Wio Link For SVH

GNG 2101 - Deliverable F

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Table of contents

Introduction

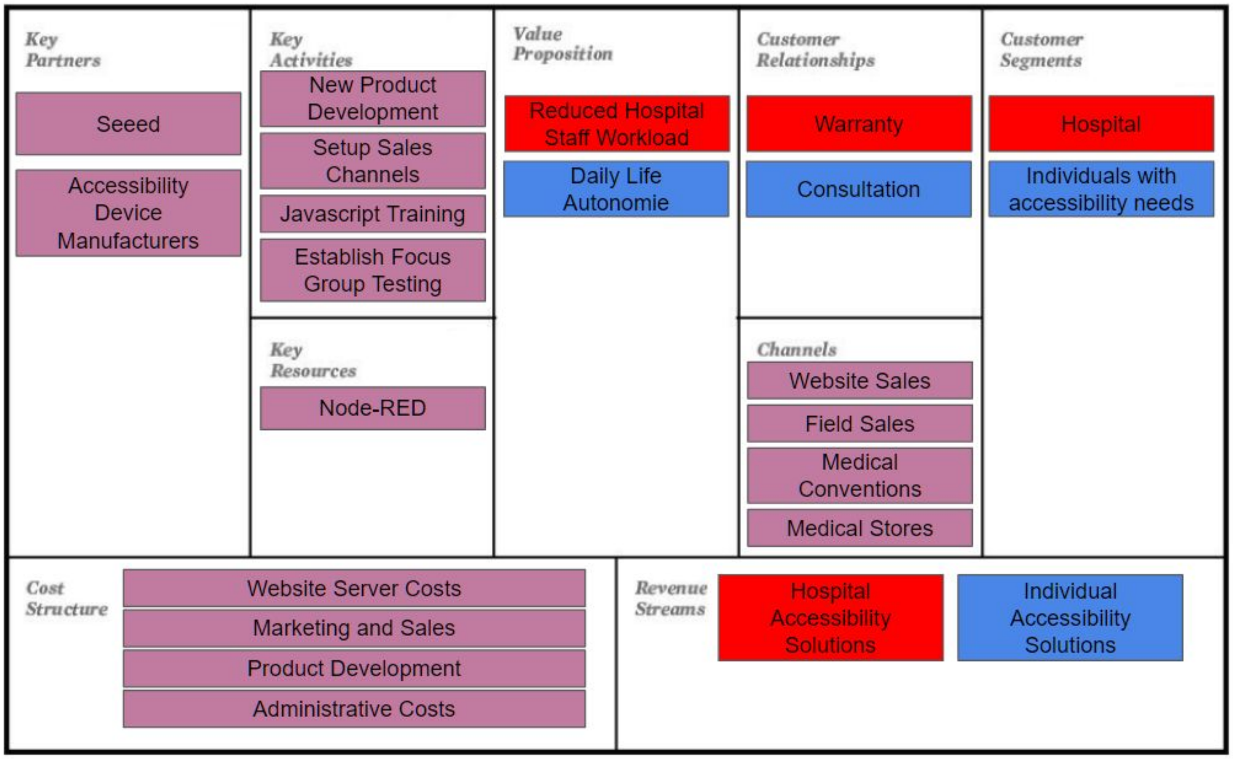
The objective of this document is to determine a business model that would be appropriate for the team’s final product and elaborate on that model by developing a business model canvas. In order to achieve this, an appropriate business model will be selected and discussed. Next, a business model canvas will be developed and it’s core assumptions will be outlined. Once complete, these core assumptions will be analysed to determine the models’ feasibility.

Chosen Business Model

We have selected a Brick and Mortar business model. This model was selected because it best accommodates our customers. Given the conditions imposed upon accessibility patients, many of them are unable to work. This indicates that their disposable income is relatively low. Low disposable income eliminates other models that rely upon recurrent user spending. Likewise, hospitals are very conscious of their spending and value low cost solutions.

Our business strategy would be to sell low feature versions of our product at a low cost, develop new features, then offer upgrades options to clients who could afford them. In theory, mass dissemination of our low feature version would generate interest in our upgrade options allowing the business to scale.

Business Model Canvas



Key Partners
Seeed
Accessibility Device Manufacturers

Key Activities
New Product Development
Setup Sales Channels
Javascript Training
Establish Focus Group Testing

Key Resources
Node-RED

Value Proposition
Reduced Hospital Staff Workload
Daily Life Autonomie

Customer Relationships
Warranty
Consultation

Channels
Website Sales
Field Sales
Medical Conventions
Medical Stores

Customer Segments
Hospital
Individuals with accessibility needs

Cost Structure
Website Server Costs
Marketing and Sales
Product Development
Administrative Costs

Revenue Streams
Hospital Accessibility Solutions
Individual Accessibility Solutions

<u>Who</u>

Customer Segments

The two main customer segments of our chosen market are hospitals and individuals with accessibility needs. Hospitals would be considered a customer segment since they treat patients with accessibility needs. Given that they treat individuals who are our targeted end users, they may be interested in a product that would mutually benefit themselves and those patients. Individuals with accessibility needs would be another customer segment since they are our targeted end users. Our most important customers are hospitals since they would purchase our solution at a higher volume compared to individuals with accessibility needs. This is because a single hospital would purchase multiple solutions to service several patients compared to one individual purchasing a single solution for themselves.

Customer Relationship

Our two main customer relations strategies would be warranty offerings and consultations. Warranty offerings would be employed to appease the hospital customer segment given that they have high standards and expect their devices to function in order to treat their patients. Additionally, it would enable hospitals to purchase our solution knowing that, in the event of a malfunction, their investment would not be completely wasted. The consultation strategy is aimed mostly at individuals with accessibility needs. It would allow our company to assess which accessibility device they are currently using and how best to integrate our solution into their daily lives.

Channels

The four main channels that we would employ are website sales, field sales, medical conventions, and medical stores. Website sales would be driven primarily by online advertisement and social media presence. These advertisements would direct internet traffic to our company website. This website would be a lean design featuring the product and it's value propositions to individuals and hospitals. Field sales would be a channel involving sales staff approaching our target customers and selling out products. This channel is primarily aimed at hospitals since they can be easily located and approached. Medical conventions such as the Health IT Conference Ontario provide product demonstration opportunities for technical healthcare products. Medical supply stores such as Canada Care Medical Inc sell medically related products as well as accessibility products. Given that our product falls within their usual inventory, it would be possible to use such stores as a sales channel.

What

Value Proposition

Our value proposition to hospitals would be the following. For hospitals that need to treat accessibility needs patients, we provide a user interface to allow those patients to interact with their environment unlike a nurse on call. We do this by allowing patients to call a nurse, control their tv channel, and adjust their tv volume independently. Essentially, the reason that our product would be valuable to hospitals is that it would reduce the amount of work that nurses are required to do. This in turn allows hospitals to avoid hiring additional staff or even to reduce their number.

Our value proposition to individuals with accessibility needs would be the following. For individuals with accessibility needs, we provide a user interface to allow you to interact with your environment unlike a personal support worker. We do this by enabling you to control your tv channels and adjust your tv volume. The value proposition in this case is that it provides individuals in such circumstances with autonomie and reduces the workload for personal support workers. Reducing the amount of work required from personal support workers would allow the end user to save money previously spent on such services.

How

Key Partners

Our Keyparters are Seeed and Accessibility Device Manufacturers. Seeed is the company that created the Wio link and is thus a key partner since our User interface is designed to work with their microcontroller exclusively. Without Seeed, the product would not be able to function. Accessibility device companies would be a key partner since it would help scale the business. The initial solution that our company would offer is the ability to control a user interface to interact with one's environment using an accessibility device. The solution sold would be our user interface and a Wio Link Microcontoler. This solution is designed to work with existing accessibility devices however, it would require some attunements to ensure that Node-RED would work with a given device. In later iterations, our company would partner with accessibility device manufacturers to sell a device directly compatible with our User interface without the need for adjustments. In other words, a partnership with accessibility device companies would allow us to sell a complete solution to our clients.

Key Activities

The Key Activities of our company would include new product development, sales channels setup, javascript training, and establishing focus group testing. New product development is a key activity since without a product to sell, the company cannot generate revenue and would dissolve. Sales channels setup is a key activity as it would allow the company to sell its products to our customers. Without sales channels, it would be difficult for our target customers to be aware of our product. Javascript is used in Node-RED to create custom functions outside of what has already been created. Javascript training is thus a key activity since it will allow our company to fully exploit Node-RED's potential. Fully exploiting Node-RED would be essential to customizing and developing our product. Establishing focus group testing is a key activity since it would enable us to test our product and receive feedback directly without releasing an incomplete product to the market. Without focus group testing, the product might be ill suited to our intended end user.

Key Resources

Node-RED is a key resource to our company since it enables us to develop our product. Specifically, our user interface is developed on the Node-RED Dashboard functionality. Without Node-RED, we would be unable to develop our product and our company would be unable to function.

How Much

Cost Structure

The four main costs associated with this product are website server costs, marketing and sales, product development, and administrative costs. Website server costs are fixed and won't vary as the product scales. This would be the case since the product would not benefit from website features beyond selling and descriptions. Marketing and sales would be variable due to expenses related to advertising and employee travel costs. The cost of marketing and sales would increase as the product scales since the company would need to increase the volume of sales to meet the increased volume of production. This would involve an increase to the advertisement budget and additional hiring of sales staff. Product development would be a variable cost. The cost would vary as initially, staff would need to be trained to use Node-RED as well as Javascript. Later, further variability would be experienced due to the nonlinear nature of developing software products. As the product scales, additional staff would be hired to increase the speed of new feature development to offer upgrade packages to existing customers. Administrative costs are variable since human resourcing costs would increase with product scaling due to an increased hiring of employees. Expenses related to administration would also increase as the amount of equipment purchased would meet the increase in staff.

Revenue Streams

The business will earn money through hospital accessibility solutions and individual accessibility solutions. Hospital accessibility solutions will be priced according to the amount of money saved by our solution. Essentially, the amount of time that nurses currently spend on assisting patients with environmental adjustments such as changing the tv will be calculated against the average wage of a nurse. That number would then be multiplied by the average number of nurses working at a hospital. 70% of that final value would be our product solution price. Individual accessibility solutions would have several price offerings. A low price offering will allow the user to purchase the basic functionality and there will then be several upgrade options available on our website with more features compared to the basic product.

Core Assumptions

Three core assumptions were made when creating the business model canvas. They are outlined below.

- This product will reduce the time Nurses spend on assisting patients with accessibility needs.
- Hospitals are willing to pay for a product that will save their staff time.
- Individuals with accessibility needs value autonomie.

To validate these assumptions, two lists of questions were developed. One aimed at people who work in the medical sphere and one aimed at patients with accessibility needs. Below are those questions.

Questions for Hospital Staff

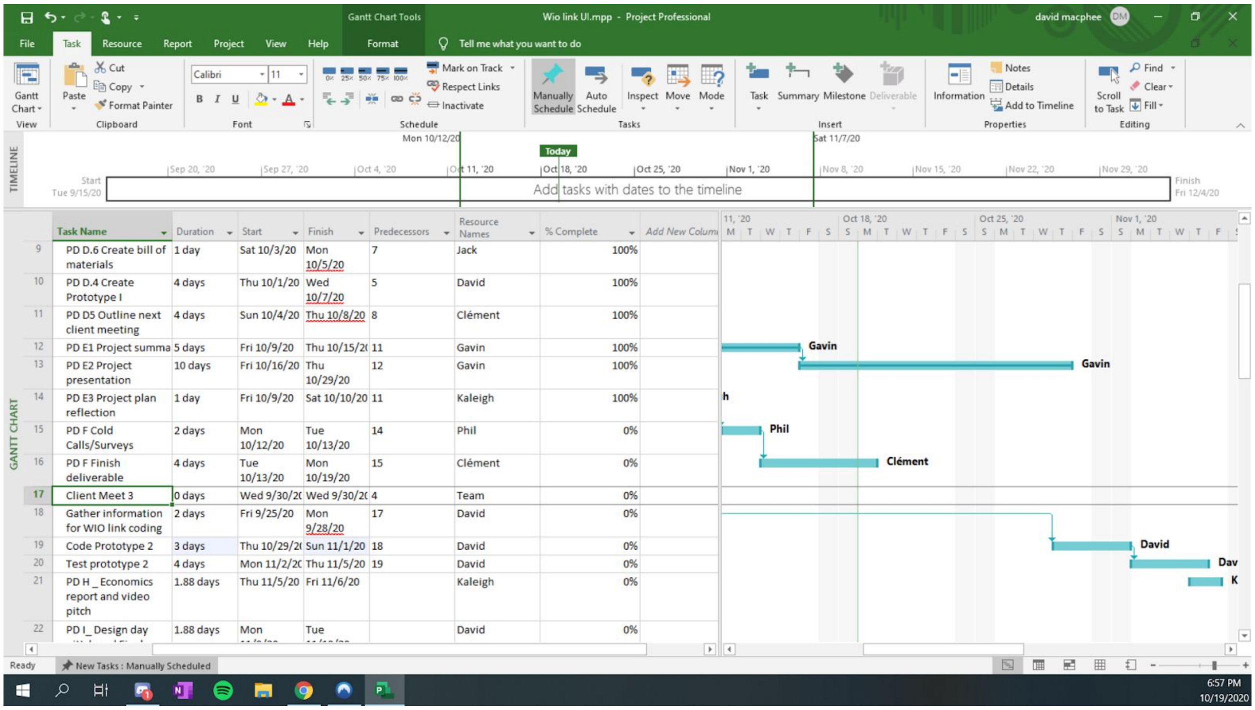
1. How much time do nurses spend on helping accessibility patients? Specifically with very limited mobility patients where it would be difficult for those patients to operate a tv remote.
2. Of that time, how much is spent on assisting with environmental interactions i.e. changing the tv channel?
3. Do Those patients value autonomie.
4. Has the hospital purchased equipment designed to save staff time in the past?
5. Is time saving a high priority at the hospital? If so, why is that?

Questions for Accessibility Patients

1. How do you interact with your environment?
2. Do you have accessibility devices? If so, what are you able to do with them?
3. What do you value most about an accessibility device?
4. Do you use the tv often?

The interviews conducted located in the Appendix section validate the assumptions made previously. The product would reduce the time nurses spend on assisting patients with accessibility needs since Jack Yurak mentioned that a portion of his time was spent adjusting patient environments such as changing tv channels. Given that our product is designed to do that, it would allow nurses to provide more overall acute care. Both Pauline Darling and Jack Yurak agreed that hospitals value time saving products and have purchased time saving products in the past. All interviewees affirmed that individuals with accessibility needs value autonomie. Given the responses from the interviews conducted, the business model canvas is feasible.

Updated Project Plan



	Task Name	Duration	Start	Finish	Predecessors	Resource Names	% Complete	Add New Column
9	PD D.6 Create bill of materials	1 day	Sat 10/3/20	Mon 10/5/20	7	Jack	100%	
10	PD D.4 Create Prototype I	4 days	Thu 10/1/20	Wed 10/7/20	5	David	100%	
11	PD D5 Outline next client meeting	4 days	Sun 10/4/20	Thu 10/8/20	8	Clément	100%	
12	PD E1 Project summa	5 days	Fri 10/9/20	Thu 10/15/2(	11	Gavin	100%	
13	PD E2 Project presentation	10 days	Fri 10/16/20	Thu 10/29/20	12	Gavin	100%	
14	PD E3 Project plan reflection	1 day	Fri 10/9/20	Sat 10/10/20	11	Kaleigh	100%	
15	PD F Cold Calls/Surveys	2 days	Mon 10/12/20	Tue 10/13/20	14	Phil	0%	
16	PD F Finish deliverable	4 days	Tue 10/13/20	Mon 10/19/20	15	Clément	0%	
17	Client Meet 3	0 days	Wed 9/30/2(	Wed 9/30/2(	4	Team	0%	
18	Gather information for WIO link coding	2 days	Fri 9/25/20	Mon 9/28/20	17	David	0%	
19	Code Prototype 2	3 days	Thu 10/29/2(	Sun 11/1/20	18	David	0%	
20	Test prototype 2	4 days	Mon 11/2/2(	Thu 11/5/20	19	David	0%	
21	PD H _ Economics report and video pitch	1.88 days	Thu 11/5/20	Fri 11/6/20		Kaleigh	0%	
22	PD I _ Design day	1.88 days	Mon	Tue		David	0%	

Conclusion

In conclusion, our business would allow us to be successful as a lean startup. The business model canvas outlined shows that our target customers are hospitals and individuals with accessibility needs. Costs, key activities, key partners, key resources, value proposition, customer relationships, channels, and revenue sources were identified associated with the chosen customer segments. Furthermore, the assumptions made while developing the business model canvas were validated by our interviews.

Appendix

Appendix A

Interview with Jack Yurak, Ottawa Hospital Nurse.

Statements in Response to Question 1

-It depends on what unit you're working in.

-When I was working in the intensive care unit, around 70% of my time was spent helping people under the conditions you described.

-It was less in the medical unit where around 50% of my time was spent helping limited mobility patients.

Statements in Response to Question 2

-I would say around 5% of my time helping those low mobility patients was adjusting environmental stuff like tv, bed adjustment, turning on and off lights.

Statements in Response to Question 3

-Yes, those patients really like their autonomie. Most people with injuries who suddenly find themselves under those conditions are often embarrassed that we have to help them with things they could previously do easily.

Statements in Response to Question 4

-Yes it has, they got an electronic charting software called EPIC to save doctors time and better organize tasks for nurses.

-The hospital also bought beds to auto flip patients since nurses have to do it frequently.

Statements in Response to Question 5

-Without a doubt. While the hospital rarely buys stuff to make nurses' lives better, they really like stuff that makes nurses work faster.

-If nurses work faster, then they can do more acute work rather than being paid babysitters by helping with non acute assistance.

-Hospitals really like things that make nurses and doctors more productive.

Appendix B

Interview with Doctor Pauline Darling PhD, RD, dietitian formerly worked at Saint Micheals hospital.

Statements in Response to Question 1

-A significant amount of time, but I couldn’t give an exact estimate.

Statements in Response to Question 2

-From my conversation with nurses, a surprising amount of their work was helping people with environmental assistance like adjusting pillows and light levels.

Statements in Response to Question 3

-Certainly, you see it even in patients with minor injuries like broken arms. It usually took time for them to adjust to not being able to do things and sometimes they took issue with needing help all the time.

Statements in Response to Question 4

-Yes, time is money at the hospital so they bought software for chart keeping and organizational assistance.

-Everytime that someone does anything medical at the hospital, it needs to be recorded. That took a lot longer with pen and paper compared to what they bought to replace it.

Statements in Response to Question 5

-Like I said, time is money at the hospital, saving time is saving money for the hospital. Despite all the mission statements, hospitals really want low cost, effective products.

Appendix C

Interview with Renee Darling, formerly injured with limited mobility. Lives in a long term care home.

Statements in Response to Question 1

-Right now I’m getting things done but before when I couldn’t move very much I relied on my personal support worker.

Statements in Response to Question 2

-Well my accessibility device was a person. The personal support worker.

Statements in Response to Question 3

-I’d say the time it takes to do things. If I had a device to control the tv, I wouldn’t have to ask and then wait for it to happen.

-I hate not having control to do even basic things. I’d like any device that gave me more control.

Statements in Response to Question 4

-I watch tennis whenever it’s on. I always watch the news too. I watch any interesting movies on the channel finder pretty often.