

Framework

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Vocational standards, essential employability skills, course learning outcomes, and external competencies are the cornerstone of teaching, learning, and assessment for all courses at Mohawk College. Alignment of learning activities to these outcomes at a level expected of a student in an Ontario Graduate Certificate program is required by the Ministry of Training, Colleges, and Universities.

The Capstone Project for the Business Analysis program is designed to provide a variety of learning activities that align with the vocational standards, essential employability skills, course learning outcomes, and external competencies in order to assess the development of skills and knowledge of a student in this program.

Vocational Standards and Learning Outcomes

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Vocational Standards	Essential Employability Skills*	Course Learning Outcomes**
<p>Develop new or improved innovative business processes from gap analysis through process design in support of a company's strategic objectives in a socially responsible manner.</p> <p>Plan, manage, and facilitate the requirements gathering activities throughout the requirements process for changes to a business system, including analysis of the interdependence between financial and operational metrics.</p> <p>Collaborate, network and communicate with various stakeholders in an ethical manner by applying negotiation and problem-solving skills in order to evaluate and align business processes and business models with the strategic objectives of the organization.</p> <p>Use a project management approach to communicate technical and business information to a variety of stakeholders, including technical and business stakeholders.</p> <p>Utilize effective and established research, documentation methods, and business improvement procedures in order to develop and document business processes and business models according to established timelines and project goals.</p> <p>Develop strategies to bridge gaps between requirements and existing systems using appropriate methods, tools, techniques and documentation in accordance with standard business practices</p>	<p>Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>Apply a systematic approach to solve problems.</p> <p>Analyze, evaluate and apply relevant information from a variety of sources.</p> <p>Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>Use a variety of thinking skills to anticipate and solve problems.</p> <p>Manage the use of time and other resources to complete projects.</p> <p>Show respect for diverse opinions, values, belief systems and contributions of others.</p> <p>Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.</p> <p>Take responsibility for one's own actions, decisions, and consequences.</p>	<p>BUSN10127 Assist a Project Manager in gathering requirements for a project. Perform the duties of a Business Analyst for a small project.</p> <p>BUSN10136 Evaluate the importance of separating interests and people from the problem during integrative negotiating. Analyze and implement an appropriate dispute resolution method based on the characteristics of the dispute while maintaining ethical standards. Assess how managing expectations can be used to prevent conflicts among personal and professional relationships.</p> <p>BUSN10140 Apply business analysis techniques to change at the business level. Determine how to discover enterprise goals through strategic enterprise analysis. Organize and coordinate the efforts of business analysts and stakeholders.</p> <p>BUSN10160 Develop a toolkit of quality assurance methodologies, strategies, tools, and techniques to systematically improve enterprise performance and eliminate waste. Participate on collaborative teams to develop strategies to improve enterprise performance and eliminate waste. Construct process maps, written procedures, work instructions, flowcharts</p>

*The full overview of Vocational Standards and Essential Employability skills is on the program website.

**Course learning elements are available in the course outline for the four core courses for this project.

External Standards IIBA

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The competencies outlined in the Babok V.3 are the foundation of learning and assessment in the Business Analysis program. A successful Business Analyst will use the competencies outlined in the Babok V.3 to track and provide evidence of meeting the skills and knowledge from each knowledge area, tasks, elements, and techniques. By tracking alignment to competencies with evidence, a developing Business Analyst can monitor GAPS in skills and knowledge with a goal to filling those gaps to complete the E-CBA level of certification with a pathway to the CCBA certification and, finally, the CBAP certification.

For more information about the International Institute of Business Analysts external standards and certification, go to:

<http://www.iiba.org/Certification/certificationlevels.aspx>

Executive Summary

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Overview

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Hamilton Public Library (HPL) is a hierarchical organization governed by the Public Libraries Act of Ontario. The library has 22 locations that is overseen by a board of directors, which is an extension of the city's government. They employ professional and knowledgeable staff to help in meeting the user's need. Hamilton Public Library's mission statement is "Freedom to Discover", its vision is to "provide equitable access to and support for knowledge and creativity", and the organization's top priority is to "ensure a positive experience for all its members." ("Mission Statements and Values", 2020). HPL currently provides a variety of services for its users, including free Wi-Fi at all 22 locations.

In recent years, by means of surveys and customer complaints, HPL has found that not all users are satisfied with the Wi-Fi service that is being provided. Users are experiencing issues with the Wi-Fi connectivity as well as having to continually agree to the terms and conditions. To ensure that the library is adhering to its standards, HPL partnered with CityLAB to find solutions to this problem. Through this partnership, students in the Business Analysis program at Mohawk College were tasked with analyzing the data provided by HPL and conducting interviews with HPL's stakeholders to gain a deeper understanding of why the challenges are occurring, and present possible solutions that will help to create the ideal user experience.

Providing free and reliable Wi-Fi services is an important part of personal and community development. Bertot et al. (2008), note that people use Wi-Fi as a means of job searching, for educational resource as well as a means of communication for travelers. As such, it shows how vital it is for Wi-Fi availability to be reliable, easily accessible and its range not being confined to the libraries' infrastructure.

Background

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Users of Hamilton Public Library have expressed that they are not completely satisfied with the Wi-Fi services being offered. Their main issues are:

- Insufficient coverage in public spaces across all library branches
- Session time outs which compromise the user experience
- Members must agree to terms and conditions each time they connect to the Wi-Fi

These issues are yet to be resolved, in part, because HPL's Wi-Fi usage data and reports are difficult to customize and analyze, as well as the current Wi-Fi implementation lacks flexibility and cannot be configured to offer a separate Wi-Fi channel. To find a solution to the issues being faced by the users, there will be an analysis of the user reports provided by HPL along with conducting stakeholder interviews. Research will also be conducted to gather information about how other public libraries provide Wi-Fi services to their users. The information gathered will be used to make recommendations to HPL for the measures that can be implemented to improve their users' experience.

Business Case or Business Need

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The Hamilton Public Library project involves a great deal of investment and effort and through undertaking this project our business analysis team was able to weigh all of the tasks involved. The project is describing HPL's public Wi-Fi network status across all branches in terms of coverage, signal strength, capacity, connectivity, and user experience. After carefully analyzing all of the data available and determining what the top business needs are, the team was able to come up with recommends and opportunities for improvement of the current Wi-Fi status. There is so much to learn and so much history within the libraries of Hamilton, so it's very important to the HPL administration that the business needs align with the City of Hamilton's strategic priorities. HPL's missions statement and values are "Hamilton Public Library has many locations and a strong online presence, providing Hamiltonians the opportunities expressed in our Mission Statement, "Freedom to Discover"(Mission Statement and Values, 2020).

Objectives

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Hamilton Public Library Project Objectives

- Apply business analysis techniques to change at the enterprise level.
- Evaluate enterprise goals and align Business Analysis activities through strategic enterprise analysis.
- Organize and coordinate the efforts of business analysts and stakeholders.
- Gather and document user requirements.
- Prepare professional documentation for client and present results.

Goals

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HPL Wi-Fi Project Goal

The aim is to understand how HPL's Wi-Fi network currently functions as it relates to coverage, signal strength and capacity and how it impacts the user's experience, as well as how having to agree to the Terms and Conditions for each Wi-Fi session impacts the user's experience. This will aid in identifying the user's pain points that will provide opportunities for improving the system to provide the optimal user experience.

Project Requirements

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The Hamilton Public Library project has presented many project requirements, from data analysis, to use cases, to stakeholder mapping and more. "Project requirements are conditions or tasks that must be completed to ensure the success or completion of the project" (Project Requirements: Definition, Types & Process, 2017). Our team was presented with documentation from the Hamilton Public Library over MyCanvas as well as having the chance to speak with an Employee from HPL regarding the current Wi-Fi condition. Although being remote presented some issues, it was very helpful to speak with Harmandeep Sharma about some of the current internal and external issues and opportunities to create a S.W.O.T for the project.

During the process of the project our team was required to have weekly meetings. These meetings included having an agenda with minutes taken to ensure deliverables and any action items were met. The benefits of communicating and meeting with your team helps to make change more effective whether its among your team, project or with the project stakeholders. Some other documentation created was a project charter, risk analysis, stakeholder analysis, scope analysis and a control plan.

Recommendations

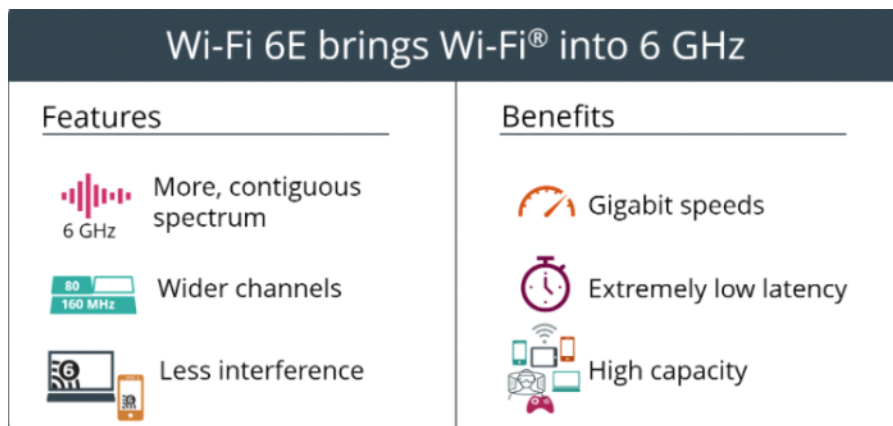
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To conclude the team's final plan for the executive summary, there is a list of recommendations prepared for the Hamilton Public Library (HPL). The goal of this project is to understand how HPL's Wi-Fi network currently functions with regards to coverage, signal strength, and capacity; as well as how having to agree to the Terms and Conditions for each Wi-Fi session impacts the user's experience. Over the course of the semester working on HPL Wi-Fi Improvement, our team has dug deep to analyze the data, amidst all the current project constraints. After analyzing all the data provided by the Hamilton Public Library, the audience should be able to understand the benefits of each recommendation. Below are the critical recommendations for HPL to help their users have a better Wi-Fi experience.

1. Consider upgrading to Wi-Fi 6 (High throughput, low latency, high capacity)

Through extensive research done over the semester it would be appropriate for the HPL to consider upgrading to the Wi-Fi CERTIFIED 6. "Wi-Fi CERTIFIED 6 devices meets the highest standards for multiple reasons, especially security and interoperability. It has the capability of emphasizing quality connectivity in locations with hundreds or thousands of connected devices, such as stadiums and other public venues, as well as corporate networks utilizing time sensitive, high bandwidth applications, Wi-Fi CERTIFIED 6 networks ensures each connected device performs at an optimum level." ("Wi-Fi CERTIFIED 6", n.d.). The key benefits of Wi-Fi CERTIFIED 6 technology include higher data rates, increased capacity, performance in environments with many connected devices and improved power efficiency. Performance in Wi-Fi CERTIFIED 6 provides the foundation for streaming ultra-high-definition movies, to business applications requiring high bandwidth and low latency, to staying connected and productive in congested networks. The benefits of this Wi-Fi system are endless and is supported by beamforming technology. (Fruhlinger, 2019) states that Wi-Fi 6 uses beamforming, which is a wireless signal directed toward a specific receiving device, rather than having the signal transmitted in all directions. This results in a faster and more reliable connection. Understanding that it would be very expensive to implement, it is suggested that the City of Hamilton slowly starts adapting this system, beginning with the top 5 branches. With this type of implementation, HPL users would appreciate a faster connection, specifically on peak user days.

Wi-Fi 6E brings Wi-Fi® into 6 GHz	
Features	Benefits



<https://www.wi-fi.org/discover-wi-fi/wi-fi-certified-6>

2. Standardize hardware and software updates going forward

This recommendation is to help streamline the Wi-Fi systems across the board so the Hamilton Public Library will have more control and synchronized data. If HPL was to standardize their hardware and software updates going forward they would be able to monitor their system more effectively. Uniform equipment would allow accurate comparison of data flow and router usage.

3. Allow the Wi-Fi system to remember the users agreeing to the T&Cs

After closely analyzing the data, this recommendation would be an important part to improving the users' experience. Each time a user wants to access HPL's Wi-Fi, they need to submit agreement to the terms and conditions. This can be a grievance especially when accessing the library multiples times, whether in a day or month. Records show that one user accessed the system 49 times in January 2020 (the highest for the month), which means having to agree to the terms and conditions 49 times. A possible solution for HPL is having its members login with a library card, or if they are not a member, a sign-in they will create and the agreement will be recorded by the device and the guest will not need to agree with it again. The terms and conditions sign in will be remembered through the users library sign in agreement going forward. This could also be done on a month-to-month agreement acceptance basis. A further analysis could be done when the libraries re-open at full capacity to ask users about their terms and conditions experience. Overall this recommendation could have an important impact on the users Wi-Fi session.

4. Consider an outdoor Wi-Fi range extender

One of the final recommendations for HPL would be to install an outdoor Wi-Fi range extender to help the range of the current Wi-Fi routers. If the signal is boosted by a repeater, it can reach the entire property of the library, outdoors included. During the interview with Harmandeep, he had told the team that he is unable to reach the Wi-Fi in the parking lots of the libraries. This limits the user from using the Wi-Fi services on the outdoor spaces of the property and this why the team believes an extender would benefit the users

experience at HPL. Along with this additional extender we recommend HPL to host a survey on their website for HPL members and users to answer HPL related questions. The questions will involve Wi-Fi connectivity and strength questions as well as questions about their user experience.

5. Executive decision

If it is possible according to the political arrangement of the City, we recommend that HPL gain greater autonomy from the City of Hamilton in both their ability to make decisions for themselves, as well as take executive action to troubleshoot their own IT system. The inability for HPL to solve problems immediately, or without outside help, is a frustration for staff and customers. In addition, the relay of information between HPL and the City of Hamilton creates potential for misunderstanding or repetition of work.

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Stakeholders Overview

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Project Sponsors:	Kimberly Silk , Senior Planner, Hamilton Public library Sukh Jatana, Manager of DT Infrastructure
Project Stakeholders:	Community Librarian Strategic Planning and Engagement team Branch managers HPL users

Interests Table

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Stakeholder	Description	Interest
Community Librarian, Chris Walsh	He oversees daily operations including customer service, staffing, training, equipment, collections, guidelines, and procedures. He establishes and builds community contacts, conducts outreach, and represents the library in the community.	Reducing the barriers for people to connect and access the resources without unnecessary steps, issuing limiting or restricting.
Senior Planner, Hamilton Public library, Kimberly Silk	Kim is the primary liaison for community-based research partnerships with academic institutions and provides the senior leadership team with data and research to support HPL's strategic goals as an evidence-driven organization.	Leading HPL's research agenda demonstrating how libraries positively impact their communities
Branch managers	They manage and facilitate various events, programs with community partners over the branches.	Supplying the best user experience to the customers with a variety of contents program and convenient infrastructure.
Manager of DT Infrastructure department	They are responsible for the development and system administration, network and domain administration, client computer configuration, application configuration, and implementation, back- up, disaster recovery, and database administration.	Being more innovative, offering other new services to create a better user experience as current
Strategic Planning and Engagement , Krystin Parkinson	Leveraging systems, people and processes for change in the public and private sector. Build persuasive cross-functional relationships and engagement. Solutions for people, customers and staff from process, policy, information technology, and innovation.	Simplifying the access process of the HPL Wi-Fi system preserving the personal privacy with less clicks and extending Wi-Fi service to the outside of building.
HPL Wi-Fi Users	They are all users visiting HPL to use Wi-Fi services. Based on a community survey, users were classified as a frequent users who visit the library more than once a month, millennials who are aged between 18 and 34, and infrequent users.	The users have a high interest value on free Wi-Fi services at HPL and high quality wireless Wi-Fi access. These are two important factors that encourage them to use the public library and its services.

Analysis

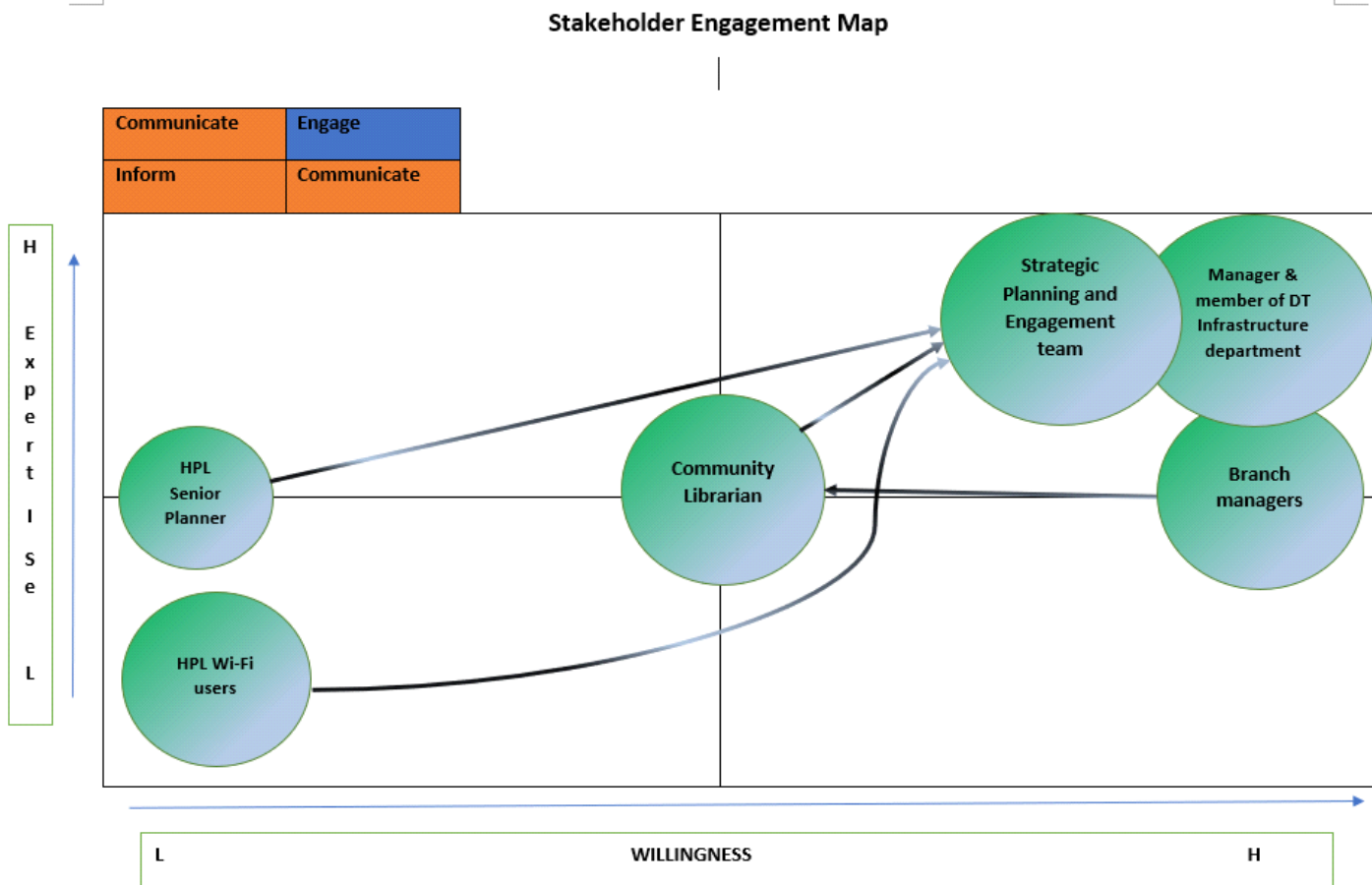
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Stakeholder Matrix: Determine the degree of engagement (High, Medium, Low) for each stakeholder group and each category	Expertise	Expertise	Willingness	Value	Value
Stakeholder Group	Contribution: Knowledge in X issue is of value to the	Legitimacy: Directly affected by our company's activity	Willingness to Engage: Proactive group that is already engaging	Influence: Relatively unknown group	Necessity of Involvement: Not an outspoken stakeholder
Community Librarian, Chris Walsh	Medium	High	Medium	Medium	Medium
Senior Planner, Hamilton Public library, Kimberly Silk	Medium	High	Low	Low	Low
Branch managers	Medium	High	High	Medium	Medium
Manager and member of DT Infrastructure department	High	High	High	High	High
Strategic Planning and Engagement , Krystin Parkinson	High	High	High	High	High
HPL Wi-Fi Users	Low	Low	Low	Medium	Low

Mapping

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Prepared by: In Ja



Tactics

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Prepared by: In Ja

Engagement Level	Tactics
<p>Engage</p> <p>Strategic Planning and Engagement Team, Manager & member of DT Infrastructure department and Branch managers are the group needing engagement.</p>	<ul style="list-style-type: none">• Appoint core members of each group as project members as they have a high willingness to engage and high expertise on the issues.
<p>Communicate</p> <p>HPL Senior Planner and Branch manager are the groups who need more communication than engagement.</p>	<ul style="list-style-type: none">• Request sponsorship to this group to help that the project goes in the right direction and gets advice in each stage of the gate review meeting.• Hold a conference to discuss issues and ideas for mutual understanding and to create solutions.
<p>Inform</p> <p>HPL Senior Planner and Wi-Fi users require information for the improved Wi-Fi service.</p>	<ul style="list-style-type: none">• Campaign the HPL's upgraded Wi-Fi service over the media

Scope

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In Scope

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Project Description:

Research Hamilton Public Library's public Wi-Fi service across all branches, including public spaces and bookmobiles. Examine the service in terms of coverage, signal strength, capacity and user experience. Report on findings and provide recommendations to improve the service across all branches and public spaces.

Project Benefits:

This project will analyze HPL's user data, revealing trends in session length, bandwidth demand, and user activity. After we have found the root causes of HPL's problems, our team will recommend the most effective solutions for the Wi-Fi system.

Project Deliverables:

Our project will ultimately deliver a set of recommendations for HPL to enact. We will look at solutions which involve technology, changing staff authorities, and implementation of equipment standards.

Success/Acceptance Criteria:

1. Wi-Fi 6 is active at all HPL branches
2. Equipment is replaced or upgraded in a uniform manner, with all branches of HPL having the same router capabilities.
3. Users would only need to accept the Terms & Conditions once per month. Data should show one agreement per IP address per month.
4. Wi-Fi signal would be available at full strength across entire property of each HPL branch, inside and outside the perimeters.
5. HPL is able to enact equipment and policy changes without involving the City of Hamilton.

Project Assumptions:

We assume that Wi-Fi usage at HPL will continue to rise, despite the current disruption of normal activity caused by the Covid pandemic.

Out of Scope

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This project will not include:

- Installation of new Wi-Fi equipment
- Writing of new standard equipment policy
- Programming any changes in Terms & Conditions system
- Writing new agreement between HPL and City of Hamilton regarding IT support & HPL authority
- There will be no field work done other than what the HPLs employees had to say regarding their experience at HPL

Project Constraints

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The largest constraint our project faced was due to the ongoing Covid-19 pandemic. Due to the risk of infection and transmission, we were unable to physically visit any branches of Hamilton Public Library. This prevented us from doing our own connection tests and performing location-based analysis of signal strength. In addition, we were unable to ask library visitors about their experiences with HPL Wi-Fi; this could have been a valuable resource for understanding the average user experience.

In interviewing Harmandeep Sharma from HPL, we learned of a hierarchical constraint in the organization of HPL. Tech support and policy changes all must be approved by the City of Hamilton itself, rather than HPL. This arrangement constrained our recommendations, as some actions are impossible for HPL to perform without City of Hamilton approval or involvement.

Risk Analysis

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Financial

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
Cost to upgrade to Wi-Fi 6	Financial loss as a result of the new system not operating as it should.	Negative	High	Low	Extensive testing prior to full implementation.
Unexpected Costs	Unforeseen costs during system upgrade that exceeds the planned budget for the project.	Negative	Medium	Low	Doing proper cost analysis and financial planning and making funds available for such uncertain costs.

Technological

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
Internet disconnections	There may be extended system interruptions/downtime during the Wi-Fi peak hours. This can lead to users not having access to Wi-Fi for a temporary time period.	Negative	Medium	Medium	Continually monitor the system during the and fix issues as they arise.
Accepting Terms and Conditions	The terms and condition agreement appears for a user each Wi-Fi session. Users experience is affected by this type of agreement happen for every session even if they use the library daily.	Negative	High	High	Update the terms so users do not have to accept the agreement so many times.

Political

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
Non Approval of the recommendation	The City of Hamilton does not believe the recommended solutions will justify implementation time and cost.	Negative	Medium	Low	Obtain defined guidelines from the City of Hamilton to ensure recommendations are in line with their vision.

Requirements

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
Remote Project	The Capstone project was completed by our team remotely due to the Covid-19 pandemic. This meant that our teams resources were the Internet and all the secondary data given to us. This risks limited our team from collecting data on site at the libraries.	Negative	Moderate	High	HPL sending out a survey to ask HPL members questions online. <ul style="list-style-type: none"> • Online polls/survey on the HPL website for anyone to answer • Data analyzation from the websites or email responses
Strategic Risks	This type of risk is errors relating to the strategic decisions of the recommendations. For example the business analysis team had recommended HPL to consider using Wi-Fi 6 but there is always a chance that the system is not a perfect fit for the Hamilton Public Library. With research done for our recommendations, its believed that Wi-Fi 6 could be a seamless addition but with integrating new technology with older technology can present risks.	Negative	High	Low	<ul style="list-style-type: none"> • HPL could survey libraries that are currently using Wi-Fi 6 • HPL could do many tests of the system as well as having scheduled maintenance testing

Business

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
Decline in membership/ Users of the Wi-Fi	The inability to provide reliable and accessible Wi-Fi will leave users dissatisfied and have them seeking other means of gaining access to free Wi-Fi. Results from the 2017 HPL user survey showed that 76 percent of users believe that having access to free Wi-Fi is important, which was ranked third in what users value in the services offered. Coupled with 65 percent of respondents indicating they would be encouraged to use the library more frequently if there was better Wi-Fi access.	Negative	High	Medium	Upgrade Wi-Fi system – the most recent version, Wi-Fi 6 provides faster throughput and less network congestion. Implement/Repositioning Access Points – these are used to extend wireless coverage which will provide Wi-Fi signals to areas with little or no connectivity.

Skills

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
Wi-Fi 6 installation error	In switching system over to new Wi-Fi 6, an error occurs leaving no internet access across HPL	Negative	High	Low	Keep previous system running in parallel until Wi-Fi 6 is operational
HPL in-house troubleshooting skill differences	With a change to HPL doing all IT troubleshooting in-house, there is a potential for gaps in skill sets from City of Hamilton IT	Negative	Low	Low	Ensure HPL IT staff are trained with correct protocols from City of Hamilton

Other

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Risk Name	Risk description	Positive or Negative	Risk Impact	Risk Probability	Risk mitigation
The Potential loss of HPL's value within the community	HPL has functioned to connect the diverse person in social groups and helped them to be harmonized in a community through many programs performed with Wi-Fi access. However, if the Wi-Fi connection is not stable and people get annoyed, they might lose the social activity groups in HPL and will lose the important value within the community.	Negative	High	Mid - High	<ul style="list-style-type: none">• Create more social group activities which don't require Wi-Fi service• Set up Wi-Fi booster in the social activity group room

Project Requirements

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- Project Charter
- Interview Analysis
- Data Analysis
 - HPL Wi-Fi Usage Trend From Y2015 To Y2019 Across all Branches
 - HPL Wi-Fi Usage Trend From Y2015 To Y2019 Top 5 Branches
 - HPL Wi-Fi Usage Analysis Q1 in Y2019
 - HPL Wi-Fi Peak Hours
 - HPL Wi-Fi Usage Analysis for Jan. In Y2020
- Use Cases and Activity Diagrams
 - Describing user HPL problem experience
 - Describing the Wi-Fi terms and conditions
 - Describing User Wi-Fi session

Project Charter

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<h2>Business Case</h2> <p>Aligned with Hamilton Public Library (HPL)'s strategic priorities "Learning and Innovative Organization", reducing barriers to using HPL Wi-Fi services would promote awareness of the library in the communities it serves.</p>	<h2>Team Members</h2> <p>Alex Hubling Mishal Kella Rachel Kolenko Andrea Thomas In Ja Yun</p>
<h2>Problem Statement</h2> <p>The users/members at the Hamilton Public Library are struggling with the "Term &Conditions" and not enough Wi-Fi range to cover the whole property because the HPL is limited by City of Hamilton control.</p> <p>The business analysts who are working with CityLab and the HPL are experiences issues of not up-to-date data and they are not able to do field research to assess the data.</p> <ul style="list-style-type: none">- Not Enough Coverage across all public spaces- Session Timeout<ul style="list-style-type: none">• Customers need to Submit " Agree T&C" every time they connect.• Not Flexible to provide separate Wi-Fi access (Internet Only) to external users at HPL for a set duration• Not many Stats or Usage reports are available or up to date.	<h2>Goal Statement</h2> <p>The clear understanding of the HPL public Wi-Fi network in terms of coverage, signal strength, capacity, connectivity, and user experience, noting inconsistencies and opportunities for improvement.</p> <h2>Stakeholders</h2> <p>Sponsors : Kimberly Silk , Senior Planner, Hamilton Public library Sukh Jatana, Manager of DT Infrastructure</p> <p>Stakeholders: Community(user/members), Librarian, Strategic Planning and Engagement Team, Branch Managers</p>
<h2>Deliverables</h2> <ul style="list-style-type: none">- Submission of the final report including action plans <ol style="list-style-type: none">1. Describing HPL's public Wi-Fi network status across all branches in terms of coverage, signal strength, capacity, connectivity, and user experience2. Recommending opportunities for improvement of the current status	<h2>Project Scope</h2> <p>In scope:</p> <ul style="list-style-type: none">-Analyze HPL Guest Wi-Fi coverage across all HPL public spaces.-Analyze UX using Guest Wi-Fi and accessing the internet-Provide Recommendation on Wireless Access Solution that would enhance coverage and UX. <p>Out of Scope:</p> <ul style="list-style-type: none">-Recommending Internet solution providers-Highly technical recommendations such as network equipment or configurations

Interview Analysis

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STRENGTHS	WEAKNESSES
On average the WiFi signal is steady	At peak hours speeds are slow at busiest branches
WiFi outages are uncommon	Users are required to accept T&Cs every WiFi session
HPL staff are available to create an IT support ticket for any issue	Concrete walls at some branches hinder WiFi signal
OPPORTUNITIES	THREATS
New WiFi equipment being tested at two branches	Large number of simultaneous users can strain WiFi
Extending range of WiFi to include entire property of library	Loss of users to better public WiFi spaces
New generation of WiFi could solve HPL's problems	System-wide upgrade would prove costly

Interview Questions for Harmandeep

Monday Nov. 9th, 2020

1. Tell us about your current day-to-day roles and responsibilities?
 - Harmandeep has only been with library for 1 year. He also does not talk with customers but he will hear problems from library staff members or through the technical issue tickets
2. What is your opinion regarding the current HPL Wi-Fi system?
 - a. Strength? Its good if you are in the library
 - b. Weakness? Dead zones and met with different vendors to help at the turner park and terry berry library. System is not able to bleed outside like into the parking lot
3. What type internet technology is currently being used?
 - The current technology is managed by the city when issues come up, the HPL staff must submit a ticket and wait for someone from the city to help.
 - There are two Wi-Fi available at the HPL, one is for staff and one is for guests.
4. What is your authority in terms of updating and improving the Wi-Fi system?
 - When it comes to updating or improving the system, management must work with the city of Hamilton to do any updates.
5. When was the Wi-Fi last updated and do you believe it is up to industry standards?
 - Harmandeep believes the system is pretty up to date
6. Would a new internet system be the answer to improving the Wi-Fi?
 - They aren't going to replace the existing infrastructure but update to a new system could potentially help with bettering the range of Wi-Fi
7. What level of customer interface did you experience pre COVID-19?
 - Not much
8. Has there been any research conducted on hardware and software to improve the user experience?
9. Why does the terms and conditions not remember the user?
 - The terms and condition policy issue is something the HPL managers are aware of and will overcome it when boss returns

10. Do you work directly with customer service to troubleshoot client issues?
 - Responding to customers through the HPL staff
11. What is current data usage limit and how many numbers of users?
 - Public computers at HPL have a time limit verse using your own device
 - No Wi-Fi in the any of the parking lots so they want to enhance the outdoor range
12. Who designed the user experience, and did the user have input on the design?
 - City of Hamilton
13. Has the HPL done any Wi-Fi signal or speed tests before?
 - It is unknown when the last update was done.
14. Are high data consumers speed throttled to control bandwidth?
 - Certain users do use a lot of data, but it is not an issue for the Wi-Fi system and there is no limit to data a customer can us.
15. Has there ever been any other past projects regarding improving the Wi-Fi?
 - Two pilot systems will be tested at the Terryberry library and Turner Park library. The Aruba solution from HPL and another system will be tested also will test out within the next month.
16. What would you currently recommend to HPL to ensure users are having the best possible experience?
 - Policies are Harmandeep's main concerns right now
 - Especially with new branches they are thinking about having the WiFi reach the surrounding parks, parking lot or near by bus stops
17. Extra information:
 - Adding access point is something they can do to eliminate the dead zone, but they must get approval from the city and it is not a main focus for them
 - Pilot projects are starting this month and they will evaluate the user experience, by listening to the staff of each library and staff will talk to members and ask them about any issues that come up.
 - New branch is being built in Parkdale area
 - If building is older concrete walls will block or make signals very weak
 - They are not notifying users of a new system and they are using all the existing cables/infrastructure
 - Waiting for answer in follow up email on how long each library computer lets you use it for and if you are allowed to refresh and join in again on the same computer. Also, more clarification as to why personal devices such a tablets or laptops will remember your policy sign in but not the hardwired computers provided?

Follow up email to Harmandeep and Answers

Dear Harmandeep,

On behalf of myself and the rest of our team, we would like to thank you for joining us on Monday morning. You gave use some great insights to the current Wi-Fi situation at the Hamilton public libraries and some of your own recommendations to improving the system.

In following our team just has a few final questions to clarify with yourself.

- How long does each library computer let you use it for?
- Are the users allowed to refresh and join in again on the same library computer?
- Finally, just to get some more clarification as to why personal devices such a tablets or laptops will remember your policy sign in but not the hardwired computers provided?

We appreciate your interests with our project and from our interview we have concluded that the main issues with the current Wi-Fi system are the terms and conditions policy as well as the range of the Wi-Fi for example not reaching the bus stops or parking lots of the library's.

Please feel free to reach out with any other comments or questions.

Best,

Rachel Kolenko

Mohawk College Business Analysis Student

Answers

- How long does each library computer let you use it for? Right now each library member gets 1 hour session and 2 hour limit per day.
- Are the users allowed to refresh and join in again on the same library computer? As long as there is at least 1 computer available for someone else to use, member's session will automatically extend to 1 more hour. If not member will have to go see info desk staff to extend the time when computer becomes available.
- Finally, just to get some more clarification as to why personal devices such a tablets or laptops will remember your policy sign in but not the hardwired computers provided? Hardwired computers always asks members to accept the HPL policies when they sign-in.

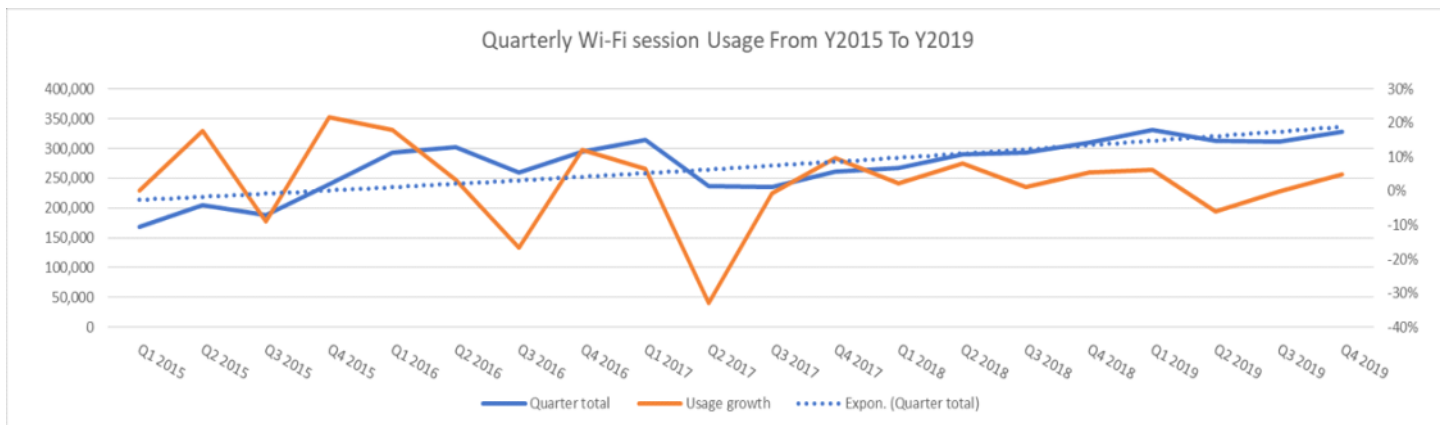
Interview Responses

Recurring Responses	Streng	Challen	Opportun	Threa	UX	Technolo
HPL and libraries in general are focused in reducing the barriers for people. The ideal situation would be if people are able to intuitively connect and access the resources that they need with certainty without any unnecessary steps, or barriers, or issues limiting or restricting.		X	X		X	X
Libraries strive to provide equitable service to all segments of society, which is why they have people with a wide range of skills and technological devices who are using our spaces. Considerations need to be made in supporting a wide			X		X	X
Intellectual freedom and privacy is of great importance to the libraries. Libraries would not want to consider restricting access to our content or information and they hesitate to put similar content filters. Also, so they don't collect any	X					X
The existing Wi-Fi solution is at its end of life		X				X
There is feedback that the customers are not happy with the current WiFi. Better service needs to be provided		X	X		X	
Want to be more innovative, offering things like push notifications, (and other new services) etc. Create a better user experience			X		X	X
Outages don't happen to often	X					X
Each customer has a max of 6 hours per day to use the wifi, this is the daily limit	X				X	
HPL wants to expand and have the same configuration across all branches		X	X			X
There isn't much detail on the dead spots currently		X				X
If building is older concrete walls will block or make signals very weak.		X				X
Wi-Fi may be slow depending on different frequency and channels, collision when lot of people access the network.		X				X
The system is outdated in some areas			X			X
There was an event with over 200 people and people complained that there was not good signal and people couldn't connect to the wifi		X			X	X
People who struggle connecting to the wifi, generally have older devices and need help		X			X	
They offer WiFi for 24h, not only when the library is open to the public	X				X	
Performance problems: high drops rates in signals.		X				X
multiple time connectivity after each session						
Multi-levels might cause the poor connectivity		X				X
Guest accepting the T&C is inconvenient to return guests		X			X	
In some devices, the pop up T&C doesn't appear automatically, and in this case, the guest must go to HPL webpage in order to accept the T&C and connect to		X				X
When it comes to updating or improving the system, management must work with the city of Hamilton to do any updates. The WiFi is mostly under control of the City of Hamilton.		X				X
They aren't going to replace the existing infrastructure but updating to a new system could potentially help with bettering the range of WiFi.			X			X
Adding access point is something they can do to eliminate the dead zone, but they must get approval from the city and it is not a main focus for them.		X	X			X
Some branches may have budget constraints while others don't have.		X				
Other concern is security as majority of the customer use Wi-Fi to access their private matter such as sending documents, banking and many more.				X		X
We are very careful as anyone who is subject to information, privacy and protection needs to be careful about what information they keep because we shouldn't be keeping information on private citizens. We don't keep our web browsing history for very long because it's privacy.		X		X		X
The way HPL gets the data is currently very problematic. There are files for each and every router which are essentially CSV files that we then have to patch together and they are emailed to our email weekly on Sundays. We have to Patch together each router CSV and then we have a process where if a Mac ID has been registered in a staff only area we then add that to the staff exclusion list and then we sort through them all.		X				X
Problem with the usage data is that it isn't the easiest and it's third party		X				X

Data Analysis

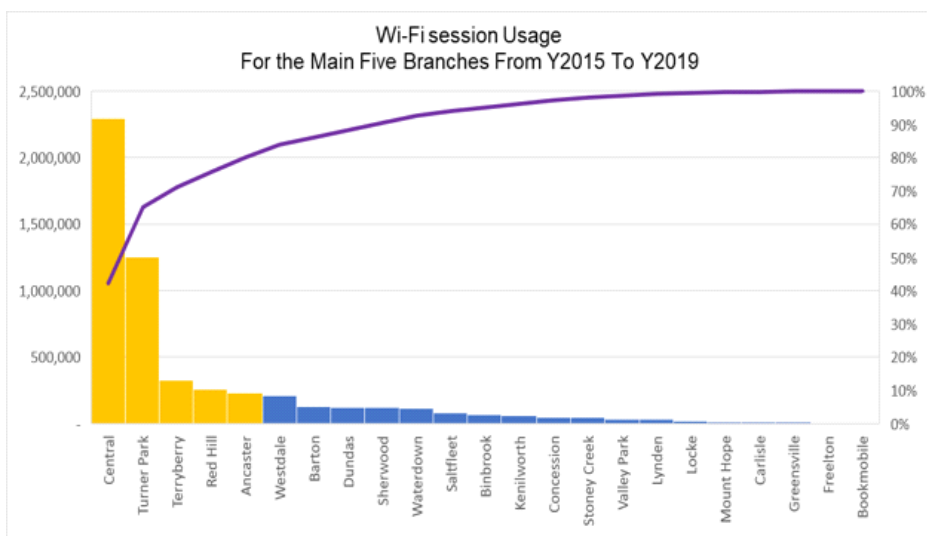
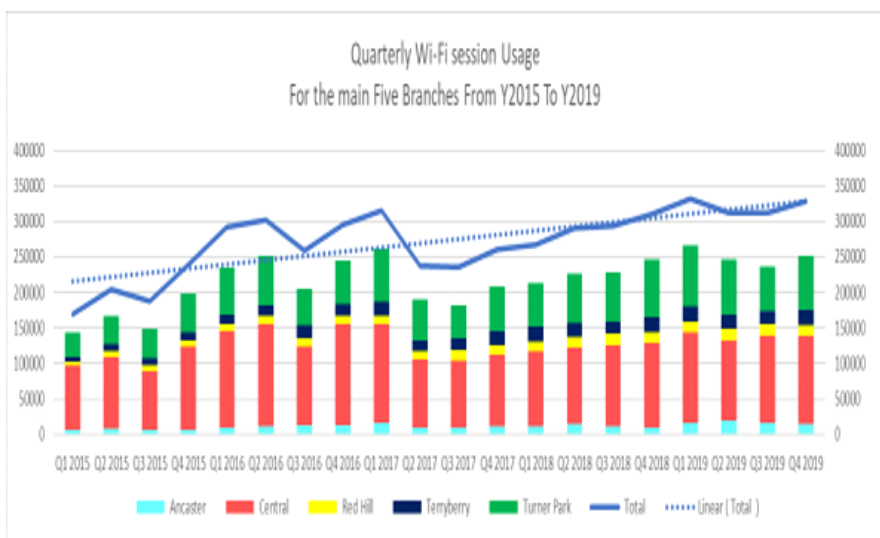
Wednesday, December 2, 2020 9:28 PM

HPL Wi-Fi Usage Trend From Y2015 To Y2019



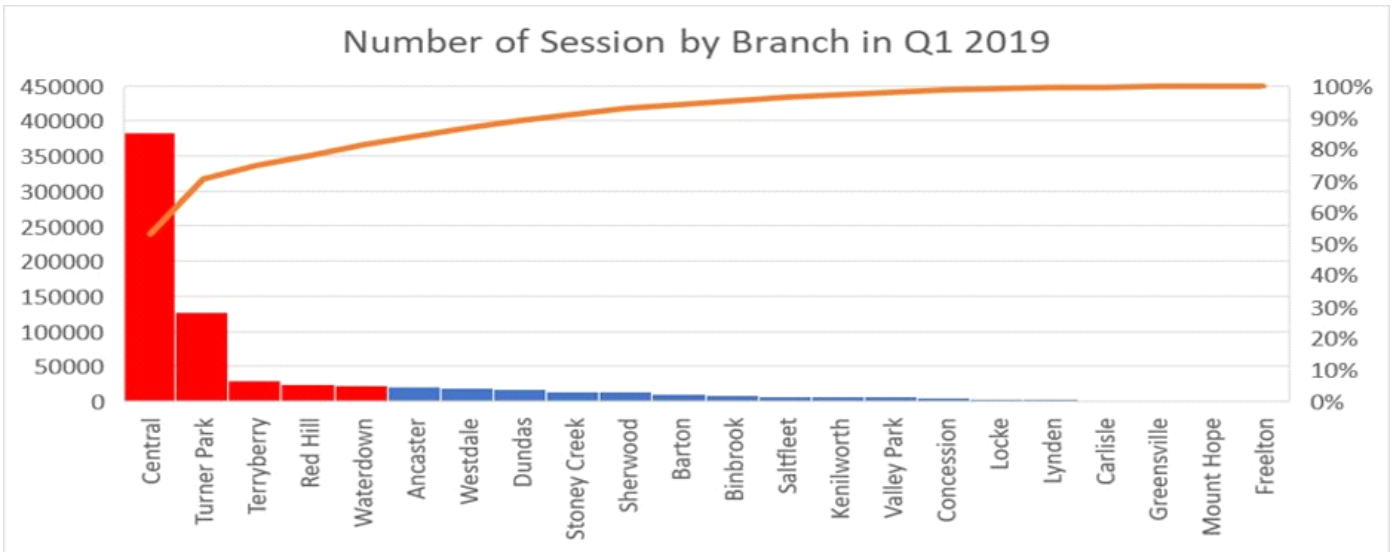
Despite variation from quarter to quarter the demand for Wi-Fi at HPL has increased over the past five years. HPL can anticipate further growth in Wi-Fi demand in future years.

HPL Wi-Fi Usage Trend From Y2015 To Y2019



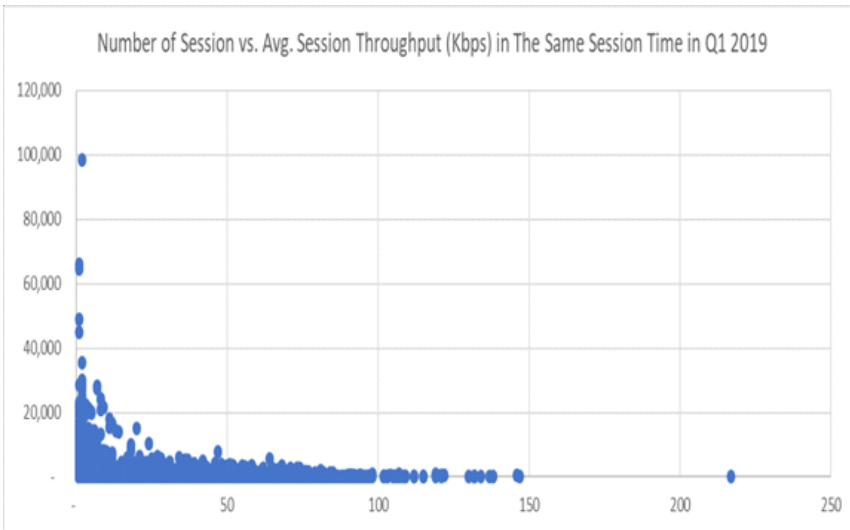
Internet traffic from the five most visited HPL branches makes up approximately 80% of all HPL internet data.

HPL Wi-Fi Usage Analysis Q1 in Y2019



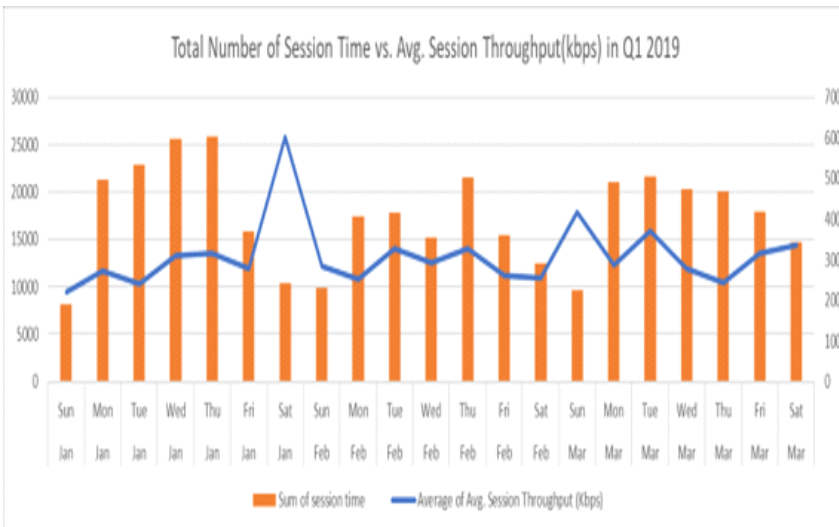
The five branches with the highest Wi-Fi demand in Q1 2019 were Central, Turner Park, Terryberry, Red Hill, and Waterdown.

HPL Wi-Fi Usage Analysis Q1 in 2019



The average session throughput(Kbps) is inversely related to the number of Wi-Fi sessions in the same session period.

As the number of Wi-Fi sessions is higher, the average session throughput(Kbps) is lower.



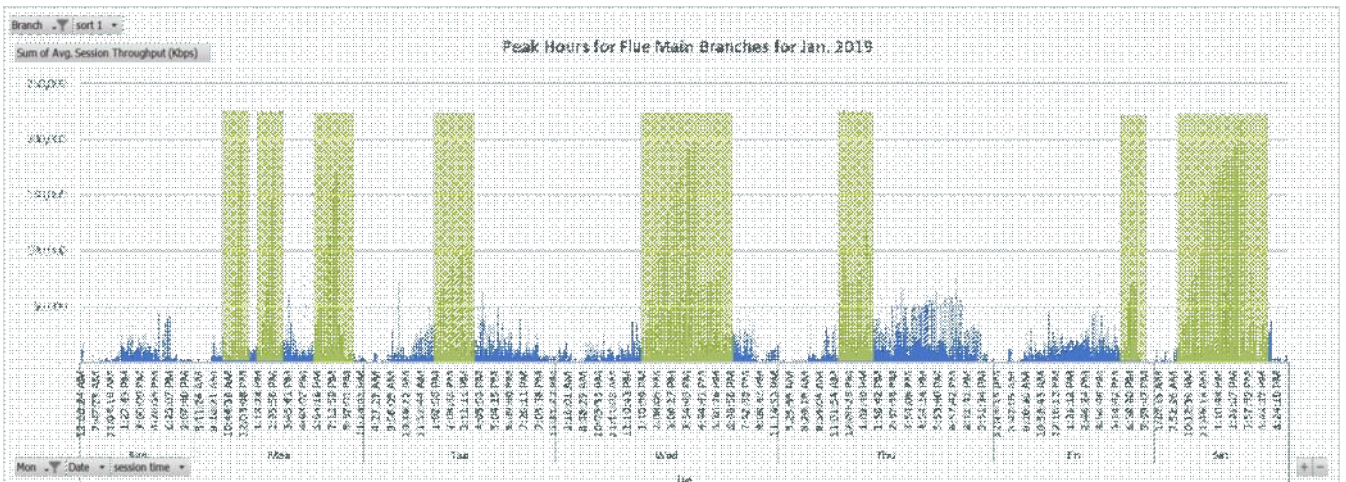
The average session throughput (Kbps) is higher on weekends, when demand is lower than midweek.

HPL Wi-Fi Status

Radio Type & Frequency of Five Main HPL Branches

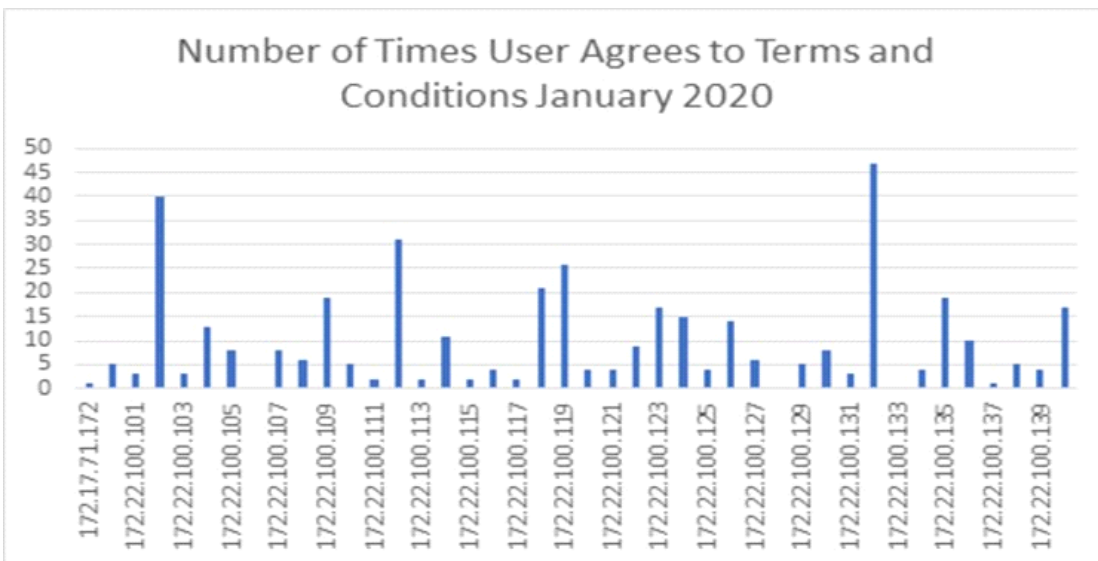
Radio Type & Frequency	Branch					Wi-Fi Speed	Theoretical	Realistic
	Central	Turner Park	Terryberry	Red Hill	Waterdown			
802.11a						802.11a	54 Mbps	20 Mbps
802.11b						802.11b	11 Mbps	5.5 Mbps
802.11ac						802.11ac	1,300 Mbps	200 Mbps
802.11g						802.11g	54 Mbps	20 Mbps
802.11n(2.4GHz)						802.11n	600 Mbps	100 Mbps
802.11n(5GHz)								

Radio Type	Pros	Cons
802.11a	1. Fast maximum speed 2. Regulated frequencies prevent signal interference from other devices	1. Highest cost 2. Shorter range signal that is more easily obstructed
802.11b	1. Lowest cost 2. Signal range is good and not easily obstructed	1. slowest maximum speed 2. Home appliances may interfere on the unregulated frequency band
802.11ac	1. offers improved bandwidth and more flexibility through simultaneous connection support. 2. Backwards compatibility allows use of existing technologies	1. Dual bands mean increased cost 2. Still prone to interference on the 2.4GHz frequency
802.11g	1. Fast maximum speed 2. Signal range is good and not easily obstructed	1. Costs more than 802.11b; appliances may interfere on the unregulated signal frequency
802.11n	1. Fast maximum speed and best signal range 2. More resistant to signal interference from outside sources	1. Costs more than 802.11g 2. The use of multiple signals may greatly interfere with nearby 802.11b/g based networks



An analysis of time-of-use shows clear peak periods. Demand is highest and speeds are lowest during these times. HPL must ensure peak demand can be met at all times.

HPL Wi-Fi Usage Analysis for Jan. In Y2020



One user accessed the system 49 times (highest for the month), which means having to agree to the terms and conditions 49 times in January 2020.

Use Cases & Activity Diagrams

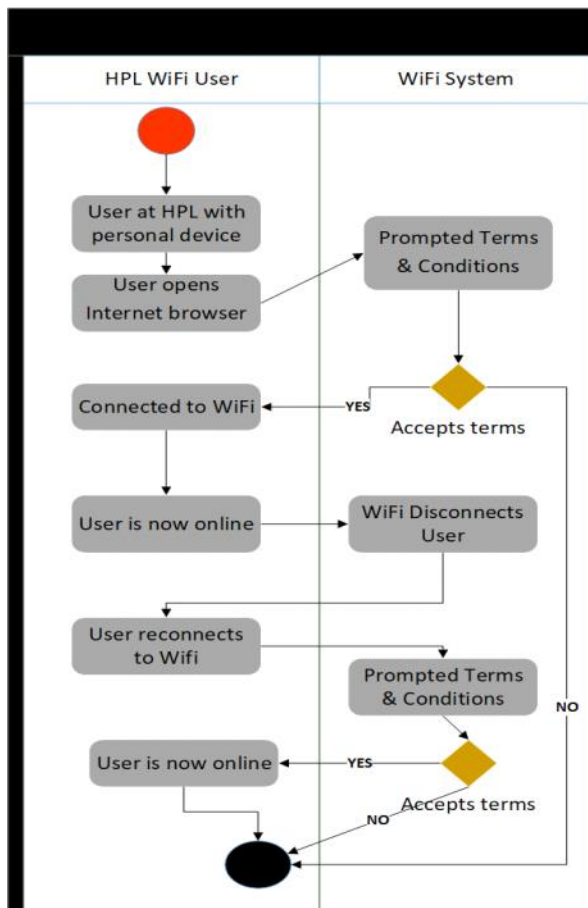
Sunday, November 15, 2020 1:29 PM

Business Use Case	Actors	Brief
Wi-Fi terms and conditions	HPL user Wi-Fi system	The user goes to the Hamilton Public Library to use the Wi-Fi and must agree to the Terms and Conditions for each session.
Wi-Fi limited range	HPL user Wi-Fi system	The HPL user is unable to connect to the Wi-Fi system outside of the library in the surround area such as the bus stops, parking lot, parks or sidewalks.

Use Case – Describing User HPL Problem Experience

Use Case Name:	Wi-Fi Session															
Scenario	The HPL Wi-Fi user is on site attempting to use the Wi-Fi services. They open their personal device and wish to access the internet.															
Brief Description:	The HPL Wi-Fi user opens their personal device and attempt to use the Wi-Fi system. They are able to connect once they accept the terms and conditions but have been soon disconnected from the Wi-Fi. Once they refresh their Internet page they are prompted with the terms and conditions for a second time. The libraries Wi-Fi system also does not have a range reaching outside of the building. If the HPL user leaves the building, and attempts to sign back onto the Wi-Fi they will be prompted with the terms and conditions.															
Actors:	HPL user or member or work, school for personal use Wi-Fi system															
Related Use Cases:	<ul style="list-style-type: none"> • Limited time allowed on Wi-Fi • Librarian reporting troubleshooting uses 															
Pre Conditions:	The HPL user would benefit from having the Wi-Fi system reach beyond the inside of the library. For example, at the bus stop in from of the library. As well as the need for better connectivity overall.															
Post Conditions:	The HPL user is restricted by terms and conditions and is limited to the range effecting their experience.															
Flow of Activities:	<table border="1"> <thead> <tr> <th>Actors</th> <th>System</th> </tr> </thead> <tbody> <tr> <td>1. Users are at HPL with their personal device.</td> <td>1. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi.</td> </tr> <tr> <td>2. The user opens the Internet browser</td> <td>2. Wi-Fi system disconnects the user.</td> </tr> <tr> <td>3. They connect to the Wi-Fi and user is online.</td> <td>3. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi again</td> </tr> <tr> <td>4. Once user was online they were disconnected at peak hours.</td> <td></td> </tr> <tr> <td>5. They reconnect to the Wi-Fi.</td> <td></td> </tr> <tr> <td>6. User is now online.</td> <td></td> </tr> </tbody> </table>		Actors	System	1. Users are at HPL with their personal device.	1. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi.	2. The user opens the Internet browser	2. Wi-Fi system disconnects the user.	3. They connect to the Wi-Fi and user is online.	3. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi again	4. Once user was online they were disconnected at peak hours.		5. They reconnect to the Wi-Fi.		6. User is now online.	
Actors	System															
1. Users are at HPL with their personal device.	1. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi.															
2. The user opens the Internet browser	2. Wi-Fi system disconnects the user.															
3. They connect to the Wi-Fi and user is online.	3. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi again															
4. Once user was online they were disconnected at peak hours.																
5. They reconnect to the Wi-Fi.																
6. User is now online.																
Exception Conditions:	City of Hamilton controlling the Wi-Fi system.															

Activity Diagram

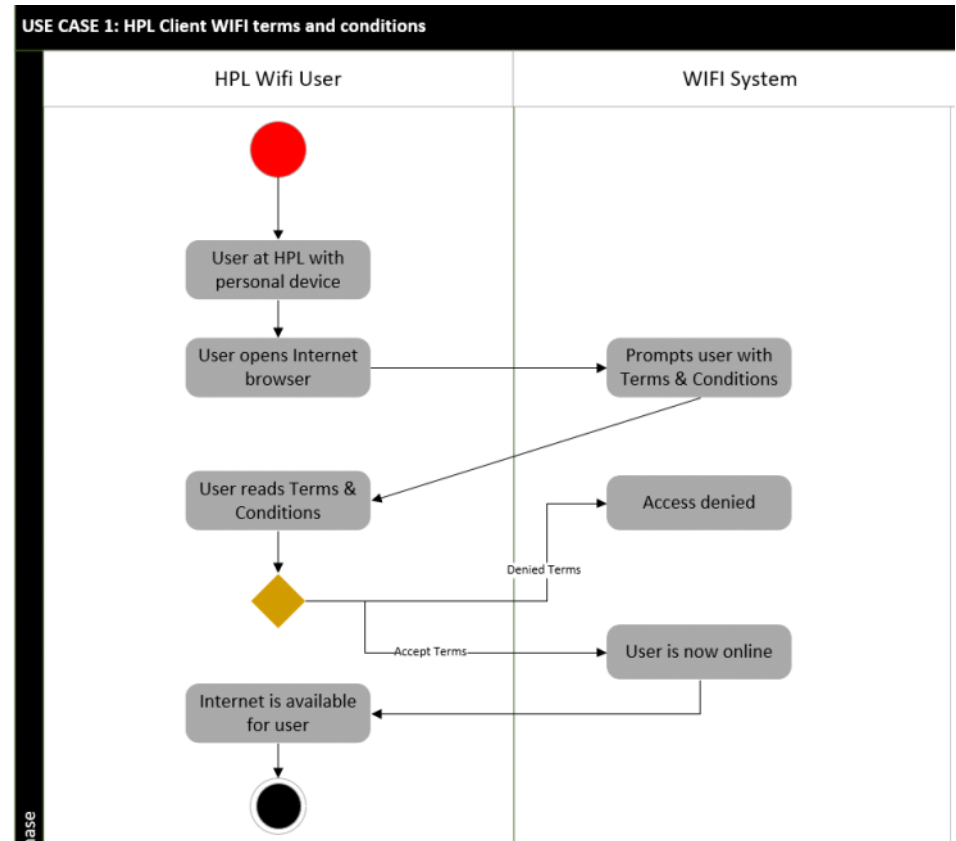


Use Case 1 – Describing the WiFi terms and conditions

Business Use Case	Actors	Brief
Wi-Fi terms and conditions	HPL user Wi-Fi system	The user goes to the Hamilton Public Library to use the Wi-Fi and must agree to the Terms and Conditions for each session. If the user is disconnected they will be asked to sign into the terms and conditions again.

Use Case Name:	HPL Client Wi-Fi terms and conditions
Scenario:	Errors with the HPL Wi-Fi system terms and conditions
Triggering Event:	When the user is on their device such as a laptop, smart phone or tablet, they are prompted to accept the HPL terms and conditions every time the user opens and closes their device.
Brief Description:	The user has come to the Terry Berry Hamilton Public Library to do schoolwork. They are asked to accept the terms and conditions every time they sit down and open their laptop.
Actors:	HPL users or members for work, school for personal use.

Related Use Cases:	<ul style="list-style-type: none"> • Limited time allowed on Wi-Fi • Librarian reporting troubleshooting uses
Pre Conditions:	HPL user or member need to access the Wi-Fi system
Post Conditions:	User experiences Wi-Fi system issues User reports issues to library staff
Flow of Activities:	<p>User</p> <ol style="list-style-type: none"> 1. HPL user opens laptop to begin work. 2. User opens browser. 3. User is requested to accept the terms and conditions for entrance to the Wi-Fi. 4. User accepts request to use the Internet. <p>System</p> <ol style="list-style-type: none"> 1. Wi-Fi system prompts user to accept the terms and conditions to enter the Wi-Fi. 2. System opens upon acceptance. 3. System limits user to a 6-hour limit per day on your personal device. 4. When user's device goes to rest mode or they close their laptop they will be prompted with the term and conditions each time. 5. term and conditions prompt appears each time the laptop screen is closed.
Exception Conditions:	User disagrees with the Terms and Conditions



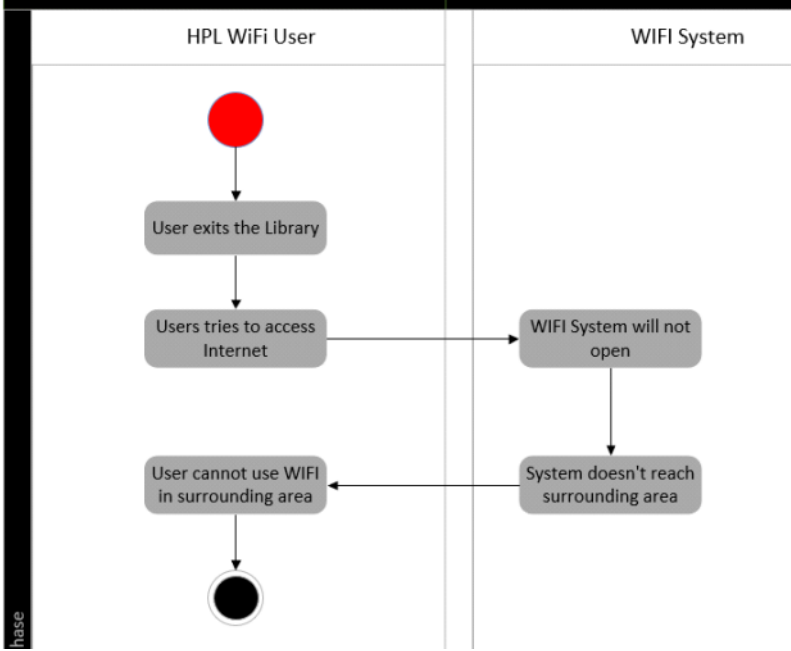
Use Case – Describing User Wi-Fi sessions

Business Use Case	Actors	Brief
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Wi-Fi limited range	HPL user Wi-Fi system	The HPL user is unable to connect to the Wi-Fi system outside of the library in the surround area such as the bus stops, parking lot, parks or sidewalks. The libraries Wi-Fi range is unable to reach outside of the building and there has been an observation that room behind concrete walls have presented issues as well.
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Use Case Name:	HPL Client Wi-Fi sessions & dead zones
Scenario:	Having the Wi-Fi system range accommodating multiple users at every indoor and outdoor space of the library.
Triggering Event:	The demand for Wi-Fi access is increasing around the library. Users wish to have an extensive Wi-Fi range. This would help complete a very effective user experience.
Brief Description:	The libraries Wi-Fi system does not have a range reaching outside of the building. As well as having an increase of users inside, effects certain areas creating dead zones within the library. Having the Wi-Fi range reach the outside of the building would be beneficial to users.
Actors:	HPL user or member or work, school for personal use. Wi-Fi system
Related Use Cases:	<ul style="list-style-type: none"> • Limited time allowed on Wi-Fi • Librarian reporting troubleshooting uses
Pre Conditions:	The HPL user would benefit from having the Wi-Fi system reach beyond the inside of the library. For example, at the bus stop in from of the library.
Post Conditions:	The HPL user is restricted and limited to the range effecting their experience.
Flow of Activities:	<p>User</p> <ol style="list-style-type: none"> 1. Each library user/member exits the library. 2. The user/member wishes to use their smart phone at the bus stop. 3. Signal will not reach their device. <p>System</p> <ol style="list-style-type: none"> 1. System range is limited to inside the library only. 2. Range does not reach the bus stops, parking lots, or surrounding grounds.
Exception Conditions:	n/a

Use Case 2: HPL client WiFi Range



Capstone Requirements Summary

Tuesday, November 24, 2020 1:10 PM

Students have worked in teams applying what they have learned about how to make data-driven decisions to a real business case Enhancing Wi-Fi at HPL. The Capstone requirement for Facilitating Change (BUSN10258) will include the team devising a plan of action for optimizing data itself to provide key insights and analysis, and to describe the interaction between stakeholders.

Team Charter

Sunday, November 15, 2020 1:35 PM

Participation

Add your expectations for participation.

- Expectations for the team are to keep in touch with teammates
- We have agreed upon tasks for each team member with a due date and time
- Support teammates ideas and meetings in general
- Fair participation among team members

Communication

Add your agreed to expectations for team communication.

- For optimal communication team has agreed to ask clarifying question or ask for clarification if needed
- To communicate ideas to the team by participating in brainstorming
- Supportive and respectful communication in meetings as well as over WhatsApp
- Communicate to team if unable to attend a meeting or will be late for a meeting

Meetings

Share your team meeting schedule and goals here.

- Join meeting on team respecting others agendas
- Accomplish goals set for the meeting
- At least 2 meeting a week usually at 7 pm but to keep in contact over WhatsApp
- When conducting a presentation or when having a formal meeting with a Professor to meet the night before for prep
- To be flexible in terms of meeting
- Team agrees to use the brainstorming technique

Conduct

How does the team agree to conduct themselves?

- Team has agreed to operate on a mutual respect and understanding.
- Work as equal members of a team
- We will operate in a professional and inclusive manner

Conflict Resolution

How does the team agree to conduct themselves?

- Team has agreed to always hear out any issues presented
- Leave out any personal bias or feelings that could potentially hurt another team member
- Have a middle ground for conflict resolution by taking into considerations everyone ideas if a decision cannot be made

Team Members

Adding your name to this document is the same as signing

Alexander Hubling

Andrea Thomas

In Ja Yun

Mishal Kella

Rachel Kolenko

Meeting Agenda and Meeting Minutes #1

Sunday, November 15, 2020 1:36 PM

Prepared by: Rachel

Submit Capstone Project Status Report and Meeting Minutes to group assignment folder

Meeting Date: 02-12-2020 @ 6:30pm Meeting duration: 60 minutes Meeting Location: Zoom
Meeting Attendees: Andrea, Alex, Mishal, Rachel, In Ja

TEAM PROJECT MEETING

Agenda:

Introduction

Run down list of deliverables for 10140 Strategy

Review content already partially complete

Determine work required on other portions

Plan next meeting date and time

Meeting Minutes:

- Decision made
- Next step
- Action item

Meeting host: Rachel

Meeting start time: 6:30 pm 2020-10-02

1. Team divided executive summary between Andrea and Rachel
2. Latest recommendations will be discussed in the next meeting and then incorporated into the Quality Assurance section
3. Alex will work on scope (in-scope & out-scope). Team had discussed project constraints.
4. In ja is going to update the stakeholder section with the "HPL Wi-Fi user" as well as tactics
5. Risk section was divided between everyone. Risk analysis table format will be upload.
 - a. Added risk points
 - i. Financial regarding the Wi-Fi 6 cost by m
 - Political regarding city of Hamilton control over HPL library by m
 - Technology T&C risk
 - Business risk out of some services
 - Skills risk central library problem
 - Discussing charter and qualitative measure for next meeting
 - Qual endorsement request
6. Next meeting date: Friday December 4th, 2020 @ 7pm
 - Discussion points:
 - Team Contract collaboration
 - Quality Assurance excel sheet collaboration

- Actions Items:
 - Complete project sections by Monday 7th by 1pm

Meeting Agenda and Meeting Minutes #2

Sunday, November 15, 2020 1:36 PM

Prepared by: Rachel

Submit Capstone Project Status Report and Meeting Minutes to group assignment folder

Meeting Date: 04-12-2020 @ 7:30pm Meeting duration: 60 minutes Meeting Location: Zoom

Meeting Attendees: Andrea, Alex, Mishal, Rachel, In Ja

TEAM PROJECT MEETING-Quality Assurance

Agenda:

Introduction

Any questions or comments to begin

Collaborate team charter

Prepare any extra tasks for Monday DRAFT meeting with Lisa at 1:15pm

Meeting Host: Rachel

Meeting duration: 35 minutes

Meeting Minutes:

- No initial questions
- Team discussed and collaborated on all of the main points we want to include on our team charter
- A document was filled out by Rachel on MyTeams under the CAPSTONE folder titled team charter capstone with all the ideas from the meeting
- Team has agreed to add to document if we missed any points.

- Team has agreed to have a meeting to collaborate our excel document for the Capstone on Dec. 6th, 2020
- Rachel will start a lessons learned document on MyTeams that team will discuss at meeting on Sunday the 6th

- For recommendations
 - On capstone team will explain how improving the Wi-Fi will help to overall user experience

- Actions Items:
 - Complete project sections by Monday 7th by 1pm
 - Add graphs and charts to requirements section

Lessons Learned

Sunday, November 15, 2020 1:37 PM

Project: HPL Wi-Fi Improvement	
Objectives: Recommend solutions to HPL's Wi-Fi problems	
Team Members: Alex Hubling, Andrea Thomas, Mishal Kella, In Ja Yun, Rachel Kolenko	
Project Description and Key Lessons-Learned	
Brief description of Project	Examine HPL's Wi-Fi system and its user experience in order to recommend solutions for common complaints.
Key project successes	Our team successfully drew conclusions from analysis of HPL's user data, allowing us to generate several key recommendations for improving the Wi-Fi system.
Project short comings and solutions	<ul style="list-style-type: none">-Our team was unable to prioritize and select stakeholders to interview; we were given a preselected interviewee.-Our team was unable to meet in-person, and relied on Zoom video calls for both team meetings and interviews.-Some group meetings ran for multiple hours; were productive but not focused.
Lessons Learned	<ul style="list-style-type: none">-In-person meetings may become rare in the future, so videoconferencing skills are crucial for team projects.-Ideal stakeholders may not be available for interview due to structural limitations.
Follow-up actions	<ul style="list-style-type: none">-Request a follow -up meeting with interviewee rather than email only.-Keep meetings to a maximum length and on a schedule.

Control Plan

Sunday, November 15, 2020 1:38 PM

See instructions in MS Excel file

https://mohawkcollege365-my.sharepoint.com/:x/g/personal/001108340_mohawkcollege_ca/Eagp61_eAKVKiEtqxUcyEI0BZ-gE-ZWHZ9iF0dsi9I4SZA?e=0Q9cwD

LinkedIn Project Statements

Sunday, November 15, 2020 1:39 PM

Student Name	LinkedIn Profile URL
Alexander Hubling	https://www.linkedin.com/in/alex-hubling-4830451b7/
Mishal Kella	https://www.linkedin.com/in/mishal-kella-862259183/
Rachel Kolenko	https://www.linkedin.com/in/rachel-kolenko-065ba6180/
Andrea Thomas	https://www.linkedin.com/in/andrea-thomas-bb1983193/
In Ja Yun	https://www.linkedin.com/in/in-ja-yun-81029a119/

Appendices

Monday, November 30, 2020 12:11 PM

Appendix 1: HPL Wi-Fi Improvement Infographic

Appendix 1

