$280	$99/ month	Free	Free
Ease of use	✓	×	✓	✓
Maintenance	×	×	✓	×
Flexibility	✓	✓	✓	✓
Cloud based	✓	✓	✓	×
Sustainability	×	×	✓	×
Simplicity	×	×	✓	✓

Finding 2: Microsoft Project, Buildertrend and Microsoft Excel are complicated programs and are not a suitable solution for Habitat for Humanity's project management needs.

Habitat for Humanity MWGW needs a project management software program that is easy to use and maintain. The Project Manager needs to update the timeline from his smartphone on the build site or in the office quickly and easily. **Microsoft Project** has a variety of features that this affiliate does not deem useful and these features add an extra level of complexity. This includes features such as subproject and linking multiple projects together. Simple tasks such as moving deadlines and calculating end dates become increasingly more complex with these features. Microsoft Project is not cloud based which does not allow managers to update in real time on various technological devices. FW Madigan suggests a simpler program than Microsoft Project because an organization managing 2-5 build sites, does not need all the features that it offers (J. Madigan, personal communication, March 22, 2016).

Buildertrend is a robust project management software similar to Microsoft Project and offers many unnecessary and confusing features for Habitat's purposes. These features include financial tools, bid requests and customer management (C. Heavner, personal communication, March 23, 2016). These extra features would not be used by the nonprofit organization and would increase confusion. Although it is a cloud based solution, it is not easy to use and difficult to maintain and update. This software is more complicated than Microsoft Project due to the features that only a commercial construction company would use.

Microsoft Excel is not a suitable solution for tracking build site timelines either because they cannot be accessed remotely or updated automatically. Updating these sheets each week requires a large amount of time. Organizations that use this approach admit that they require too much time updating files and causes confusion with the number of files. The files must be updated each week and sent out thus the number of documents becomes overwhelming after a few weeks.

Simply using an online program would help the affiliate save a lot time (D. McGuffin, personal communication, March 23, 2016). A cloud based solution for both project and volunteer management will free up time for the managers to focus on other tasks that cannot be performed by technology.

Finding 3: Google Sheets is the preferred project management program.

Google Sheets is a simple yet suitable cloud based solution that included a visual Gantt chart and an easy to update schedule. The Google Sheet can be accessed on the Google Drive on any computer with internet access and on a mobile device through the Google Sheets app. Google Sheets can also be tailored by the group to encompass all of the needs for Habitat for Humanity MWGW. This means that all of the desired features can be incorporated while there will be no unnecessary ones. This ensures that this program will be user friendly and easy to update.

The Project Manager, Jon Bram, favored the Google Sheets pilot and did not want to test any others. Instead, collectively the group and the Project Manager decided to continue to make changes to the existing Google Sheet. The Google Sheet was customized to satisfy all the needs of the Project Manager. These customizations included additions of: delayed days, vacation weeks and predecessor tasks. These can be viewed in Appendix I that shows a graphic of the Google Sheet.

4.6. Project Management Recommendations

We recommended that Habitat for Humanity MWGW use Google Sheets to track and update the progress and status of the build sites and critical repair projects. We created a Gantt chart template in Google Sheets with formulas that make it simple for the Project Manager to input tasks that go into the project. Once all the tasks are in, it is simple to update, track and communicate

the status of the project to all volunteers and managers. We then trained the Project Manager how to use the Google Sheets system in order to ensure sustainability. The group created a how-to manual for Google Sheets including a video tutorial and a written document to ensure that future Project Managers would be able to sustain the Google Sheets system. All of the features of the template were discussed and all the essential actions that need to be performed were demonstrated. The user can access the written user manual to answer any additional questions they may have that are not addressed in the video. The written user manual contains screenshots of each window walking the user through any troubles or confusion they may experience. These resources will be available for any future use or training of new users. The ease of use, guided instructions, and zero cost makes Google Sheets a long term option for Habitat to improve the management of build site and repair project timelines.

5. Conclusion

Habitat for Humanity MWGW has been and continues to be a growing nonprofit organization. As of spring 2016, the Habitat for Humanity affiliate serves two build sites per year and will soon be managing projects at five build sites. Based on the research that we conducted throughout the term, we affirmed Habitat for Humanity's need to integrate technology into their volunteer and project management. During March 14 - May 2, 2016, we conducted several surveys and informal interviews to help validate our background research and this idea.

During the term, our group concluded that the need for including technology in both project and volunteer management is a relatively common problem in nonprofit organizations in all sectors. While initially considering all strategies for project and volunteer management, the group quickly realized that using a technological solution would be the most effective.

As a result, we focused our efforts on finding technology that was cloud based to meet the project and volunteer management needs of Habitat for Humanity MWGW. Several software were narrowed down into the programs that offered all of the desired features specified by the research conducted with the Habitat for Humanity affiliate. Finally, the group found and piloted two programs that would be sustainable and help Habitat for Humanity MWGW with project and volunteer management for many years to come. The programs recommended for Habitat's use were Cervis and Google Sheets, respectively. A how-to-manual and video tutorial for both Cervis and Google Sheets was given to the Volunteer and Project Manager. These guides along with our recommendations will provide a sustainable option for volunteer and project management for the future.

Appendix

Appendix A: Preamble for Interviews and Surveys

Preamble

We are students from Worcester Polytechnic Institute conducting research for Habitat for Humanity MetroWest/Greater Worcester with advising from WPI faculty. The goal of this project is to help Habitat for Humanity MWGW to more efficiently communicate build site timelines between involved personnel and track volunteer hours by introducing a management information system to the organization. The objectives we hope to accomplish in this project are to:

- Assess Habitat for Humanity's Needs for Volunteer/Project Management
- Assess Habitat for Humanity's Current Available Technological Resources
- Identify Available Technology Used in Other Nonprofit Organizations
- Weigh the Pros and Cons of Each Software and Technique Available
- Pilot and Evaluate the Recommended Software with Habitat for Humanity
- Recommend Plan to Implement Most Effective Tracking System for Volunteers
- Recommend Plan to Implement Most effective Program for Building Timelines

This interview will take about (x) minutes. Participation is voluntary and you do not have to answer anything you don't want to. We will be taking notes throughout the interview and may use an audio recording with your consent. You do not have to disclose your name or organization if you do not want to. We will use direct quotes only with your consent.

Thank you for your time.

Appendix B: Volunteer Questionnaire at Habitat for Humanity

Questionnaire for Volunteers at Habitat for Humanity

General Information:

What is your gender?

a. Male b. Female c. prefer not to answer

What age range do you fall under?

a. Under 18 b. 18 to 25 c. 26 to 40 d. Over 40

What is your state of employment?

a. Student b. Employed c. Retired d. Other

Volunteer Tracking System

Do you like the current tracking system for volunteer hours?

a. Yes b. No

What are some of the current issues with the system?

What are some of the things you like about the system?

What do you think would make your check in process more convenient?

What is the most important aspect in a tracking system if Habitat for Humanity were to try a new system?

a. Reliability b. Ease of use c. Accessibility d. Online e. Other

(If other, write below)

Appendix C: Interview for Project Manager at Habitat for Humanity

Interview for Project Manager

Semi-Structured
Interviewee: Jon Bram
Interviewers: Chris Xavier, Andrew Bauer, Anna Schozer, Erin Bracken
Scribe:
Date:

Basis for Interview

What do you like about the current project management tracking strategy?

What do you not like?

What were some of the issues when you used Microsoft project during the first trial run?

Name the most important things that a project management software program would need to have? What is the most important to you?

What is the most important parameter we should be weighing when deciding which programs to pilot? (All needs met, price, user friendly, connectability)

Who are the other people that need to be updated on the build site timelines?

What technology would the build sites have access to?

How often would you be updating the build site timeline?

Appendix D: Interview for Volunteer Coordinator at Habitat for Humanity

Interview for Volunteer Manager

Semi-Structured
Interviewee: Molly Pietrantonio
Interviewers: Chris Xavier, Andrew Bauer, Anna Schozer, Erin Bracken
Scribe:
Date:

Basis for Interview

How many volunteers are managed?

What requirements do you have for volunteer tracking? How much do grants drive this?

What tracking system is currently in place?

What do you like about the current volunteer tracking system?

What concerns do you have for the current tracking system?

What are the top priorities for a new tracking system?

What concerns do you for-see with volunteers?

What concerns do you for-see with executive management?

Appendix E: Interview for Executive Managers at Habitat for Humanity

Interview for Executive Managers

Semi-Structured
Interviewee: Tim Firment or Deborah Huegel
Interviewers: Chris Xavier, Andrew Bauer, Anna Schozer, Erin Bracken
Scribe:
Date:

Basis for Interview

What requirements do you have for volunteer tracking?

What drives these requirements?

What tracking system is currently in place?

What do you like about the current volunteer tracking system?

What concerns do you have for the current tracking system?

What are the top priorities of the tracking system?

What concerns do you for-see with volunteers?

What concerns do you for-see with executive management?

What do you like about the current project management tracking strategy?

What do you not like?

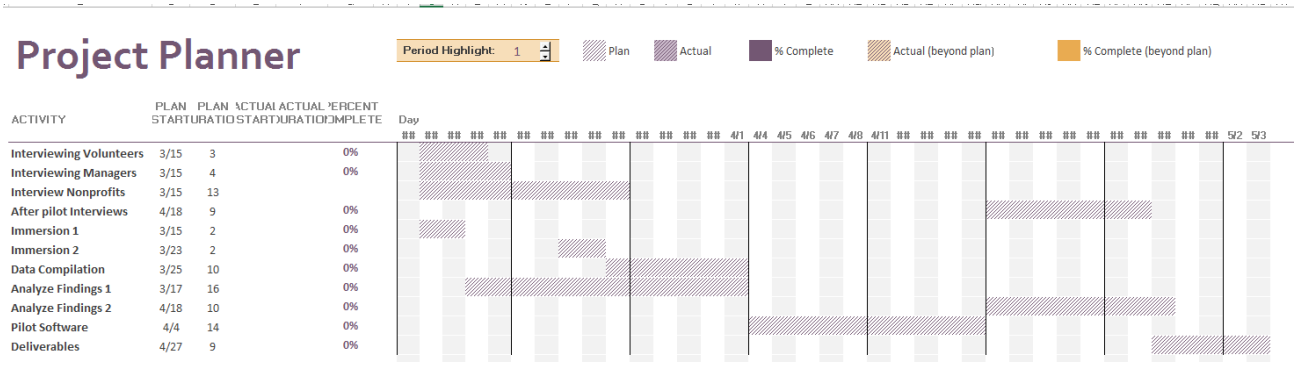
Name the most important things that a project management software program would need to have?

What is the most important parameter we should be weighing when deciding which programs to pilot? (All needs met, price, user friendly, connectability)

What technology would the build sites have access to?

What level of communication is needed in both systems?

Appendix F: Project Gantt Chart



Appendix G: Technological Resources Available at Habitat

Technological Resources Available at Habitat		
Onsite	**Office**	**At Home (Volunteers)**
Smart phones	Laptops	Laptops
Tablets	Desktops	Desktops
	Tablets	Tablets
	Smart phones	Smart phones

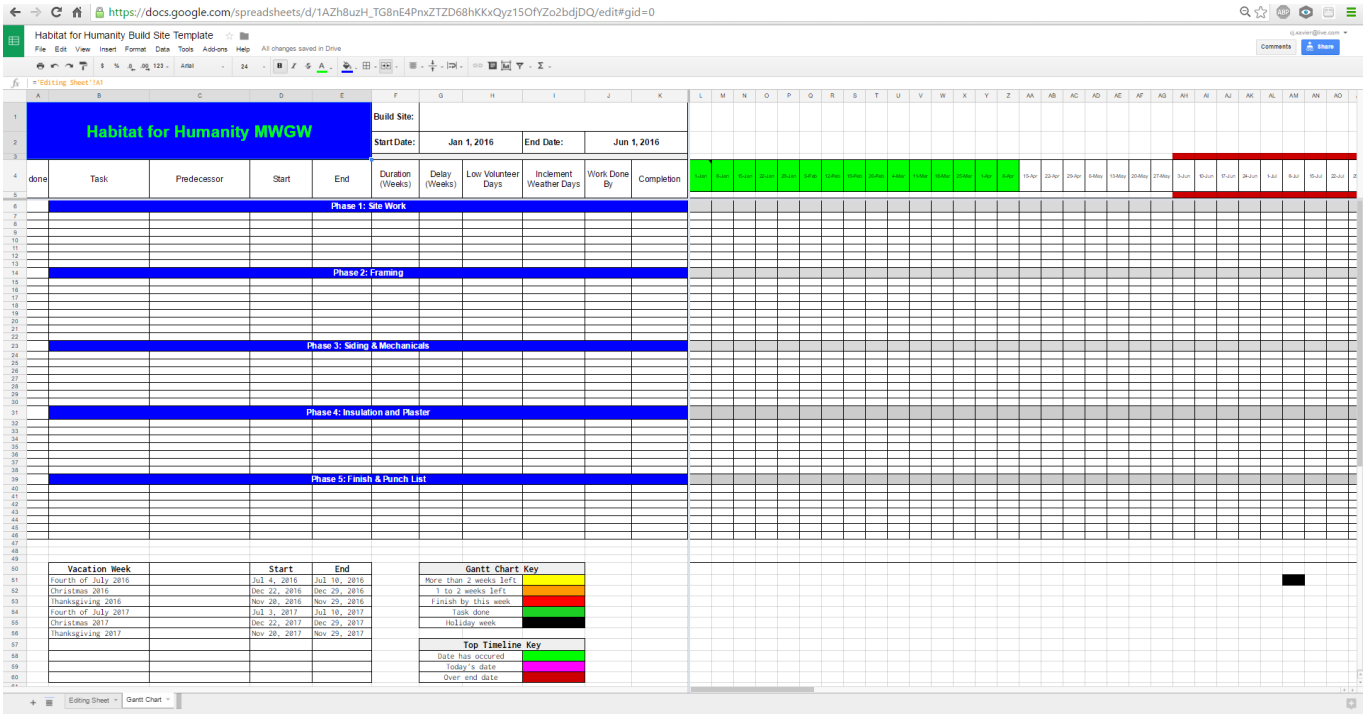
Appendix H: Project Management Software Comparison Table

Project Management Software Comparison				
Features	**Microsoft Project**	**Buildertrend**	**Google Sheets**	**Microsoft Excel**
Aesthetics	✓	✓	✓	✓
Price	$280	$99/ month	Free	Free
Ease of use	✓	×	✓	✓
Maintenance	×	×	✓	×
Flexibility	✓	✓	✓	✓
Cloud based	✓	✓	✓	×
Sustainability	×	×	✓	×
Simplicity	×	×	✓	✓

Appendix I: Volunteer Management Software Comparison Table

Volunteer Management Software			
Features	**Volunteer Hub**	**Volgistics**	**Cervis**
Type	Web-based	Web-based	Web-based
Price	$2000/ year	$195/month	$175/month or $1800/year
Track # of People	1000 volunteers	Price increases with volunteers	Unlimited
Kiosk	✓	✗	✓
Back End Access	✓	✓	✓
Track Volunteer Hours	✓	✓	✓
Thank You Notes	✓	✓	✓
Confirmation Email	✓	✓	✓
Reminder Email	✓	✓	✓
Volunteer Ability to See Hours	✓	✓	✓
Instantnly Message Volunteers	✓	✓	✓
Online Application/Registration	✓	✓	✓
Transfer Data	N/A	$500	$100 start up $300 to import
Security and Privacy	✓	✓	✓
Tech Support	✓	✗	✓
Free Trial	30 Days	30 Days	30 Days

Appendix J: Google Sheets Project Management Template



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