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Designing a Resource for Student Entrepreneurs at Worcester Polytechnic Institute

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Designing a Resource for Student Entrepreneurs at Worcester Polytechnic Institute

A Major Qualifying Project Report:

Submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

by

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Abstract

Despite Worcester Polytechnic Institute's (WPI) innovative culture, students lack a clear understanding of available resources for their business endeavors. We launched Gompei's Goat Cheese as a precedent for student-led ventures and detailed resources used and the obstacles faced. It became clear that the university could benefit from a comprehensive resource that detailed key components of launching a venture at WPI. We developed such a resource, Student Startup Outline, and tested its' value and effectiveness through focus groups, which led to its' revision.

Executive Summary

Collegiate student ventures may differ in nature and begin in different ways; however, they all have the option of utilizing resources provided by their universities. For example, WPI invested money into cultivating an entrepreneurial environment for students' benefit by currently developing an incubator (Alumni Gym, 2014, para. 5). Incubators usually help young entrepreneurs start a business venture by providing necessary support through mentorship, partnership, or funding (Business Incubator, 2014, para. 1). This resource may help entrepreneurial students further their business ideas.

Even though this incubator is being developed at WPI, there is no central resource for student entrepreneurs when pursuing their own endeavors, possibly impeding them from doing so. In turn, WPI students are missing out on the benefits of the experience of running a student venture while attending at a university. To aid these students and contribute to the available resources at WPI, this Major Qualifying Project (MQP) created a process to aid student entrepreneurs by detailing necessary components for their venture. The goal was accomplished by completing the following objectives:

1. Launched a student venture, Gompei's Goat Cheese, which provided first-hand experience in starting a venture
2. Identified components needed for a startup and composed a comprehensive resource that details key aspects of planning a venture
3. Conducted focus groups to test the value and effectiveness of the resource
4. Revised the resource based on the results and analysis of the focus groups, and provided recommendations and limitations on the usage of the resource when planning a student venture

This resource, Student Startup Outline, is a document that acts as a guide for student entrepreneurs when planning their ventures. The final document may be found in Appendix Y. The methodology of designing this resource encompassed three major steps: (1) data collection, (2) resource development, and (3) resource evaluation. Data collection consisted of researching common startup challenges and identifying obstacles faced while launching Gompei's Goat Cheese. Through this data, we identified that organization, time management, communication with stakeholders, initial funds, business operations, and marketing and sales were six essential components for startups.

For resource development, Student Startup Outline was designed using a similar format as the Event Programming Sheet (Appendix F) provided by the Student Activities Office at WPI. The Programming Sheet outlines necessary tasks to effectively plan an event, as well as the person responsible of the event, date to be accomplished, and date accomplished. The format of the Programming Worksheet served as a baseline for our own resource, Student Startup Outline, since we believed it parallels to a student's venture preparation. Furthermore, the content of Student Startup Outline was developed using the six essential components that was identified during the data collection.

To test the value and effectiveness of the resource, four focus groups were conducted with five to seven participants in each group. The participants were selected through recommendations from the School of Business faculty and students, entrepreneurship club and participants from the focus group themselves. These students were recommended because they had an entrepreneurial mindset or wanted to start a venture while attending college. The focus group format was selected in order to obtain a variety of opinions by guiding the conversation with outlined questions, with the ability to adapt the questions as needed to further explore topics

of interest (Berg, 2009). Each focus group session was audio recorded and transcribed. To analyze the focus groups, we used the Long-Table Approach, a classical approach offered by Richard Krueger and Mary Anne Casey (2009, p. 119). By doing this, we produced a visual representation of all of the themes and categorized the data.

From the Long-Table Analysis, we found that 21 out of 24 participants have not started a business because of lack of initial capital, safe guard against potential investment lost, time, or legal knowledge. Another challenge we discovered was the understanding of WPI resources. To revise our resource, we chose data that was deemed most helpful for student entrepreneurs at WPI, focusing on the content, format/design, value, and effectiveness of Student Startup Outline. For example, Table 1 demonstrates feedbacks or concerns about the resource, and the revision implemented in response to those comments. We also identified the value and effectiveness of Student Startup Outline as seen in Table 2 and Table 3 respectively.

Feedback or Concern	Result/Revised Section
Additional Sections within Student Startup Outline	Introduction section to explain purpose and how to utilize Student Startup Outline Revision step to make sure entrepreneur takes the time to revise venture, if necessary Ethics section to discuss considering ethics while conducting business Legality section to handle IP, patents, licensing, and certificates
Needs Additions alongside Student Startup Outline	Resource sheet of what's available at WPI, descriptions of what they do, and contact information
Customization (Recommendation)	Electronic/Digital Version so that it is easier to update than a paper guide Give the entrepreneur the opportunity to select what sections they feel is relevant to them

Table 1 Content Revisions

Valuable?	Representative Quotes from Focus Groups
Yes	Having an outline like this gives me the confidence [to plan out the venture]
	Even if I did have business background... it would still help me because... you look at... really good broad areas to focus on
	[It has] goals that are measureable and achievable
No	[This is] a preliminary analysis of whether or not it's worth it
	You'll never know as little about your venture as when you're at the start [when filling out Student Startup Outline]
	It would be great to go back and actually make changes [electronically]
	Fairly organized person... stuff... seems like you would... logically do
	I wouldn't use this because for me, it's kind of outdated

Table 2 Key Findings on the Value of Student Startup Outline and Supporting Quotes

Effective?	Representative Quotes from Focus Groups
Yes	S: There are a bunch of companies I plan on doing, this would help a lot.
	U: I've never felt more capable to get it done than when it was laid out in front of me
	W: Good documentation to keep track of how long you think something takes and how long it actually took. So you could plan future things
	R: Good way of... maintaining accountability
No	Q: Most of these things [when starting my business], I didn't use.
	F: I would... [use] this once or twice when I'm actually organizing something. But to actually track my progress... I would end up creating my own little spreadsheet
	K: If I'm put in touch with someone within the industry... I would scrap this immediately
	S: Can also be intimidating

Table 3 Key Findings on the Effectiveness of Student Startup Outline and Supporting Quotes

From our analysis, we identified benefits and shortcomings of Student Startup Outline, which became areas to strengthen the document. When discovering that students are unaware of the resources on WPI's campus, it revealed a couple of relevant issues. These issues were: (1) a

lack of standardization on how to start a venture on campus and (2) how perseverant the student is and what they were willing to do to launch their venture.

Based on our data collection, resource development, and evaluation, we developed several recommendations regarding future improvements for the resource, suggestions for WPI, and project opportunities.

Improvement and Implementation of Student Startup Outline

Recommendation #1: *Further develop the resource and contact list to provide up to date resources, how they can help, and contacts willing to give students advice*

Recommendation #2: *Utilize our Student Startup Outline before and during the process of pursuing a student venture, and evaluate its effectiveness as a start-up tool*

Recommendation #3: *Use future analysis of the resource to continue to develop its effectiveness as a comprehensive, flexible digital version, capable of customization, yet still simple for student entrepreneurs to utilize*

Growth and Support of Student Entrepreneurship at WPI

Recommendation #1: *Clarify and promote the available entrepreneurial resources WPI has to students, particularly to those early in their career*

Recommendation #2: *Provide easier access and space within curriculum for students to take business and entrepreneurial classes*

When Starting a Student Venture

Recommendation #1: *Put the time and effort into understanding the campuses resources, and searching for potential passionate partners to support the venture*

Recommendation #2: *Continuously strive to improve on time management and stakeholder communication skills in order to make the most of the venture*

Our current resource, Student Startup Outline, provides students with a simplified tool to utilize and adapt for their own business endeavors. Before designing such resource, we sought to understand student ventures by researching and identifying common startup challenges, while launching our own venture, Gompei's Goat Cheese. Student Startup Outline was then evaluated by focus groups and it was revised based on our findings. We believe that this resource may help students to effectively address potential startup concerns while helping them plan their ventures.

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- Timothy O'Neil, Class of 2014
- Gina Betti, Associate Director of Collaborative for Entrepreneurship & Innovation
- James Wolken, former Editor of the WPI Journal

Authorship

Each member contributed equally to the writing of this report and the launching of Gompei's Goat Cheese.

Diana Nguyen was the sole facilitator and transcriber for the four focus groups conducted.

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Introduction

Student ventures may begin a number of ways. They may begin utilizing the resources from which their university provides, such as business incubators, project ideas, funding, or mentorship. For example, the earliest known student-led venture at a university started in 1894 at Cornell University, known as Student Agencies Inc. It began when student Seth Higby utilized the students as customers by starting a laundry service company to help fund his education. Higby then sold it to other students when he graduated (Student Agencies, Inc., 2014). This process continued until 1910 when the students decided to become a corporation and expand into other fields. Another example is when Princeton University, in 1911, created their own student agencies which provided goods and services to the university community in order to help students financially for school.

Although the exact number of student ventures is unknown, there is a great deal of them. For example, the article *9 College Start-ups* describes nine startup ventures pursued by student entrepreneurs at different universities (2014). University of Massachusetts Amherst holds seven student ventures on their campus alone. These student ventures are only a small sample from across the United States. However, even though there have been many student ventures, there has not been any in partnership with Worcester Polytechnic Institute (WPI) on campus. The reasons are unclear, given the WPI culture, with its' the innovative spirit and the motto "Theory and Practice," (The Seal and Motto, 2011).

Our project team initially set out to launch a WPI branded goat cheese venture. The idea for this venture had been explored by a previous Major Qualifying Project (MQP) group and other WPI undergraduates. In order to bring the idea into fruition, we needed to get preliminary operations implemented for the holiday season. Thus, the early portion of our project work was

focused on finalizing operations and promoting the product in order to ensure Gompei's Goat Cheese would get off the ground. After getting the venture started, we realized the academic value of our project laid within its' ability to encourage other student entrepreneurs to launch their own ventures.

Problem Statement

Currently, there are no students pursuing ventures in partnership with WPI on campus. We believe some aspects may be due to a lack of clarity of how to launch a venture coupled with not knowing what resources are available on the WPI campus. There is no central resource for other student entrepreneurs to pursue their own endeavor, possibly impeding students from doing so. In turn, WPI students are missing out on the benefits of the experience of running a student venture while attending at a university.

Project Goal

In order to contribute to WPI's resources, this MQP developed a process to help student entrepreneurs when planning their ventures. This resource details the components in starting a venture, which was designed from classic and contemporary literature and our experience with our case study, launching Gompei's Goat Cheese. To test the value and effectiveness of the resource, focus groups were conducted, which led to its' revision. The case study and the resource was the basis of our recommendations to student entrepreneurs as they move forward in launching their own venture at WPI.

Objectives

In order to accomplish the project goal, the following objectives were met:

1. Launched a student venture, Gompei's Goat Cheese, which provided first-hand experience in starting a venture
2. Identified components needed for a startup and composed a comprehensive resource that details key aspects of planning a venture
3. Conducted focus groups to test the value and effectiveness of the resource
4. Revised the resource based on the results and analysis of the focus groups, and provided recommendations and limitations on the usage of the resource when planning a student venture

Background: Student Ventures at WPI

WPI is in the process of making many renovations and changes, which includes erecting a new Recreation Center and residential hall, and repurposing Alumni Gym. The newly renovated Alumni Gym will “embody the WPI Plan,” by providing space for students to work on homework and projects, fostering a collaborative environment in which ideas can come into fruition (Alumni Gym, 2014, para. 5). Additionally, WPI will offer a business development incubator to nurture entrepreneurship (Burlingame, 2013, p. 24). Incubators usually help young entrepreneurs start a business venture by providing necessary support through mentorship, partnership, or funding (Business Incubator, 2014, para. 1). As of right now, no other information is given about the WPI’s upcoming business incubator.

Any resources, such as the business incubator, will help entrepreneurial students further their business ideas. In order to contribute to these resources at WPI, this MQP will examine perceived and actual obstacles in launching a venture, as well as the understanding of the resources available on WPI’s campus. Since this MQP is a multidisciplinary project, we will also incorporate the research in Management and Psychological Science topics. Since psychology can be found in every facet of life, the purpose of using psychological concepts is to analyze if our suggested guide would better aid a student entrepreneur in starting their endeavor.

Literature Review

Before launching a business, there are a couple of ways to formulate a proposal. Each method has its' own advantages and disadvantages to a student entrepreneur. In general, entrepreneurs may encounter various obstacles. The most common obstacle is acquiring the resources necessary to start their venture (Dyer, 1992). In one study William Dyer conducted, other common problems entrepreneurs face is obtaining seed money, not knowing what to do, having a lack of credibility, lack of confidence, high risk, and lack of community support (1992). Generally, other pitfalls that have significantly affected the success of a new venture are the in following rank order: inability to develop and implement a marketing plan, failure to develop a thorough business plan, sufficient start-up capital, failure to develop best practices for operations, hiring the wrong people, failure to anticipate costs and demand, and wrong partners or cofounders (Dyer, 1992). The research did not particularly focus on student entrepreneurs. Thus, in order to familiarize ourselves with startups and the obstacles they may face, research was conducted.

Business Plan

To start a business, there are a few documents that may assist in developing the venture idea and having it come into fruition. One classic method is to develop a business plan, which helps to communicate the value of the business to stakeholders and potential partners (Timmons & Spinelli, 1994; Cohen, 2002). This plan consists of: an executive summary, company description, market analysis, organization & management, service or product line, marketing & sales, funding request, financial projections, and an appendix (How to Write a Business Plan). An executive summary is usually the last portion written as it serves as a general overview of the entire plan. By writing a company description, it serves as a guideline for the rest of the paper. It

outlines what the business is about and introduces the market. Within market analysis, research is conducted on the industry, target market, and competitors. Organization and management looks into what is the best way to structure the business, based on the particular goals of the company. Service or product line focuses on the product or service sold and understanding its' life cycle within the existing market. Developing a marketing and sales strategy that suits the company's needs, helps to raise awareness and may help to increase sales of the product. In organizing funding request, the company can receive initial investments to start the venture. Usually, to obtain seed money, financial projections are necessary to support the claim of how profitable the business may be. Lastly, the appendix is an optional section to include any other paperwork or information that may be helpful to the business plan, but does not necessarily fit within the aforementioned sections.

Business Model Canvas

A more recent approach to plan a business is the Business Model Canvas (Osterwalder & Pigneur, 2010). This model is innovative as it doesn't necessarily require the business leaders to write a report. Rather, the Canvas is one that is printed from the website and filled out using sticky notes. A blank Canvas may be found in Appendix A. In this manner, the people using this method are able to quickly visualize how their business is running or will run, and edit as necessary. By having the visual aid, it makes it easier to see how the components add or detract from the mission statement or goals of the company. This canvas includes: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure. Customer segments focuses on deciding which groups are the business trying to sell products or provide services to. The value proposition details what value the company can give to the customers. Channels represent how the company

plans to communicate the value proposition to the customers. Customer relationships detail the types of relationships the company has to their customers. Revenue streams show how revenue is generated from the customers. Key resources explain and prioritize the important components that make the business work. Key activities signify what activities are necessary to make the business operational. Key partnerships are the relationships of suppliers and other partners to help the business. Cost structure delves into outline all of the costs produced by the business.

Comparison of Business Plan and Business Model Canvas

While creating a business plan or a Business Model Canvas, each has their own advantages and disadvantages. Both encourage the entrepreneur to carefully devise a comprehensive document to thoroughly plan out a venture. A business plan is very much a classical and comprehensive perspective on the business. Meanwhile, the Business Model Canvas is an innovative and interactive way to conceptualize the venture. Both require much time and research in order to understand and develop the necessary components to compose the documents in its entirety. This time is something a student may not have much of while balancing school work, extra-curricular activities, work, or a sports team. As a solution, one may use the concept of a dehydrated business plan, which only captures the very core of the business in an abridged version of the typical plan, as commonly the financial plans are left out (Timmons & Spinelli, 1994). However, this version of a business plan may not fully aid the student entrepreneur in considering all necessary components in a sufficient manner, as the financial considerations are an important aspect of starting a business. Additionally, all of the aforementioned methods were not necessarily geared towards student entrepreneurs, just individuals or groups of people who want to start a business.

Time Management

Once a business is launched, entrepreneurs have to ensure that their resources are used efficiently. In fact, “researchers have long noted that startups have higher failure rates than established firms do,” since they may not have effective use of resources (Chang, 2003, p. 724). Startups are generally small and have a vulnerability known as liability of newness. This means that startups may not have enough resources to withstand losses (Chang, 2003, p. 724). Therefore, entrepreneurs have to use resources efficiency and effectively.

One way to maximize the efficiency of each resource is by finding a systematic technique to manage time. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, a textbook about the fundamentals in project management, states that time management “provides guidance and direction on how [resources] will be managed throughout the [business]” (2013). More specifically, businesses or especially student entrepreneurs may face many challenges without a time management strategy. Student entrepreneurs have to maintain their full-time course loads while running a business (Aubuchon, 2009). Therefore, students trying to sustain both a business and academic courses may lead to resource allotment obstacles.

The online article *From Books to Business: Student Entrepreneurs*, written by Julia Aubuchon, contains testimonials from young entrepreneurs who established or co-founded a business while attending a university (2009). These testimonials demonstrate the various struggles that students underwent while launching their own business, due to the demands on their time. Brad Ericson, CEO of 3SecondReceipts and sophomore at Drexel University, stated, “To have a social life and to have a business and to do well academically, I basically don't sleep a lot,” (Aubuchon, 2009, para. 11). Similarly, Lauren Kessler states, “I don't really sleep because I am constantly thinking about what I am going to design next,” (Aubuchon, 2009, para.

14). In 2009, Lauren Kessler founded Lauren Nicole Accents while attending Syracuse University. The third entrepreneur is Jessica Mah, who co-founded Indinero.com as a senior at University of California, Berkeley. Through her experiences, she commented, "I was in Model United Nations last year, and I had so much fun with that, and I used to play sports and I used to do all these extra-curricular activities. And, now, I just need to say no to all of those things and just drop those commitments, and it's risky," (Aubuchon, 2009, para. 21). Fundamentally, most entrepreneurs who establish a business while attending college struggle in balancing business operations, academic courses, and social life due to time constraints.

The online article, *Top Time Management Tip for Busy Entrepreneurs*, written by Matthew Jenkin, shows a testimonial of Patrick Dudley-Williams (2013). Dudley-Williams started his company, Reef Knotsafter, after losing his previous job, just two days before his wife gave birth to twins. Time management became really crucial for him since the couple already had a three year old. Hence, he decided to write a list every day to prioritize tasks that he needed to accomplish in the next twenty four hours (Jenkin, 2013). Even though this testimonial is not about a student entrepreneur, it is example of good time management practice. Keeping a list, journal, or calendar helps an entrepreneurs remember deadlines, meetings, and will track any important business activities or operations. "It can also help avoid wasting precious time and ensure you maintain a healthy work-life balance," (Jenkin, 2013, para. 6).

Good time management practice includes planning and setting goals for student-led ventures. It is recommended to periodically re-evaluate goals and objectives with faculty or advisers (Zadow, 2013). While setting up the objectives, the business should organize a strategic plan that contains research, planning details, and executions methods. That plan includes assigning tasks to members and scheduling details (Zadow, 2013). Keeping weekly reports will

help determine and measure successes and failures, while keeping records of a member's progress in a specific task. For example, Appendix B shows an example sheet of a weekly activity report from University of Northern Iowa, in order to track a project's progress.

The document, *Student Run Firm Handbook* and *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, provides different methods of managing certain business activities (2013). However, *Student Run Firm Handbook* discusses additional items in-depth such as building a team, structure, firm operations, developing a business network, and finances (2013). On the other hand, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* discusses about managing a project, which can be related to a business activity, objective, or goal (2013). As for the article *From Books to Business: Student Entrepreneurs* (2009) and *Top Time Management Tip for Busy Entrepreneurs* (2013) deliver testimonials of student entrepreneurs and their struggles as they manage their own business. These testimonials showed the importance of managing time as a student-led business.

Initial Funds

Any entrepreneur, including students, need initial funding before launching a business to meet business needs (Tariq, 2013). Initial funding is essential because it will help a startup move to the production and sales stage (Tariq, 2013). Such funds may be commonly obtained from insider financing, crowdfunding, or angel investors. Insider financing is when the entrepreneur team funds the startup from their own personal assets, which may include funds from family and friends (Tariq, 2013). Crowdfunding includes gaining an audience, also known as a crowd, for small amounts of funds from each individual. This type of funding is generally done through social media communication over the internet, “for example embracing user-generated content as guides for investors” (Othmar, 2013, p. 289). An example of crowdfunding is Kickstarter, the

largest crowdfunding site, which oversees over \$237 million in funding pledged to 48,526 projects (Mollick, 2013, p. 2). On the other hand, angel investors are usually wealthy investors who are willing to provide financing, called seed capital, to the early stages of start-up ventures (Sudek, 2006, p. 89). Generally, angel investors involve themselves with the company, which may include day-to-day operations (Mollick, p. 2, 2013).

According to the journal article *Angel Investment Criteria*, there is not much information about angel investors in the literature “due to its private fragmented nature” (Sudek, 2006, p. 90). Similarly, crowdfunding regarding social ventures has been largely unexplored (Othmar, 2013, p. 289).

Michael Lazerow in his article “7 Deadly Sins of Startups” for Inc.com says that most entrepreneurs fail because they run out of money (Lazerow, 2012). Before the business model is fine-tuned and adjusted to be most effective, the business runs out of money and cannot take advantage of any learning early on. David Randall of Forbes.com says that the “cardinal sin of new businesses” is not having enough startup capital on hand before establishing customers, and can start paying the bills (2009). This illustrates the importance of the initial funding and is one of the reasons why finding the right funding source for the venture is one of the biggest priorities for a startup. Some financial statement samples may be found in Appendix C and D in order to understand what data is appropriate for balance sheets and profit and loss projection respectively. These templates were obtained from the website, Score.com, which was chosen because it was sponsored by the U.S. Small Business Administration and resembled best practices for businesses to use.

Business Relationship to the School

During an interview with Rice University, it was recognized that the university's support will affect the structure and leadership of a student-led business. The option that is present, then, would be working without the university's help, utilizing the university as a partner, or maintaining that relationship if it exists.

A look into current practices by other student-led businesses shows a variety of relationships. Some schools such as Cornell University and Loyola University of Chicago have student-led organizations, Student Agencies Inc. and Loyola Limited respectively, who oversee the creation of and success of student-led businesses. University based organizations may help provide funding, advising, or other kinds of support to students who have an interest in starting their own businesses. One way students may attain support is through university-affiliated incubators (Hoskisson, Covin, Volberda, & Johnson, 2011). Other student-led businesses may be based out of particular "academies" or "centers." These may be overseen by faculty or staff such as the Elon Enterprise Academy or UMASS Center for Student Business (All Systems Go: It Takes Structure to Make Your Business Grow, 2013). Similarly, Rice University supervises student-led businesses through their student activities office. From these examples, a university can be helpful to student-led businesses through any department.

The option of partnering with a department or office within the university begs the question of the best way of selecting a partner. Especially when there is no precedent set, selecting an appropriate business partner is crucial to the success of the startup. In considering which potential partners to choose, one characteristic may be based on the resources that the partner oversees. These could be financial, labor, or informative resources. If a particular department or office on campus has the financial resources to offer the startup or has knowledge

in the industry the entrepreneurs are entering, then it may make sense to work with that department and take advantage of it. Another consideration that may be overlooked is the passion and dedication the potential partner has for the actual venture. The actual application of and the support that comes with these resources is just as important as the resources themselves. Additionally, the emotional support partners offer each other is important. A partner who is passionate and truly dedicated to your venture is more likely to help implement and utilize their resources, as well as provide emotional support if necessary.

An alternative option for students is creating a business utilizing campus resources and the university's "credibility", all without the university taking ownership of the business (Mars, 2009). This is a growing trend, and has positioned students as active members of "academic capitalism" versus the previously held belief of being "marginalized" (Mars, Slaughter, and Rhoades, 2009). To explain further, students are becoming a key partner to the university and may contribute to its' success by the affiliation between the student-led business and the university. An example of a mutually beneficial relationship is the company Regaalo, a gift delivery service for students. Regaalo began at University of New Hampshire by a group of students and is now its' own independent company. The students had an idea for the service and entered in a competition to receive funding. They have now expanded nationwide, sharing their services at multiple college campuses. Another example that is particularly relevant to WPI is that the University of Michigan recognized the need for campus resources to help engineering students translate their ideas and research into commercial ventures. Michael McCorquodale and Richard Brown wrote and discussed the resources the university has made available on its campus to those students. These resources included entrepreneurial classes, on campus entrepreneurial organizations, as well as professional resources available. A specific example

may be found within the Technology Management Office and Zell-Lurie Entrepreneurial Institute. McCorquodale and Brown explained that these resources increased the number of patents and startups generated from the university's students (McCorquodale and Brown, 2004).

These options of utilizing the university in various ways prove that student-led ventures can have different business relationships to them. Despite these options, the amount of research regarding evaluating the success of the various methods is lacking.

Leadership

In addition to the relationship with the university, the leadership within the student venture is an important factor in the success of the business. This poses a question of: do students possess or have the ability to learn the proper leadership capabilities to drive a successful business? Matthew Mars of California State University studied the idea of “grass-root student movements” in entrepreneurship (2009). A grass-root student movement is when students lead an initiative to change the campus in one way or another. One classic example is student protesters for the Vietnam War (Haas, 1968). This initiative attempts to change the campus' mentality on an issue, the culture, or new processes. Mars mentions that grass-root movements start at the bottom level of the organization, usually with the students spearheading the change without the administrators' help (Mars, 2009). As college students have started these movements over social issues in the past, they are now beginning to create grass-root entrepreneurial movements on campuses as well.

Both grass-root leaders and entrepreneurs function in innovative ways that are distinct from an established authority (Mars, 2009). This characteristic reaffirms the importance of the relationship between a student-led venture and a university from which it is based out of. If a campus is not familiar with student-led businesses, the initial process could make the campus

very nervous, as they do not know what publicity or additional costs the venture would bring. Mars' study suggested that students are capable of utilizing grass-root leadership to influence organizational change on campus and creating an environment supportive of student entrepreneurial ventures (2009). This is particularly relevant to WPI and Gompei's Goat Cheese as it is the first attempt to launch a student-led venture and has aspirations of being the example for other student entrepreneurs to follow.

Mars states that student grass-root leadership can be effective. Authors James Kouzes and Barry Posner outline how to be an effective leader through the "five practices for exemplary student leaders" in their book *The Leadership Challenge* (Parker, 2009). These practices are:

1. Model the Way
2. Inspire a Shared Vision
3. Challenge the Process
4. Enable Others to Act
5. Encourage the heart

This book is geared towards undergraduate leaders, providing real stories and examples to illustrate their practices. Kouzes and Posner also provide activities and exercises for students to develop and gain awareness of their own leadership abilities. The premise behind their work is that students can actively engage in improving their leadership abilities, which can in turn positively affect their organizations. Strong leadership will be essential for student-led ventures to succeed. Engaging in practices similar to these five mentioned earlier, and actively trying to improve its leadership may help make student-led ventures, and more specifically, Gompei's Goat Cheese, a lasting and growing success.

Benefits of a Student-Led Business

In the 1980's, business programs in academia faced scrutiny for focusing on the science and theory of management principles, but inadequate teaching of the practical application of actual management skills. While graduates knew how to perform marketing analysis or how to keep track of numbers in a balance sheet, the "soft skills" such as communication, decision making, and change management were lacking. In order to address this, some academics began adjusting classroom teachings to focus on these skills. One example included role plays during class to give students practice or a working knowledge of these skills. The last assignment in the course often involved performing these new management skills or techniques in the real world, and reflecting on the experience (Paglis, 2013).

These skills based courses were popular in the 1980's and 90's. From then on, there has been limited analysis on the prevalence or effectiveness of these types teaching methods. Based on her research about management in academia, Laura A. Paglis made four recommendations to increase the effectiveness of teaching management to students (2013, p. 24).

1. Substantial time needs to be consistently devoted to skills practice so students will become comfortable with these skills and use them outside of class
2. Assignments should be made that specifically broaden the students' awareness for the application of skills being learned
3. Opportunities must be provided for students to apply their skills in an integrated way
4. Instructors must be flexible and give context-appropriate management responses when presenting and discussing behavioral principles with students.

While not specifically advocating for student-led businesses on campuses, Paglis' recommendations lend themselves to supporting the benefits of those endeavors (2013). This is

especially true for students in pursuit of honing their skills in management. The third recommendation calls for “integrative opportunities” for students to practice these skills. A student-led business on campus provides a great opportunity for this integrative experience. This type of business may also address the criticism that management skills cannot be taught in a classroom, at least not to those without prior experience. Those critics believed that management can only be taught to those already practicing management. Unfortunately, as Paglis’ writing suggests, there is a lack of formal study and analysis into the actual effectiveness and adoption of skill based education when it comes to management (2013).

However, there are some examples of student-led businesses on campuses stemming from academic roots. Professor Barth Strempek of Elon University believes it is necessary for students to receive real business experience in entrepreneurship (Evans, 2008). Even after earning his MBA from Harvard, Strempek found that he was unprepared for his job despite his education. Therefore, while a professor at Elon University in 1995, he prepared students by helping them establish ImproVibes, a student-led record labeling company. Eventually, he became the director of the Elon Enterprise Academy, which resulted in at least three new student businesses. Strempek’s goal is to have entrepreneurial thinking present in all aspects of Elon’s campus. He believes that the entrepreneurial mindset can be applicable throughout society (Evans, 2008). David Robinson, Arthur Scherwood, and Concetta DePaulo of the University of Indiana also took a similar step, by incorporating a student-led consulting business into the classroom (2010). The idea is based off of experiential learning theory, which is defined as knowledge formed from experience (Kolb, Boyatzis, & Mainemelis, 2001). The purpose of the consulting business was to impart students with the decision making and hands on experience

necessary to gain knowledge and skills that prepare them for after graduation (Robinson, Sherwood, & DePaolo, 2010).

As mentioned through the research, a need for hands on, skills based experiences during college has been identified by both the private and academic sector. Although the current literature does not have much evidence supporting the success of programs such as student entrepreneurial ventures, there is enough momentum behind this type of experiential learning to suggest they provide value to students and the university. WPI is a university that prides itself on the blending of Theory and Practice, the university's motto. We have Interactive and Major Qualifying Projects as a form of experiential learning to help students gain the practical skills necessary for work in any industry. The literature supports the idea of student-led businesses being capable of honing students' skills in management and entrepreneurship, which prepares them for a career after graduation. Based on the literature and the core values of WPI, this MQP has the potential to help create greater opportunities for experiential learning through student-led ventures.

Conclusion

From familiarizing ourselves with various obstacles faced by student-led businesses, we recognize that there are many challenges to overcome. Especially when leading a student-led business, obstacles may range from organizational development, operational challenges, and managing resources. If the students do pursue their business, they have to consider the business' relationship to the university since it may affect the management and operational structure. Furthermore, while pursuing the endeavor, students need to be aware of their own leadership skills and be able to manage their time efficiently and effectively. By not considering these factors, the students are at a disadvantage because they have to effectively manage their business and their

lives as students. However, even with these obstacles, research shows that students may gain beneficial work experience that can translate to their career after college.

Methodology

Introduction

Since our project goal was to develop a simple yet useful resource to assist students when planning their venture, we established the following objectives to achieve this goal.

1. **Data Collection:** Collect information about necessary components when planning a student venture through the launch of Gompei's Goat Cheese
2. **Resource Development:** Develop a resource for student entrepreneurs to use as a guide when planning his/her venture by utilizing the experiences from Gompei's Goat Cheese and research conducted on startup businesses
3. **Resource Evaluation:** Analyze the value and effectiveness of the resource through focus groups and create recommendations to improve it

In this section, we will explain and justify our approach to completing these objectives.

Data Collection: Gompei's Goat Cheese

The initial direction of this project caused the MQP team to pursue launching Gompei's Goat Cheese from the outset of the school year. In this manner, we took advantage of the holiday season when selling our product. As the focus of our project turned into providing a resource for student entrepreneurs, we already had begun establishing Gompei's Goat Cheese. We then decided to use Gompei's Goat Cheese as a case study and as participatory action research to help create this guide. Case study research is a form of qualitative descriptive research that utilizes direct observations and other significant data, in order to analyze individuals or groups (Becker, 2012). Participatory action research is also known as learning by doing (O'Brien, 2001). We chose these methods because we were receiving valuable first-hand experience on the challenges, obstacles, and opportunities that a student-led venture encounters on WPI's campus.

Our group began to observe and document the challenges that we faced and how we responded when establishing Gompei's Goat Cheese. This information would help us provide recommendations and guidance to future students who may encounter similar challenges. The following case study provides a description of these challenges and was used in creating the initial design of our resource.

Case Study: Gompei's Goat Cheese

Background Information

Gompei's Goat Cheese emerged as an idea by James Wolken, former Editor for WPI's alumni magazine, as a way to utilize its' unique mascot, Gompei, in a creative way to promote the school and gain brand recognition. The idea gained some interest from students and was brought to WPI's School of Business as the foundation of a potential MQP.

The first Gompei's Goat Cheese MQP team was comprised of students, Jeremy Berman and Danielle Payne, as well as sponsor, Wolken, and faculty advisor Sharon Wulf. The purpose of their project was to determine the feasibility of a student-run business in order to market a Gompei branded goat cheese product line to the WPI community (Berman & Payne, 2013). In order to run the feasibility study, they held taste tests and surveyed the WPI community to determine their level of interest, from which they received positive feedback. They also conducted market research and discovered that there are successful student-run cheese businesses such as Cougar Gold based within Washington State University and the UNL Dairy Store of the University of Nebraska-Lincoln. Additionally, nearby farms had a positive response to the business idea and showed interest in supplying the cheese.

Based off of their research and data, the MQP team developed a business plan and determined that a student-led WPI branded goat cheese business was feasible to launch and

would succeed. This project was the base for our case study of Gompei's Goat Cheese (Berman & Payne, 2013).

Description of Problems Facing the Business

In order to gain a first-hand experience of starting a student-led venture on campus, we chose to continue the work of Berman and Payne, and launched Gompei's Goat Cheese on WPI's campus. Through our experiences, we discovered obstacles and challenges in establishing our endeavor. The following sections are the obstacles faced and the approaches taken to address them.

Obstacle 1: Initial Capital

Initial capital funds are crucial for a startup business. Timothy O'Neil and Joseph Botelho, WPI's Marketing Interns in the summer of 2013, felt that initial capital was necessary in order to market Gompei's Goat Cheese and begin selling the product. These funds were pertinent because they wanted to launch the business before the holiday season starting in November, which only allowed four months to obtain seed money and implement business operations. Therefore, they began to work together in order to find potential funds from the WPI community. While considering their options, they weighed the "ease of access" of the funding, the amount of funding, and the expectations that come with the agreement of obtaining the money. Some potential options involved investors without any relation to WPI, alumni of the university, and individuals within WPI's departments for support. Since the venture inherently utilized Gompei as a brand, obtaining funding from the Marketing Department at WPI was the best potential option; they have a personal interest in expanding and ensuring the success of the company and brand. Further, Gompei is also trademarked by the university and can be licensed

at a rate of 12% of sales. To save money on costs, partnership with the Marketing Department would allow us the opportunity to waive the licensing fee.

In August, Botelho and O'Neil presented the business plan and financial projections to Amy Morton, Chief Marketing Officer of WPI, to discuss this option. In September, we, Botelho, Rodrigo Calles, and Diana Nguyen, formed an MQP team and followed up with Morton. When we met with her, she agreed to fund Gompei's Goat Cheese with \$5,000 in seed money. In return, she requested termly reports with updates on how the business was progressing, alongside financial data. At the end of every term, a summary report of financial expenses and sales was provided.

As of March 5th, 2014, Gompei's Goat Cheese had spent about \$500 of the initial seed funding. See Appendix H, I, and J for the Income Statement, Balance Sheet, and Planned Expenses, respectively. We amounted much less than the \$5,000 in seed money due to less promotional activities than expected, such as Towers advertisements and a Gompei's Goat Cheese cook book.

Obstacle 2: Production and Supply of Goat Cheese

As a cheese producer, we would require a production facility, workers, machinery, and raw materials. As a result, this option was unfeasible due to the high initial costs for a plant location and equipment. On the contrary, the previous MQP research presented that as a private labeling business, we would only need to market the brand of our goat cheese products as it is produced by a separate business. Therefore, this option alleviated manufacturing responsibilities and significantly reduced initial expenses.

We agreed as a team to become a private labeling company with the possibility of partnering with a goat cheese supplier, Westfield Farm. Westfield Farm produces fresh goat

cheese in a wide variety of flavors including Plain, Herb-Garlic, Hickory Smoked, and Chocolate. The business is owned by Debby and Bob Stetson and is located in Hubbardston, Massachusetts, which is approximately twenty miles from WPI. After meeting with Bob Stetson several times in the month of September and finalizing contractual details, he officially agreed to become our supplier. On October of 2014, we signed a reseller contract making Westfield Farm and Gompei's Goat Cheese official partners.

Obstacle 3: Licenses

Before launching Gompei's Goat Cheese, we found that there are strict regulations and licensing processes that need to be accomplished in order to be able to legally sell and handle dairy products. The reseller agreement signed with Westfield allowed us to sell Gompei's Goat Cheese without having to obtain the necessary licensing to handle the cheese ourselves, saving us time and money. Because of this agreement and their proper food handling procedures, partnering with Chartwells, the sole dining service provider at WPI, was an important step to take. On November 11th, 2013 Gompei's Goat Cheese in the flavors of Plain and Herb-Garlic became available in the Rubin Campus Center at a price of \$4.99 for each 5oz log.

Obstacle 4: Online Orders

To reach the full capacity of the WPI community, including parents and Alumni, we decided to use Westfield Farm's delivery system. This allowed our customers to order Gompei's Goat Cheese online at their convenience. The two delivery options presented were the U.S. Postal Service or FedEx. We chose the U.S. Postal service, as it was the most cost effective option. Additionally, with the help of Aubrey Valley, Senior Associate Director of Alumni Relations, we arranged a WPI e-commerce page, which is accessible through the URL, www.gompei.com. Through this webpage, customers were initially able to buy three Gompei's

Goat Cheese logs in any flavor combination, Plain, Hickory Smoked, and Herb Garlic for \$25 plus \$5 shipping, totaling \$30. In February of 2014, Chocolate became available for purchase. Plain and Herb-Garlic are available in 8oz logs, while Hickory Smoked and Chocolate are available only in 5oz logs. The flow chart showing how we processed online orders may be found in Appendix K.

With this service available, we encountered challenges. For example, the WPI e-commerce system limits how customers place their order. If a customer orders two boxes of Gompei's Goat Cheese, each box will be processed as its own order. Therefore, two physical boxes will be sent to the customer, charging them \$5 of shipping for each box, which could have easily been sent in one box at a lower cost. With shipping in mind, delivering our products to West Coast exceeded our profit margin due to shipping costs. Even though this service provides a great opportunity for the business, there are still some logistics that may be improved.

Obstacle 5: Business Recognition

As previously mentioned, we decided to focus on capturing the WPI market, composed of students, faculty/staff, parents and alumni, by launching our product on campus. However, since it is a startup venture, Gompei's Goat Cheese was not fully known to the WPI market. In order to boost the recognition of the product, we selected the Gompei image used to create the popular goat pins and t-shirts seen around campus. To further promote the goat cheese, we chose to organize marketing events, one during Homecoming weekend, September 28th, and another on Founder's day, on November 11th. These dates were selected because of the amount of traffic throughout the campus, leading to an increased opportunity for people to view our product.

Homecoming Weekend: Promotional Event and Market Research

Homecoming weekend was the anticipated launch date of Gompei's Goat Cheese. However, we could not sell our product because business operations, logistics, and licenses were not fleshed out yet. Instead of launching the business, we ran a promotional event in order to engage potential customers by designing and placing posters in the campus center and sending an e-mail to all undergraduates. During the event, we planned to gain market research and the familiarity of goat cheese through a comprehensive taste test survey. This may be found in Appendix L and M. To promote our planned launch day on Founder's Day, we designed and printed Frequently Asked Question handouts about Gompei's Goat Cheese and an informational poster, which may be found in Appendix N and O, respectively.

We also worked with Bryan Rickard, Associate Director of the Alumni Relations Office, to strategically place our tables at the Campus Center right across from registration, the Graduates of Last Decade reception in the Recreation Center, and the Student Alumni Society (SAS) reunion dinner. These locations were chosen due to the great exposure of alumni and students. While table-sitting from 9AM to 2PM, we had people try samples of four different products, Plain, Herb-Garlic, Hickory Smoked, and Chocolate, and gave them the opportunity to provide feedback on the products themselves as well as their familiarity with using goat cheese in dishes.

Launch Day: Founder's Day

Before officially launching Gompei's Goat Cheese, we promoted the venture heavily through Facebook with a countdown to November 11th, 2013. On the same day, we organized an event where we made grilled cheese sandwiches and Mac and Cheese using Gompei's Goat Cheese. We served approximately 120 sandwiches and served a crock pot full of Mac and

Cheese. November 11th was chosen as the launch date because it is known as “Founder’s Day” and is one of WPI’s most exciting and active days of the year. Every year, SAS organizes events and promotes the anniversary of WPI’s founding. These events included live goats, t-shirt handouts, musical performances, and cake and other food. On this same day, the campus center was dedicated to Stephen Rubin, a former chairman of the board of trustees and proud goat owner. Understanding the high visibility of the event, we chose to set up our table of food around the fountain, which was a central location for all of SAS’ activities. The excitement and historical significance of Founder’s Day is why we chose to officially launch Gompei’s Goat Cheese on that day.

Obstacle 6: Resource Allocation

Throughout the course of this project, Gompei’s Goat Cheese acquired multiple stakeholders. One challenge that we encountered was meeting our stakeholders’ expectations, as well as our own, for the venture and project. Some of the stakeholders involved with the project were: Wolken, former project sponsor; Professor Sharon Wulf and Professor James Doyle, co-project advisors; Morton, the project funder and current sponsor; and various other WPI departments who may have a reputational stake by this project. As the former project sponsor, Wolken’s expectations were to “have students launch Gompei’s Goat Cheese with a goal of sustainability, both profits and leadership,” (J. Wolken, personal communication, February 6th, 2014). The e-mail may be found in Appendix W. As academic advisors, Professor Wulf and Professor Doyle have expectations of how an MQP is carried out and its specific academic value. As the primary investor in Gompei’s Goat Cheese and as Chief Marketing Officer of WPI, Morton has expectations of both a financial return on investment and a positive contribution to the branding of WPI and its mascot, Gompei. Since our product is so closely tied with the

branding and image of WPI, the whole university has some stake in the project. In particular, the Alumni Relations department and the School of Business at WPI has an interest in the business as the former is affected by our interaction with alumni, and the latter because the business is tied to this discipline.

We also joined the Tech Advisors Network (TAN) during B-term which introduced another level of involvement with the project. TAN is comprised of a group of successful WPI alumni who work with entrepreneurs to help them implement their business ideas or to move their business forward. We partnered with a team of advisors, with whom we met with on a monthly basis to update them on our progress and to receive advice from them. Overall, they provided support for our ideas and challenged us to consider various business decisions to strengthen our startup.

One of the primary obstacles we faced was balancing the different expectations of the stakeholders, and allocating our time and effort appropriately to prioritize and meet each expectation. For example, we had to ensure the success of the venture while maintaining sufficient progress with the academic portion and composing the written report. In the beginning of the 2013-2014 academic year, we concentrated in the business in order to establish all of the business operations before November 11th. Even with the time given, business operations were not fully efficient as we hoped. As we shifted our attention to the report, we focused less on growing and strengthening the venture. This constant configuration of balancing the expectations amongst different stakeholders challenged us to frequently shift our priorities.

Obstacle 7: Business operations

When launching our venture, we had to ensure that there was adequate communication with Westfield Farm whenever there was an online order made, as well as addressing the orders

from Chartwells. In this area, Wolken and his intern, Girindra Raisinghani, helped with the fulfillment of the orders while we concentrated on the marketing campaigns and public relations of the venture, as well as the academic portion of our project.

On February 10th, 2014, our sponsor changed from Wolken to Morton. This change required us to realign business operations and our relationship with our sponsor. From this change in sponsorship, there were new expectations and the team had to revisit our operational processes in order to make sure all responsibilities of the venture were still accounted for amongst the remaining team members. We became solely responsible for standardizing and performing the ordering process from the students to our supplier and customers.

Concerning financial operations, the change of our sponsorship caused a change in the way we documented all financial information. Previously, Wolken and Raisinghani kept track of the financial documents and provided updates to us periodically and upon request. With the change of sponsorship, we overtook tracking the financial status and documentation of the business. This shift in workload required us to learn more about best practices for managing and creating financial statements and invoice systems.

Obstacle 8: Succession Planning

Our stakeholders' main concern was how this venture will address the leadership and personnel transition from a group of students to another. In an effort to address this issue, we reached out to other student-led businesses around the country to see how their leadership is organized. Willy's Pub of Rice University responded and we scheduled a phone interview. Helene Dick, a general manager of Willy's Pub, explained that there are approximately 40 part-time workers and 15 part-time managers who are all paid, with managers making slightly more than employees. They also pay for an advisor from the Student Activities Office in order to help

guide the business in their own way. They send out applications, execute the hiring process at the end of the calendar year, and then hold transition meetings early in January. Dick explained that this meeting is convenient because most former managers will be within reach for a semester in order to assist with training. When asked about how they recruit candidates and make sure that they continuously have applicants, Dick said that has never really been an issue. The fact that the positions are paid helps in obtaining applicants, but she also mentioned that there is a certain “cool factor” in working for one of the student businesses on campus that attracts many people (Dick, personal communication, December 12, 2013).

With this information and after several meetings with our stakeholders, we designed the future structure of Gompei’s Goat Cheese. The organization will consist of a Board of the Advisors that will compose of Amy Morton, Peter Thomas, Executive Director of Alumni Relations and Annual Giving, Frank Hoy, Paul R. Beswick Professor of Innovation and Entrepreneurship, and Bryan Rickard. The committee will provide guidance to the leaders of Gompei’s Goat Cheese by meeting with them at least once a term to discuss the past performance of the business, current status, and steps to move forward. Additionally, the organization will comprise of five, unpaid student positions. The positions are designed to provide students with an entrepreneurial opportunity to gain experience while running a student-led, privately labeled goat cheese venture. The five positions are listed below.

Chief Executive Officer (CEO)

- As the CEO, the student will keep close communication and organize meetings with vendors, partners, and the Board of Advisors
- Additionally, the student will delegate work and assign deadlines in order to keep the organization moving forward

Chief Financial Officer (CFO)

- As the CFO, the student will maintain financial statements up-to date such as the balance sheet, income statement, and statement of cash flows
- Additionally, the student will ensure that checks are refunded and bills are paid

Chief Marketing Officer (CMO)

- As the CMO, the student will be in charge of the brand's image by managing the Facebook page, website, advertisements, and labels
- Will maintain a close relationship with WPI's printing services and any form of public advertisements such as The Towers
- Experience preferred in Photoshop, or willing to learn the basics of the software

Chief Operating Officer (COO)

- As the COO, the student will fulfill Chartwells and online orders
- The student will serve as a customer service
- Improve current operations such as distributor, logistics, shipping, and packaging

Chief Sales Officer (CSO)

- As the CSO, the student will find opportunities for expansion outside of WPI, and contact potential business customers
- The student will be charge to communicate with Catering in order to organize potential sales for WPI events

In order to fill in these positions, we implemented a hiring process. An application was designed and was sent out to undergraduates on April 22nd, 2014 and remained opened until April 26th. In the application, students filled information about themselves and ranked each position that interested them. Applicants then were required to submit their resumes to us via e-

mail. After the application process was over, we reviewed each applicant and interviewed potential students with Rickard. Once we selected the students for each of the five positions, we planned on transitioning them by training them with our current operations of Gompei's Goat Cheese. This includes transferring them any relevant documents of the venture, working through operating procedures, and suggesting improvements and possible directions of the venture. By the start of the next academic year, Fall 2014, these five members will now run Gompei's Goat Cheese.

Resource Development

The format of Venture Outline for Student Entrepreneurs (now called, Student Startup Outline, Appendix E) is based from an event Programming Sheet (Appendix F) provided by the Student Activities Office at WPI; we chose this sheet because event planning parallels to a student's venture preparation. The Programming Sheet outlines necessary tasks to effectively plan an event, as well as the person responsible of the event, date to be accomplished, and date accomplished. In this manner, student entrepreneurs will be able to keep track of the responsibilities and priorities of the venture. We chose this programming sheet to base our own resource on because it was designed for students to simplify the event planning process. It also had the time management component of when and by whom each task will be completed by. This is very similar to what we are trying to accomplish, except on a larger scale by planning a venture.

After deciding on the format of our guide, we needed to select the content of the actual resource. In order to decide what the content would be, we considered the obstacles and challenges we encountered with Gompei's Goat Cheese, and our research on startup ventures to find common themes. Based on this, we targeted six common obstacles in Student Startup

Outline so that they are addressed at an early stage. The components of these obstacles are organization, time management, communication with stakeholders, initial funds, business operations, and marketing and sales. The following descriptions of each of these six components briefly summarize the content on the guide, and then provide examples from our experiences and our research to illustrate why the theme was included in the resource.

Organization

The organization section of our guide asks the entrepreneurs to determine the mission and vision of the venture, the skills and leadership necessary to accomplish this vision, and then to recruit people who can bring those skills to the table. One of the first things our team did when we started working together on Gompei's Goat Cheese was to write a vision statement for the venture: "To provide students with an entrepreneurial opportunity to gain experience while running a student-run, privately labeled goat cheese business. The business is designed to increase Worcester Polytechnic Institute's (WPI) brand recognition, engage WPI alumni, support WPI scholarship programs and showcase WPI's entrepreneurial student body." By having this vision statement, our team found we were able to move forward together effectively because we all had an understanding of the direction of the venture. This idea is supported by utilizing mission statement as a "North Star" that keeps everyone clear on the direction of the organization (Smith, 2014, par. 1).

Time Management

The time management section of Student Startup Outline calls for the use of a Gantt Chart using time frames written on the resource. Our research found a lot of examples and testimonials to the amount of time student entrepreneurs must put into their ventures. When

combined with balancing other time obligations such as school, work, sports and/or other clubs and activities, the need to manage this time became evident.

Our team experienced this first-hand and utilized a Gantt Chart (Appendix G) to help us manage our goals, objectives, and tasks. This method was used because it presents the tasks as well as the timeframe to complete them, in a concise way. By organizing tasks in this manner, student entrepreneurs are able to allocate their limited time appropriately to accomplish their objectives and goals by the deadlines established.

Communication with Stakeholders

This section of the resource facilitates the entrepreneurs to understand the expectations of stakeholders, as well as the communication frequency and preferences the stakeholders have. Recognizing a venture may have various stakeholders, Student Startup Outline provides “lines” for each of them. For example, in a university campus, students may partner with various departments for investment or support. In our case study, we discussed this challenge as part of Obstacle 6. Gompei’s Goat Cheese had two co-advisors from different academic departments, a former sponsor, and our current sponsor, who also provided the initial seed money for the venture. Each stakeholder had different expectations and their own preferred methods and frequency of contact. Since each venture and stakeholder is different, students should tailor preferred methods, frequency, and content of meetings depending on the person. Due to its importance, this section was included in our resource because a positive relationship amongst these people could create various opportunities and a sound foundation for the venture.

Initial Funds

This section outlines the process of obtaining initial funding for your venture through establishing the amount of funding required, identifying potential fund sources, and then

developing and presenting a proposal to the funding source. In our experience, we secured initial funding before launching the venture. Without this funding, we would not have been capable of promoting and marketing our product successfully. Initial funding was significant and was addressed in our resource because our research has shown that one of the major reasons startups fail is because they run out of money and are unable to take advantage of their early learning (Lazerow, 2012).

Business Operations

This section asks for the logistics of the business including supply chain, labor needs and responsibilities, and any physical facilities necessary. Many of the obstacles discussed in our case study deal with the operations and logistics of actually creating and supplying the product in an efficient manner. For example, we detailed the decision to use a private labeling strategy and particular farm for online ordering capabilities, in our case study. This drastically reduced the costs and licensing associated with our venture, while opening up an online market. The specifics of these decisions, however, were not detailed until our launch date was approaching, which possibly detracted from our ability to fully capitalize on the holiday season. This section of the resource was included because planning the operations thoroughly, before launch, may lead to more efficient and manageable operations for a student led business.

Marketing and Sales

This section includes determining who your customers are and then how best to reach them. The venture will benefit if the entrepreneurs have a marketing and sales strategy before the initial launch. This includes market research to determine target customers, design advertisements based on those customers, print advertisements if necessary, and determine how you want to sell the product or service. In our case study, we discussed research and publicity

done on Homecoming and our launch day on Founder's Day. Because these events were crucial to our ventures' initial publicity and sales, we found it important to include this section as a part of the resource.

Resource Evaluation: Focus Groups

Design

Before conducting a focus group, there are a few components to consider before beginning, such as the best type of study the researcher needs, the purpose, the number and type of people needed, the questions asked, the structure of the study, and how the results will be analyzed. Although there are various types of research and testing, focus groups were utilized to better understand what resources student entrepreneurs used to start their endeavors while in college or what has hindered them from doing so. Also, utilizing a focus group has another benefit, it permitted us to gain user opinion and assess the effectiveness and value of Student Startup Outline to entrepreneurial students at WPI (Krueger & Casey, 2009). The recommended strategy for product development is to utilize focus groups three different times: to understand the product and create various alternatives, run pilot tests of the product to revise the best alternative and implement it, and then to evaluate the final product (Krueger & Casey, 2009). However, in the interest of time and because the document is in its' pilot stage of development, focus groups helped to improve the resource (Krueger & Casey, 2009).

Some criticisms of focus groups include the legitimacy of the results or a bias in the results. For example, whenever an interview is conducted, there is a potential of the good-subject effect, where the participant responds to the interviewer in a favorable manner (Nichols & Maner, 2008). This action means that the participant acts or answers in the way that he/she believes the interviewer wants, which may not necessarily be true. This effect may be avoided by

not having any misleading questions. Also, there may be a bias in the results when there is an individual that dominates or sways the conversation to their perspective (Krueger & Casey, 2009). In order to deal with this type of person, the moderator must tactfully shift the attention from them to the other participants, and encourage them to speak about the topic at hand.

Although there has been some question of the quality of the results from focus groups in general, there are a number of reasons why the results from the study is still legitimate. In order to better comprehend our surroundings, qualitative interviewing through focus groups allows us the systematically understand people's thoughts and opinions (Rubin & Rubin, 2005). Further, this type of interviewing helps researchers to understand how people are affected by a particular matter, so long as it is carefully moderated.

Since the purpose of the focus group was to evaluate the value and effectiveness of the Student Startup Outline and the resources necessary and obstacles met when launching a student venture, we needed students who could effectively contribute to this topic. While thinking of the type of participants we wanted, we begged the question of who can learn a great deal about the issues and who has the greatest insight (Krueger & Casey, 2009). We determined that students who have an entrepreneurial mindset, who have started a venture, or has seriously considered doing so while attending college, were ideal. In order to find these types of participants, they were selected through recommendations from the School of Business faculty and students, and entrepreneurship club (Rubin & Rubin, 2005). These recommendations allowed for the selection of informed students, as well as a range of differing perspectives and level of involvement with their venture, no matter what stage of establishment it is in. This selection ensured that all of the students would have at least one aspect in common and enough knowledge of entrepreneurship

and its' obstacles to speak of the concepts when starting a venture in college (Krueger & Casey, 2009).

Before conducting the focus groups, it was determined that 24 people would be sufficient to assess the value and effectiveness of Student Startup Outline. At least 30 people are recommended for a sufficient sample size; however, 24 participants were selected because we focused on a very specific group of students, those who wanted to start a venture while attending college (Berg, 2009; Morgan, 1996). In order to allow everyone the opportunity to thoroughly voice their opinions, we determined that four sessions of six people would be best (Morgan, 1996). Also, in having over three sessions with different people, we can sift through the various qualitative data to find patterns in our research to appropriately create recommendations for our project (Krueger & Casey, 2009). We determined that 6 people would best suit the focus group study because it is a small enough group to manage while efficiently transcribing the study after it is done (Berg, 2009; Krueger & Casey, 2009). These focus groups were limited to an hour each session in order to allow sufficient time to discuss the topics as well as not lose interest of the focus study participants (Berg, 2009).

In designing the focus group study, we determined that the multiple-category design was best for this study, as it allows for students who have started a business to interact with students who have not (Krueger & Casey, 2009). Suggested by Markova et al, this type of interaction allows for three effects to happen: “every contribution is interdependent with the previous and possible next contributions, an interaction between thoughts, ideas, and arguments, and the interaction with socio-cultural traditions,” which all led to comprehensive results that would help to further the Student Startup Outline, and better understanding student entrepreneurs and what they need to start a venture (as cited by Belzile & Oberg, 2012, p.462). When planning the focus

group, we wanted to ensure comfort, respect, and a judgment free zone in order to have our participants feel free to share their honest opinions with us (Krueger & Casey, 2009). Jourard suggests that people are more likely to self-disclose information about themselves when they feel comfortable and are around similar people (as cited in Krueger & Casey, 2009, p. 5). In order to foster this kind of environment, all of the names were associated with a letter in order to keep their identities confidential, so as to promote honest opinions during the conversations. This confidentiality also helps to be sensitive of people's ventures and the development of their ideas. In order to conduct our research ethically, we went to WPI's Institutional Review Board to get our study approved. The participant and confidentiality agreement may be found in Appendix Q.

The focus group format was selected in order to obtain a variety of opinions by guiding the conversation with outlined questions, with the ability to adapt the questions as needed to further explore topics of interest (Berg, 2009). The questions of the focus group were based off of prevalent obstacles facing student ventures as well as the case study of Gompei's Goat Cheese. To best delve into these topics in an exploratory approach, we determined that a semi-structured focus group would suffice as it allows for a set of questions that are predetermined but are able to be adapted, based off of the responses given (Powell & Single, 1996; Seidman, 2006). Concerning the development of the questions themselves, we needed to utilize open-ended questions that would easily be understood by the respondent (Seidman, 2006; Krueger & Casey, 2009). Since we wanted to ease the participants discomfort and make them feel like the environment was a safe one to talk honestly in, we started the conversation by having introductions. After that safe environment is fostered, we wanted to continue opening up with simple questions to ease the participants into discussion, such as have they started a business before and what was the kind of business they were thinking about. To delve into the topics, we

wanted to have a scaffolding approach where we have main questions and then follow-up with questions as necessary. For example, in order to understand some of the reasons why people have not yet started a business, we will be asking that question and following up with whether or not funding had an effect on the entrepreneur. In order to ensure the main topics were covered, we asked the questions about successes and failures of a business, familiarity and understanding different components of starting a business, and the value and effectiveness of the Student Startup Outline resource. Some characteristics that were kept in mind to ensure the questions were of good quality were: length of the question, ease of understanding, and were the questions asking for one thing at a time, so as to not confuse the participants (Krueger & Casey, 2009). In order to have effective discussions during the focus group, we anticipated various issues that may occur and ways to resolve them (Krueger & Casey, 2009). For example, we kept in mind someone that would talk too much, as dominating the conversation could lead to biased answers, or someone that does not talk enough, as their own values and opinions are misrepresented. Also, there were questions to bring the conversation back to focus in case the conversation went on a tangent. For a list of preliminary questions, please see Appendix R. Since we are running multiple focus groups, we may learn of a new topic from the first or second studies. Thus, we plan on adding or adapting questions to explore those new topics (Seidman, 2006).

There are a number of characteristics of a successful interview and things to keep in mind as a moderator. Seidman suggests to listen more, talk less, and ask real questions during the conversations (2006). As a moderator, one's job is to listen to what the participants are saying, as he/she needs to understand where the conversation is going, the content, and the direction that it needs to go in. More deeply, a moderator should listen to the underlying meanings of what is being said. This can be done with follow up questions if there is a topic that is not entirely

understood. Being mindful of the time and fatigue of the participants is important because the moderator needs to know how many more topics or questions need to be explored, as well as the status of the participants. If the people are becoming too tired or uninterested in the conversations, then the conversations may go off topic making the data unhelpful towards understanding student entrepreneurs and what would help them (Rubin & Rubin, 2005).

In running the focus group, we wanted to ensure proper data handling to make transcribing and analyzing the data easier to access and manage (Seidman, 2006). The technique we chose was the audio recording method, as it provided a means to easily replay the conversations in order to transcribe it. We also felt this method would place our participants more at ease by not being recorded with a video camera while still being able to capture what they said (Krueger & Casey, 2009). We determined that the best way to warrant quality transcriptions was to combine the audio recording method with note taking, in order to ensure the proper person was associated to their specific comments, without any identifying information being given away (Seidman, 2006). The notes were used specifically to capture details and provide rich and descriptive text (Krueger & Casey, 2009). These notes would prove helpful in the event that the audio recording failed, or if someone was too quiet for the microphone to capture. To properly identify the speaker to their notes, a code was used for each person alongside some of their comments (Krueger & Casey, 2009).

We created full transcriptions for each discussion, instead of an abridged version, where only main topics were summarized. In this way, we remained objective and complete in our data (Krueger & Casey, 2009). The complete transcript of each of the four focus groups may be found in Appendix S, T, U, and V. Other proper document handling practices were collecting and filing every consent and confidentiality agreement, as well as keeping the recording under a secure

password. After the research was finished, proper destruction of the materials was implemented, which includes, but are not limited to, deleting the recordings and shredding any identifying information that ties the participants to a particular focus group session.

In order to effectively analyze the transcriptions, a thorough method was developed. The method contains four components of analysis: systematic, verifiable, sequential and continuous. The method was a systemic procedure that includes transcribing each focus group, looking through each one for significant and reoccurring themes and recommendations, and composing generalizations and recommendations to further improve Student Startup Outline and general resources for students at WPI. This approach is systematic by having a prescribed means to sift through the data and extrapolate reoccurring themes that help us to better understand the purpose of our project; whether or not Student Startup Outline was an effective resource and what obstacles student entrepreneurs anticipate when launching their own venture (Krueger & Casey, 2009; Rubin & Rubin, 2005). In order to verify the information, we ensured that there is enough data to support what obstacles were prevalent when thinking of launching a venture, as well as recommendations for Student Startup Outline. Notes of the focus groups, oral summary of the key points, as well as the transcription of the data, lead to the verification of the data (Krueger & Casey, 2009). Herb suggests that while transcribing the conversations, any notable quotes should be added to a separate file in order to see the overarching themes of the data (as cited by Rubin and Rubin, p. 205, 2005). Analysis should be sequential, which allows for the recognition of concepts, clarification of those concepts, and the development into themes (Rubin & Rubin, 2005). The easiest way to code the concepts is to designate a symbol to each time the concept is spoken about. We proposed that anything dealing with obstacles will be coded with an “O” and recommendations for Student Startup Outline with an “R”. Lastly, analysis should always be

continuous, as data collection and analysis happen concurrently (Krueger & Casey, 2009). This allows us to analyze the data in an iterative cycle. For example, we can determine what questions should be asked or how they should be modified after the first or second focus group (Krueger & Casey, 2009).

All of the analysis components culminated into an adapted version of the Long Table Approach, or the classic analysis approach, offered by Richard Krueger and Mary Anne Casey to analyze our data (2000, p. 132; 2009, p. 119). In this way, we produced a visual of all of the themes and a process to categorize the results. We determined that each focus group session will be sifted through, based on Figure 1. We then wrote out on a chalk board all of the quotes that answered the questions, keeping the focus groups separate from one another. We then labeled a word document with overarching themes, based off of the questions.

1. *Did the participant answer the question that was asked?*
IF YES → Go to question 3.
DONT KNOW → Set it aside and review it later.
NO → Go to question 2.
(If you are undecided or unclear about any answers, then take the conservative approach and save the comments and review it later.)
2. *Does the comment answer a different question in the focus group?*
IF YES → Go to question 3.
IF NO → Put in discard pile (but don't throw the discard pile away until you are done with analysis).
(*Caution:* Don't assume that answers will follow the questions. Occasionally, participants will provide answers to questions asked earlier or to questions that have not yet been asked. When this occurs, move the answer to the appropriate location.)
3. *Does the comment say something of importance about the topic?*
IF YES → Tape it to the newsprint under the appropriate question.
IF NO → Put in discard pile.
(*Tip:* Don't use a lot of tape because you will want to move the quotes around later.)
4. *Is it like something that has been said earlier?*
IF YES → Start grouping like quotes together. You are basically making "piles" (categories) of like things.
IF NO → Start a separate "pile."
You are constantly comparing and making decisions. Is this similar to or different from other things?

Figure 1 Analysis Process

Once the transcript quotes were allotted to specific places, we read through them to create a descriptive summary of what was said, keeping the notable quotes intact, and begin developing themes from the data. In order to further analyze the data, we determined how significant a theme is by looking at how frequent the quote appears or how specific it is, as well as how extensive the theme is throughout the focus groups (Krueger & Casey, 2009). The frequency signifies how common a topic is based on how many times the concept appears throughout the four different sessions. The specificity of the idea shows how much understanding the person has of that topic to delve into that much detail. The extensiveness relates to how many different people said something about a topic. One person can make the same comments repeatedly, which does not merit a significant finding, as compared to a topic that has been stated several times by different people. We focused on the extensiveness of the comments as it provided more insight on the discussion. Once all the data was sifted through, analyzed, and summarized, we developed overarching findings to capture what was determined in relation to the Student Startup Outline guide and perceived obstacles for student entrepreneurs.

Participants

24 participants took part in our study, with 18 men and 6 women. 1 participant was a graduate student, 23 were undergraduate students. The number of students in each grade that participated may be found below in Table 4. All of the majors and/or minors represented may be found in Table 5. Please note some of the people had a combination of majors and/or minors.

Freshmen	Sophomore	Junior	Senior	Graduate
3	2	2	16	1

Table 4 Student Grade Breakdown

Majors	Minors
Mechanical Engineer	Manufacturing
Civil Engineer	Business
Management	History
Management Information Systems	Electrical Engineering
Biomedical Engineer	Economics
Management Engineer	Entrepreneurship
Chemical Engineer	International Studies
Robotics Engineer	
Aerospace Engineer	
Biotechnology	
Chemistry	
Environmental Studies	

Table 5 Majors and/or Minors Represented

Procedure

There were four separate focus groups held. After giving informed consent, participants learned that the study explored the topic of student entrepreneurs, perceived obstacles when launching their venture, and how to promote the fruition of their ventures through WPI resources. Nguyen, the moderator, led discussion by asking the participants to introduce themselves with their name, major, and school year. She began the group discussion by asking questions about the venture the participants were thinking of starting, for example, what the nature or the industry of their venture. As a follow up question, Nguyen asked who has started a business. When there was at least one person who has, she would move forward with that subsection of questions, which focused on the successes, failures, and resources used when launching the venture. When there was no one that has started a business, Nguyen would ask questions focusing on perceived obstacles that limited the participants from starting their venture and resources that they have heard of on campus, that are available to them. After some discussion, Nguyen moved onto passing around Student Startup Outline and gave the

participants time to look through the document. Once 1-2 minutes passed, Nguyen began asking questions concerning the helpfulness of the resource, should the participants use it when launching their endeavor. She also followed up by asking what components of the documents were unnecessary, particularly helpful, and whether or not it is practical to use. As a wrap-up question, Nguyen asked the participants if they thought WPI was a good place to start a business and some of the reasons why. She developed this question after the conversation during the first focus group conducted.

During the discussion, when there was a response that was needed clarification, Nguyen would ask a more specific question. Honesty was encouraged throughout the small group discussions through various questions about people's understanding or involvement of the resources on WPI's campus. If students were not being talkative enough, Nguyen would encourage him/her to speak their mind by asking them a question directly and explain his or her thought process.

The focus groups had six people allotted to each discussion. However, there were moments where people had to cancel or did not show up. Nguyen had back-up participants that were able to fill in the missing spots; however, this led to the groups ranging from 5-7 students. Nguyen continued the study regardless of how many people were present.

The first session ran for 27 minutes and 19 seconds. With this session being the first, it was the quickest one to run through because Nguyen read the questions. None of the 5 students in this session started a business. In noticing how little people responded towards one another the conversation ended abruptly after the question was answered. However, we learned of other potential questions to ask to promote more thorough responses, such as "what more can WPI do for you to help you launch your venture" and "what resources does WPI have for your use to

start a business”. Also, when asking for opinions on the student resource, the first student responded positively. Soon after, everyone generally agreed with the first person. We learned that sometimes, the first person’s opinion may sway the other participants’ feelings. Thus we wanted to make sure we encouraged any and all opinions on the resource for the future discussions.

The second session ran for 41 minutes and 34 seconds. This session had 1 person that had started a business, and 5 that have not. People were naturally more talkative in this session, as they added onto each other’s ideas and were more knowledgeable about the resources than the first group. Moderation to quell the talkative students was not necessary, as the participants had a detailed response but allowed others the opportunity to speak afterwards. The first participant to speak about Student Startup Outline was not too impressed, which set the tone for the other participants. However, people did speak highly of the organization of the resource. Nguyen made sure to ask for any and all opinions.

The third session ran for 48 minutes and 59 seconds. This group was the most talkative session, as the participants seemed very friendly towards one another and felt comfortable enough to ask each other questions. Out of the 6 students in this group, 1 started a business. Much of the discussion revolved around resources that this participant used in started his business and his experiences, which were both positive and negative. Since he had much information, Nguyen asked him to delve into his experiences to educate the other participants as well as encourage them to speak. Also, when speaking about the resource, people agreed or disagreed comfortably.

The fourth session ran for 37 minutes and 13 seconds. This session was the most concise group, with everyone working off of each other’s comments and supporting or disagreeing with

each other with logical reasons. Out of the 7 participants, 2 started a business. The moderator, being the last session to conduct, had the easiest time leading the discussion and asking clarifying questions if necessary.

Materials

Nguyen conducted the focus groups by reserving a quiet room, Salisbury Labs 313. We deemed this room sufficient because it had a comfortable space for everyone to have a seat at a round table, which eased group discussions. Nguyen read off of her computer to ensure everyone heard a similar, if not the same, question. She also passed around the same documents that other groups had in order to obtain comments about the same topic. This material was also chosen because it was easier to administer, as well as minimize exposure of different conditions to other participants. In order to compensate participants for their time, we offered a \$20 gift card to either Amazon or Barnes and Noble, a log of Gompei's Goat Cheese, and pizza.

Data Management & Storage

As the information we obtained from the focus groups may be sensitive, we followed certain procedures to keep the data secure, per IRB guidelines. The data was secured on a cell phone with a password lock, as well as on a secure laptop. The only person with access to the audio recordings of the focus groups was Nguyen. After the end of the study, the data collected was destroyed.

Findings and Analysis

The following section delves into the findings from our focus group. It concentrates on the data from the discussions, perceived and actual obstacles of the student entrepreneurs at WPI, and the opinions of Student Startup Outline.

Focus Groups

Given the data from the focus groups, we counted the extensiveness of particular comments, or the number of times a comment was made by different people. Note that some comments were generalized together as we felt that the topic was relatable, such as comments on the simplicity versus the thoroughness of the design. “N/A” represents that the particular question was not brought up in that discussion.

There were a number of perceived and actual obstacles mentioned by the participants. The actual comments and totals may be found below in Table 6. The most popular obstacle was that the participants felt that they did not know about WPI’s resources, such as courses, mentorship groups, like the TAN Network, or the business competitions, such as the Venture Forum, early enough. Another obstacle was having enough time to launch their venture, in balancing school work, clubs, and maybe trying to find a full-time job, especially pertaining to seniors. The third obstacle was being unaware of what is available for the participants’ use when launching a business. The next ranking obstacle is being wary of WPI taking a portion of the venture, by launching the business on campus or utilizing campus resources. The least common obstacles were acquiring initial capital, or funding, understanding the legal components of launching a venture, which also deals with obtaining licenses or permits, and a lack of having experienced mentors.

	FG 1 (out of 5)	FG 2 (out of 6)	FG 3 (out of 6)	FG 4 (out of 7)	Total (out of 24)
Earlier Exposure	5	2	6	3	16
Lack of Time	5	2	6	2	15
Unaware of what's available	3	3	6	2	14
Tech Transfer/ WPI Ownership	1	6	3	2	12
Initial Capital	5	2	2	2	11
Legal Knowledge/Licensing	2	2	2	5	11
Lack of mentors or business partners	0	4	6	1	11

Table 6 Perceived/ Actual Obstacles in Starting a Venture

Throughout the focus groups, Nguyen inquired about the familiarity of various resources on campus, such as entrepreneurship classes and the entrepreneurship club. The tally of how many people were familiar, as indicated by yes, and unfamiliar, as indicated by no, may be found in Table 7 below. Participants were more aware of entrepreneurship classes (ETR) in general, than the specific course ETR 330X and the club.

WPI Resources	FG 1		FG 2		FG 3		FG 4		Total Yes (out of 24)	Total No (out of 24)
	Yes	No	Yes	No	Yes	No	Yes	No		
ETR Classes	4	1	2	4	5	1	N/A	N/A	11	6
ETR 330X	2	2	2	4	0	6	1	6	5	18
ETR Club	3	2	N/A	N/A	4	2	0	7	7	11

Table 7 Familiarity of Various WPI Resources

Various comments were made about the usefulness, or the value, of Student Startup Outline. The number of comments made on whether it was valuable or not, labeled positive or negative respectively, may be found in Table 8 below. Generally, participants thought this resource was valuable.

	FG 1	FG 2	FG 3	FG 4	Total (out of 24)
Positive	5	3	5	6	19
Negative	0	3	1	1	5

Table 8 Number of Comments on Value of Student Startup Outline

Similarly, participants made a number of comments about the effectiveness of the resource, that is, whether or not they would utilize it. Mostly, participants would not actually use the resource as it was given in the focus groups. However, a number mentioned that they would use it if there were additional sections or attachments. This information may be found in Table 9 below.

	FG 1	FG 2	FG 3	FG 4	Total (out of 24)
Positive	5	1	1	0	7
Negative	0	5	5	7	17

Table 9 Number of Comments on Effectiveness of the Student Startup Outline

Various concerns were made about the resource as a whole, of which the count may be found in Table 10 below. Eighteen people agreed that it would be beneficial if they had a list of consensual contacts that the participants may contact for questions or ideas about their student venture. Sixteen people commented on the simplicity of the resource versus how thorough it is on detailing the components of a venture. Legal concerns dealt with anything related to understanding intellectual property (IP), getting in contact with lawyers, and obtaining licensing and permits. Design comments were generally how the resource looked. Flexibility observations made note of potential outlets or avenues of how the resource can be housed. For example, participants mentioned it could be available online or be adaptable based on what kind of venture its' being used for. Lastly, a participant suggested having a section that focused on ethics and how to help the entrepreneur be mindful of that when launching their business.

Concerns	Total (out of 24)
Lack of Contacts	18
Simplicity vs. Thoroughness	16
Legal	9
Design	7
Flexibility	6
Ethics	5

Table 10 Concerns and Count of Comments About Student Startup Outline

Perceived and Actual Obstacles

One of the consistent questions asked in the focus group was, “If you have not started a business, what are some of the reasons for that?” Of the comments, almost every participant agreed that a lack of initial capital was an obstacle. The issue ranged from finding investors, whether through Angel investors or business competitions such as Mass Challenge or the Venture Forum, having the confidence to apply for a loan for the venture, to understanding best practices for financial accounting and money allocation. In regards to the students who have already launched their venture, they mentioned that time management and acquiring and managing finances were issues. Following those issues was a lack of a safe guard against potential investments lost, a safety net should the business fail, or a safe environment in which to test out one’s venture before entering competitions against experienced competitors, such as in the Venture Forum. Another obstacle that prevented the students from moving forward with their own ventures was a lack of time. This issue stemmed from the course load being too demanding while balancing extracurricular activities, courses, and sports. Additionally, a perceived obstacle was a lack of legal knowledge regarding how to file patents, how to handle IP and not impede on anyone else’s IP, who to talk to for legal advice, and knowing which licenses and certifications to apply for. On a related note, the idea of WPI taking partial ownership of the students’ venture was a deterrent. The last obstacle dealt with the understanding of WPI resources. Most of the

participants were not familiar enough with the business and/or entrepreneurship courses, entrepreneurship clubs, or competitions, such as the Venture Forum or Mass Challenge, to want to explore them. Other resources mentioned included: STAR Mentor program, a program in which a student may be paired with an alumnus as a mentor; Tech Transfer, an office which helps students with patents for their prototypes or processes; and TAN program, a group of WPI alumni who are mentors to the entrepreneur.

We created Figure 2 below to illustrate the different types of resources on WPI's campus and to show specific examples of what those resources are. As we can see, there are multiple avenues that students can go through for help when starting a venture; however, the participants said they are unaware of them. This illustration displays the variety of resources available, with each providing its' own benefit to the student. These resource categories may include, but are not limited to: academic, non-academic, and formal non-academic resources, and student clubs. Examples of academic resources are various courses or professors focusing on business and/or entrepreneurship. These academic resources provide professional and experienced help, while some of the informal resources may be easier to access. Informal non-academic resources are composed of Worcester Polytechnic Institute's (WPI) alumni that have experience in the industry as well as other online resources available. These resources provide potential mentorship as well as accessible information. Formal non-academic resources include established mentorship groups such as the Tech Advisors Network or offices/departments within WPI that may help students gain insight as to how to launch/progress their business. Currently, there is only one student club on campus, which is the Entrepreneurship Club that provides networking events and workshops. We believe that our Student Startup Outline can become a part of this collective resource pool, and ties other resources together.

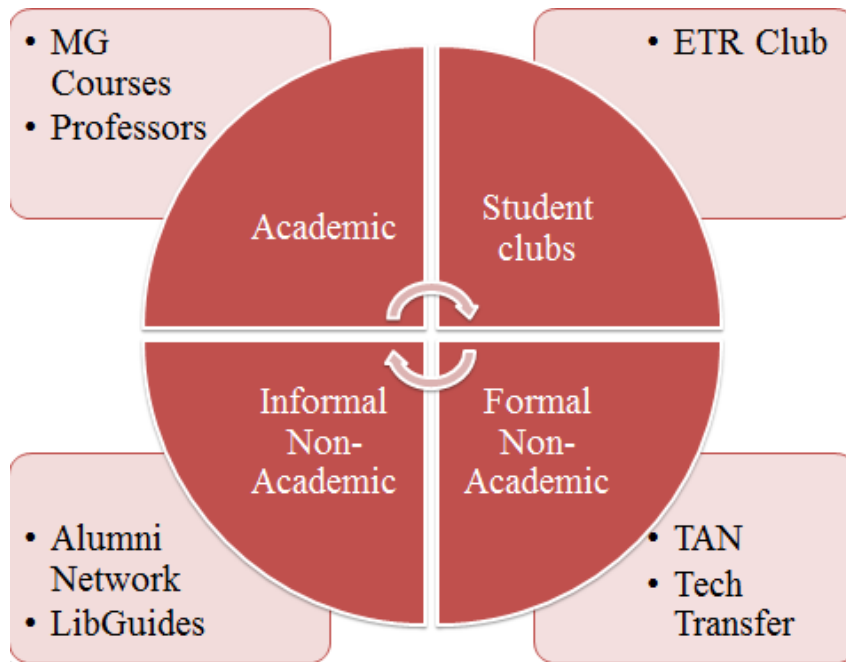


Figure 2 Categories of WPI Resources

Additional generalized statements that were notable from the focus group may be found below:

- WPI is a good place to start a business because: “project oriented,” “there’s tons of people here you can find across all different majors and areas of expertise,” and “[WPI] can put you in front of the right people”
- Let students know earlier that starting a business is possible, such as when they are freshmen or sophomores

Revision of Student Startup Outline

From our case study and focus groups, we chose data we understood that would be most helpful for student entrepreneurs at WPI when revising Student Startup Outline. This section focuses on the content, format/design, value, and effectiveness of Student Startup Outline. Having chosen the criteria we wanted to focus on for the document, our group revised Student Startup Outline appropriately.

Content

There were various comments concerning the content of the Student Startup Outline. General comments included additional sections, additions attached to Student Startup Outline, and the customization of the resource. Some of the main revisions may be seen in Table 11 below.

Feedback or Concern	Result/Revised Section
Additional Sections within Student Startup Outline	Introduction section to explain purpose and how to utilize Student Startup Outline Revision step to make sure entrepreneur takes the time to revise venture, if necessary Ethics section to discuss considering ethics while conducting business Legality section to handle IP, patents, licensing, and certificates
Needs Additions alongside Student Startup Outline	Resource sheet of what's available at WPI, descriptions of what they do, and contact information
Customization (Recommendation)	Electronic/Digital Version so that it is easier to update than a paper guide Give the entrepreneur the opportunity to select what sections they feel is relevant to them

Table 11 Content Revisions

We added an introduction to the resource in order to provide an overview of the document and a brief explanation of how to use Student Startup Outline, as well as a revision step to remind the entrepreneur to review the mission statement, objectives, and goals to ensure it is still pertinent to the venture. Additionally, we put in sections to encourage considerations on ethical actions and legality concerns. An ethics section was appropriate to add to Student Startup Outline because we believed that it may help the student to follow best practices when launching

and running their venture. With a legal section, we wanted to promote thought of necessary permits, certificates, regulations, and patents. We felt these changes would lead to a more thorough consideration of the student venture. Concerning additional attachments to Student Startup Outline, we added a list of resources of what is available to the student entrepreneur on campus. Some of the resources include potential competitions to enter to gain mentors and/or funding as well as a WPI office that may help with patents. For customization, we received feedback that the participants would want the option of having a digital version in order to ease the process of keeping the worksheet up-to-date. Also, they insisted on being able to customize the worksheet by adjusting the document to only display the sections that they felt were applicable to them.

Throughout the small group discussions, there were disagreements on whether or not Student Startup Outline was too simple versus too thorough. Many comments explained how the resource was a great overview of things to consider when planning a business. In opposition to that comment, one participant, Q, voiced his concern that because the worksheet is too detailed, it may stop the entrepreneur from moving forward with the venture if he/she is stuck on one component from “over analysis”. At least two participants said that the document might need to be more detailed to explain the actual process of the step; for example, how to exactly find investors.

Format/Design

Considering the format and design of the resource, comments were made about the checklist format and aesthetics. A couple of the main changes can be viewed below in Table 12.

Feedback or Concern	Result/Revised Section
Approval of the checklist format	Enlarged the check boxes and added one to each step
Too many lines in the Communication with Stakeholders	Grid style, in order to simplify the organization of the checklist

Table 12 Format and Design Revisions

In listening to some of the feedback, the checklist format was a well-liked aspect. One participant mentioned that it provided an “affirmative style”, which made him feel more confident in keeping track of what needed to be done. To encourage that behavior and ease the tracking progress, we added a checkbox to each step. Another agreed upon comment was that there were too many lines within the section of the Communication with Stakeholders, which made the document visually overwhelming. In order to appease that comment, we create a grid to replace the repetition of the lines.

Within the discussion, there was a conversation about whether or not bullets or a numbering system would be the best way to organize the guide. One person suggested that the numbering system may lead the user to become stuck on that particular component before moving onto the next one. For instance, the entrepreneur might get too caught up on developing the mission statement before communicating with stakeholders, or trying to find them. Thus, they suggested utilizing bullets would mollify that issue. However, counter arguments were made that there should be a chronological system, in order of importance, so as to help the student entrepreneur know what to do or to know what are the important components in starting a venture.

Assessing the Value and Effectiveness of Student Startup Outline

We obtained useful information regarding the value of the Student Startup Outline through the focus groups. Key topics from the discussions were led by questions about the value and effectiveness of the document to student entrepreneurs. In assessing the value of Student

Startup Outline, we define value as whether or not the participants would see it being helpful to them in launching their venture. Key findings their supporting quotes on the value of the Student Startup Outline guide may be found in Table 13 below.

Valuable?	Representative Quotes from Focus Groups
Yes	Having an outline like this gives me the confidence [to plan out the venture]
	Even if I did have business background... it would still help me because... you look at... really good broad areas to focus on
	[It has] goals that are measureable and achievable
	[This is] a preliminary analysis of whether or not it's worth it
No	You'll never know as little about your venture as when you're at the start [when filling out Student Startup Outline]
	It would be great to go back and actually make changes [electronically]
	Fairly organized person... stuff... seems like you would... logically do
	I wouldn't use this because for me, it's kind of outdated

Table 13 Key Findings on the Value of Student Startup Outline and Supporting Quotes

Across all four focus groups, a majority of the participants agreed that this document would be useful in launching their endeavors, given that there were additional resources explaining the resources on campus or clearer means to keep track of all of the data you would put on the worksheet.

In assessing the effectiveness, we define effectiveness as whether or not the student entrepreneur would actually use the guide. Key findings and their supporting quotes on the effectiveness of the Student Startup Outline guide may be found in Table 14 below.

Effective?	Representative Quotes from Focus Groups
Yes	S: There are a bunch of companies I plan on doing, this would help a lot.
	U: I've never felt more capable to get it done than when it was laid out in front of me
	W: Good documentation to keep track of how long you think something takes and how long it actually took. So you could plan future things
	R: Good way of... maintaining accountability
No	Q: Most of these things [when starting my business], I didn't use.
	F: I would... [use] this once or twice when I'm actually organizing something. But to actually track my progress... I would end up creating my own little spreadsheet
	K: If I'm put in touch with someone within the industry... I would scrap this immediately
	S: Can also be intimidating

Table 14 Key Findings on the Effectiveness of Student Startup Outline and Supporting Quotes

We collected a range of opinions regarding the effectiveness of Student Startup Outline. Although the general consensus was that the guide was valuable, the participants would not really use it unless there were more useful attachments to the document. Such attachments include a list of on campus resources or a list of contact information of people who could provide valuable information regarding key business components.

Attachments

After various comments about a resource list, we felt it was beneficial to pursue the idea to strengthen our resource. We compiled an initial list of resources from the WPI website, such as undergraduate entrepreneurial courses and other organizations. Afterwards, we interviewed Gina Betti, Associate Director of Collaborative for Entrepreneurship & Innovation, to ensure that the document detailing on-campus resources was thorough. We believed she was the best person to interview because of her experience with various entrepreneurial programs in partnership with WPI. Our final attachment to the list of resources, titled “WPI Entrepreneurship Resources” may be found in Appendix X.

Analysis

After the initial draft of the resource, we analyzed the document with our own experiences in launching Gompei's Goat Cheese, which may be found within the section, Preliminary Analysis. Once the focus groups were completed, we analyzed our findings based off of the focus group discussions, which may be found in Secondary Analysis.

Preliminary Analysis

As mentioned in our literature review, it is essential to write a type of business plan when formalizing an endeavor. For our case study, the business plan was already created; thus, it provided some direction and background knowledge. However, the document was not helpful during the implementation of the venture because it was difficult to navigate through and was outdated. Another aspect of not utilizing the model was due to the lack of desire to sift through 27 pages of the business plan. We realized that having a more concise list of components to utilize when starting a business would be preferable.

The resource, Student Startup Outline, with only 4 pages, provides a quick reminder of what tasks need to be completed. It helps focus students when getting overwhelmed with tasks and priorities. This document may also be utilized during a transition period between student entrepreneurs. The students may utilize the document to detail when transition will occur, with whom, and other logistical matter. Since student endeavors have a frequent turnover rate, due to graduation, this worksheet can provide insight into the state of the organization and its needs.

Despite the benefits of Student Startup Outline, we believe there are areas of growth to strengthen the document. One is assumption the depth of understanding by the student entrepreneurs. Not all students might know how to compose a comprehensive financial statement or Gantt Chart, for example. Additionally, the student entrepreneurs may not conduct enough

research to comprehend each business component; therefore, they might not plan their actions according to the launch of their venture. During our case study, Gompei's Goat Cheese, we did not create a comprehensive financial statements or balance sheets when requested by the sponsor due to a lack of knowledge in doing so.

Another shortcoming of the worksheet is that if it is not read thoroughly or utilized properly before the launch of a venture, it loses its' purpose and effectiveness. A perfect example of this situation is when we failed to utilize the business plan provided by the previous MQP, which had marketing campaign suggestions regarding the launch of the venture. Instead, we acted on what thought was best, using time ineffectively occasionally.

Secondary Analysis

An original obstacle we believed in starting a venture at WPI was that there was a lack of resources on campus. Soon after, we realized that was not necessarily the issue. The question we then begged was, are students aware of the resources available to them on campus? In this portion, we analyze the results of this question and relate it to Student Startup Outline and how to help student entrepreneurs with their own endeavors. We also analyze the capabilities and limitations of Student Startup Outline, as well as the overall limitations of our study.

Understanding of On Campus Resources

From launching Gompei's Goat Cheese and running the focus groups, we realized that students are unaware of the resources on campus. No matter the major of the student, whether Management, Biomedical Engineering, Chemical Engineering to name a few, they were not familiar with what is available on campus. A few participants even said that they had no idea that some of the resources mentioned even existed, or if they knew of the resource, but did not find it valuable (exact quotes were from participants D, E, and N, which may be found within Appendix

S, S, and U respectively). This lack of understanding of resources reveals a couple of relevant issues. The first issue is a lack of standardization on how to start a venture on campus. One participant, R, mentioned that when she tried to start her own company in partnership with WPI, she “went through this whole bureaucratic chain of people”, got nowhere with her conversations, and gave up on her endeavor (Appendix U). Participant Q replied that he had to speak with 20 people before he realized what some of the resources were on campus. This situation suggests the idea that the resources are not clear to students on campus (Appendix U). In order to foster entrepreneurship on campus, WPI may consider making these resources known earlier and more frequently to students.

The second issue dealt with the perseverance of the student and what they were willing to do in order to launch their venture. Participant S said you have to be “dumb and determined” to launch a venture (Appendix V). His reasoning was because a student truly needs to persevere through obstacles such as time management, stress, and order fulfillment, to continue pursuing their business. Being a student, he admits he has left class to take business calls, which was seconded by student V (Appendix V). With this case, we realized how important it is to be motivated in launching a venture. In the example of participant Q, he supports this comment by taking the time to talk with 20 people to ensure the success of his business. In the end, it is determined that the launch of the venture is truly up to student to pursue (Appendix U).

Capabilities and Limitations of Student Startup Outline

Concerning Student Startup Outline, we mollified some of the concerns of the student entrepreneurs such as time and initial capital. We saw that time was a prominent issue for student entrepreneurs, whether they have started a business or not. For those who have started a business, they said that having enough time to complete orders or run the business was always difficult.

We felt that we could not feasibly teach someone how to have effective time management through our resource, but we could address this obstacle by making it easier to keep track of their tasks to start their venture. Thus, with the time management section within the document, as well as tracking tasks that needs to be accomplished, we believed this resource would help break down the components of starting a venture into a feasible process that was not too overwhelming. With initial capital, we addressed the entrepreneurs concerns of how to find funding through the additional resource sheet. In this way, we will document potential opportunities for the student to raise capital.

Although some concerns with Student Startup Outline were addressed within the original document, we realized that to optimize it, we needed to make additional changes based on the feedback from the focus group discussions. With the document being printed on paper, some participants expressed their concern of the sheet becoming static very quickly. Overall, the document did not necessarily spell out how to accomplish each step of how to conduct market and sales research, but went into detail about scheduling meetings. It was determined that there needed to be a better balance between listing out steps and providing more guidance as to how to accomplish the steps. When considering finding additional group partners, there was a question made about how to go about actually obtaining them. Since we determined that the purpose of our guide was to help provoke the entrepreneur to think of the components they need to start a business, not to walk them through every step of the way. We wanted to remain simplistic with our steps, but detailed in our additional source. Another concern of the worksheet was the value and effectiveness of it to student entrepreneurs. Most people believed the resource was helpful, but when asked if they would actually use it or not, participants mentioned they would only do so if there were certain changes. People preferred to have mentors when figuring out the logistics

for their ventures, rather than utilizing a resource that listed out components to consider.

However, we believe that by coupling our document with a list of resources available at WPI, our resource can help facilitate relationships and conversations with a potential mentor.

The focus groups provided qualitative data on the perceptions of student entrepreneurs at WPI, as well as valuable opinions concerning Student Startup Outline. Most of the participants had solid business ideas, but felt unsure of how to proceed without having a mentor or a central resource to utilize. When they heard that there was already a mentorship program, business competitions, and legal advice, they were astounded. Thus, many participants felt that there could be more effective marketing for the resources available as well as shown the value that it could add to their own endeavor. Through the various discussions, we realized that effectively marketing this document to the WPI community would be the biggest obstacle in getting students to use Student Startup Outline for their own venture. We believe that this document will only be valuable and effective to someone who truly is dedicated to pursuing their venture.

Limitations of Methods

One limitation of our study was that we wanted to focus promoting student-led ventures that had a partnership with WPI. Of the 24 various participants, only one wanted to actually partner with WPI to launch her endeavor. Nevertheless, we believed through helping students launch whatever venture they desired, this may increase the number of partnerships with WPI. Another limitation included not having a large a sample size to generalize the opinions to the WPI community. Having a bigger sample size would have better represented the population as a whole, as well as elicited more accurate results. However, because we wanted a particular type of student, one who seriously considered starting a venture, we felt that a smaller sample size would be appropriate. Also, not all of the participants in the focus groups were students from the School

of Business, or had taken any business or entrepreneurial classes. Thus, some of their knowledge of how to create a Gantt Chart or how to find potential investors may have been limited. The dynamics between management related majors and engineering majors proved to be useful when analyzing the value and effectiveness on Student Startup Outline, as they provided different perspectives which strengthen our guide. Similarly, not all of the participants have started a business, so the obstacles that they spoke of are perceived obstacles. However, the dialogue between those dynamics provided some insight as to what would truly help achieve our goal with the document.

Recommendations

Based on the analysis of our research of student-led ventures and startups, work with Gompei's Goat Cheese, resource development, and resource evaluation, we have developed several recommendations. The first set of recommendations focuses on improvement and usage of the student resource we created. The second set of recommendations pertains to growing and supporting student entrepreneurship at WPI. The third set of recommendations is for students about to begin a student-led venture on campus. We then continued to make recommendations regarding future project work related to our topic at WPI.

Improvement and Implementation of Student Startup Outline

***Recommendation #1:** Further develop the resource and contact list to provide up to date resources, how they can help, and contacts willing to give students advice*

The feedback we received during our focus groups was that students who have an interest in starting a business are not sure of the resources available on campus. To address this feedback, we added a list of other WPI resources to our document for the students to reference. Going forward, we recommend that this list be further developed by explaining the usefulness and purpose of each resource, and to keep it up to date. Additionally, some feedback we received was that students were not sure who they could contact regarding their ideas and felt intimidated approaching professors. We recommend that in addition to the resource list, a contact list of professors and other individuals interested in providing guidance to student entrepreneurs be created. This would require developing relationships with professors and other interested individuals to find out what kind of guidance they felt comfortable providing, and in what capacity. This could then be communicated on the contact list. For example, if Professor A is a legal expert and is willing to provide initial direction to students regarding legal processes, this

could be communicated through the list so students know whom they could contact for legal advice.

Recommendation #2: Utilize our Student Startup Outline before and during the process of pursuing a student venture, and evaluate its effectiveness as a startup tool

As mentioned earlier, the timing of our venture required that we begin pursuing the business operations early on in the year, and then develop our resource for student startups. Because of this, we used the focus groups for our analysis; however, our resource has yet to actually aid in the creation of a student venture. Since we were not able to begin our venture using the resource, we encourage that this resource should be used by a future student venture and tested to observe its effectiveness. We recommend utilizing a business plan or business canvas model in addition to our resource to be able to further analyze the strengths and weaknesses of the different types of business planning tools.

Recommendation #3: Use future analysis of the resource to continue to develop its effectiveness as a comprehensive, flexible digital version, capable of customization, yet still simple for student entrepreneurs to utilize

As more groups utilize the tool, it should be continuously improved and adjusted to be able to provide strong guidance to student entrepreneurs. The feedback from our focus groups showed that many individuals asked for a digital version that they could use, and also one that would allow them to customize certain aspects of the resource to make it better tailored to their own venture. Since the inherent value of our resource lies within it being a venture planning tool created by students to be simple yet effective to use in helping them plan their ventures, we recommend that these improvements be made to the resource, with this ease of use always in mind.

Growth and Support of Student Entrepreneurship at WPI

Recommendation #1: Clarify and promote the available entrepreneurial resources WPI has to students, particularly to those early in their career

One of the themes amongst our focus groups was a lack of knowledge about the resources available to students interested in starting a business while on campus. Some students had no idea that these resources existed besides the business classes. From our own experience with TAN and investigation into the topic, we knew that resources existed, but may remain unknown to students due to inefficient marketing or attention from the student. We recommend that WPI promotes more effectively what the resources are and how to utilize them. Furthermore, we recommend that freshman and sophomores, in particular, be targeted because they may not yet have strong commitments to other organizations. These students are more likely to have time to devote to a student-led business.

Recommendation #2: Provide easier access and space within curriculum for students to take business and entrepreneurial classes

Many of the students that participated in our focus groups said that time is a major factor holding them back from starting a business. Furthermore, many non-management majors said that they simply did not have the space in their class schedule to take entrepreneurial or business classes. Either their major was very strict on the classes that needed to be taken, or they did not want to take a class that would not count towards their major requirements. We recommend that WPI takes further actions to make it easier and more desirable to take such classes. A possible example to follow is the Robotics major, which requires students to take an entrepreneurship class. Another possible avenue the school could take is to offer 1/6 or 1/12 credit entrepreneurship classes for students. This would expose interested students to the basics of

starting a business, but not take up the time or space of a full class. Another way to promote exposure of entrepreneurship or starting a business would be through promoting it through project work such as Great Problems Seminar, a freshmen course, IQP, or MQP.

When Starting Student Ventures

Recommendation #1: *Put the time and effort into understanding the campus resources and searching for potential passionate partners to support the venture*

One of the strengths of launching a student venture within a university setting is that you are surrounded by an already established enterprise. Our research showed that the majority of student ventures are started through partnership or sponsorship from their university. Whether this may be from an Entrepreneurial Center like Elon University, or through a dedicated center for student businesses like UMASS, there are departments and organizations that will help support students in pursuing their ventures. The case study of Gompei's Goat Cheese illustrated the importance of these relationships on WPI's campus. We were able to secure funding through a partnership with the WPI Marketing Department, decreased liability and an easier operational process through a partnership with Chartwells, and free advertising to alumni through a relationship with Alumni Relations. These are just a few of the relationships and partnerships that helped move the venture forward.

Recommendation #2: *Continuously strive to improve on time management and stakeholder communication skills in order to make the most of the venture*

Our literature review referenced the heavy demands on the time of student entrepreneurs with their own ventures. During our case study, we found that once we implemented and held ourselves to utilizing a Gantt chart, our productivity increased because we had established deadlines that everyone knew of in advance. We recommend using a tool like a Gantt chart to

keep the venture running on time and efficiently. We also observed during our case study that communicating expectations with key stakeholders is important to keep your venture moving in a consistently positive direction. Establishing consistent meeting times to address these expectations and progress is important to retaining stakeholder support. We recommend using Student Startup Outline to organize these expectations and meetings with stakeholders.

Future Project Opportunities

Our work with student ventures on WPI's campus has shown us that there is still plenty of potential for project work regarding this topic. Students revealed that they were unaware of the resources available to them on campus. A future project may include figuring out how to make students more aware, when the appropriate time is to market them, and where the resources should be marketed. We believe another project could further develop our resource for student startups through the creation of a venture using our resource, and then revising it based on the group's experience. In this way, the resource may be changed based on actual experiences, rather than perceived ones. Another future project could be better understanding the entrepreneurial capabilities of the university compared to other schools around the country, and making recommendations to WPI on what it can do to improve. This project would allow an innovative and dynamic approach to furthering the Innovation and Entrepreneurship division of WPI. Lastly, future project work could involve helping a student-led venture at WPI grow in some capacity. For example, if Gompei's Goat Cheese were to decide to enter a new market, a project team could be utilized to help them to market research and make recommendations.

Improvements for Future Projects

From our own project experience, our group recommends that future teams set clear, defined goals and expectations of the project from the beginning. While projects should be

flexible, we found out in our experience that we had not defined the academic outcomes of our project early on. This meant lost time adjusting our goals, and more effort communicating with advisors and sponsors to make sure everyone was on the same page. The project team should establish as early as possible what the needs of the stakeholders are, and then what methods and outcomes will be undertaken to meet these needs.

Conclusion

The goal of this project was to provide a resource to aid student entrepreneurs by detailing necessary components for their venture. Before designing such resource, we sought to understand student ventures by researching and identifying common startup challenges, while launching our own venture. Based on this data collection, we designed a resource called Student Startup Outline, which is a document that acts as a guide for student entrepreneurs when planning their ventures. Student Startup Outline was then evaluated by focus groups and it was revised based on our findings. We believe that this document may help students to effectively address potential startup concerns while helping them plan their ventures.

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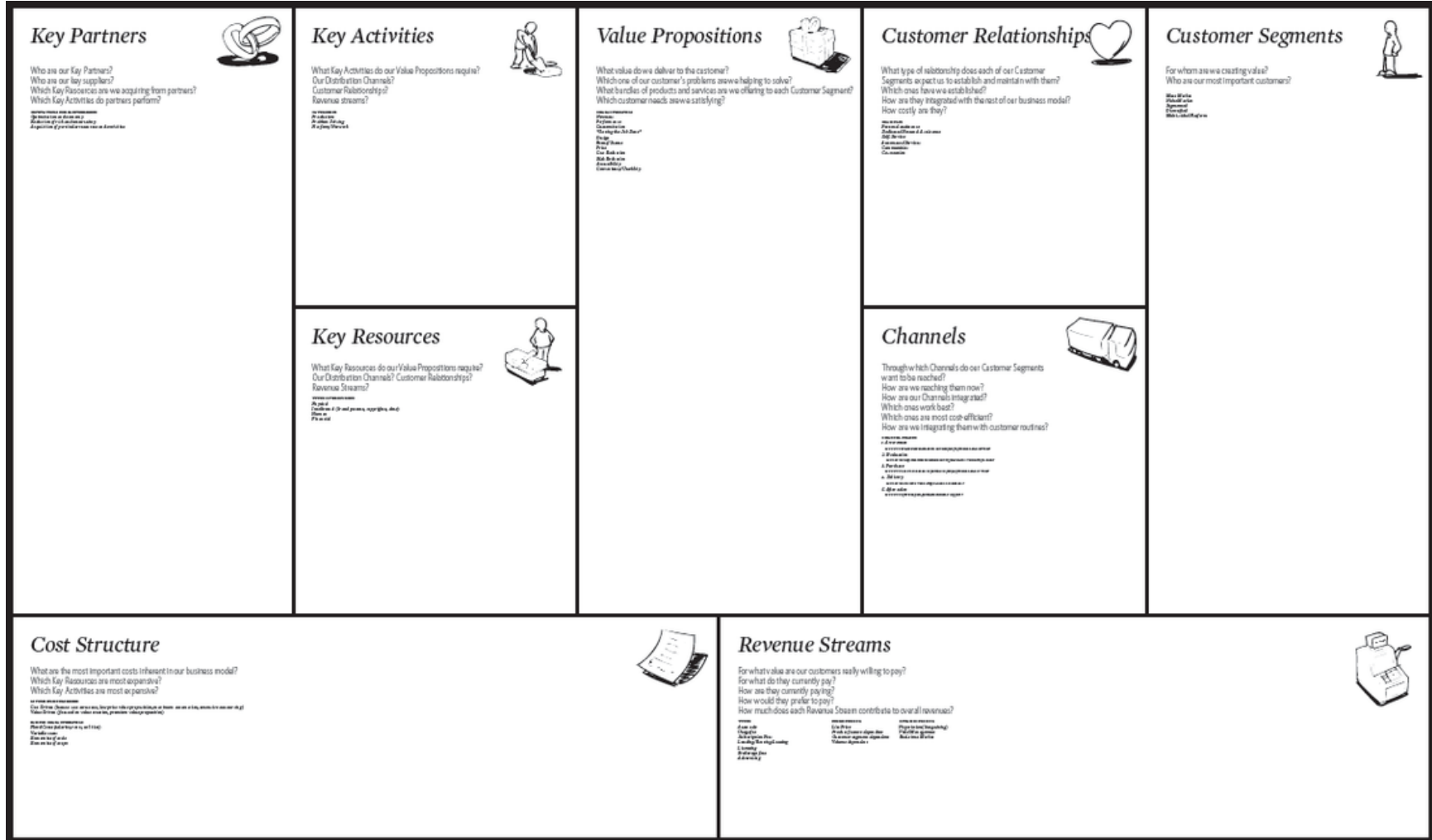
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Appendix A: Business Model Canvas



Appendix B: Example of a Weekly Activity Report

Weekly Activity Report (University of Northern Iowa)

Tracking projects and progress is an essential part of working with clients. When entering your work into this log be specific about the tasks performed and the amount of time spent on each task.



Name _____
Account group _____
Client: _____
Week of: _____

Day	Hours	Description
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

Total Hours: _____

Comments/ Concerns: (all comments and concerns are kept confidential)

Appendix C: Opening Day Balance Sheet (SCORE)

Opening Day Balance Sheet

Enter your Company Name here

Assets

<u>Current Assets</u>	\$	<u>Current Liabilities</u>	\$
Cash in Bank	-	Accounts Payable	-
Inventory	-	Taxes Payable	-
Prepaid Expenses	-	Notes Payable (due within 12 months)	-
Other	-	Current Portion Long-term Debt	-
	<u>\$</u>		
Total Current Assets	<u>-</u>	Other current liabilities (specify)	-
			<u>\$</u>
		Total Current Liabilities	<u>-</u>
<u>Fixed Assets</u>	\$	<u>Long-term Liabilities</u>	\$
Machinery & Equipment	-	Bank Loans Payable (greater than 12 months)	-
Furniture & Fixtures	-	Less: Short-term Portion	-
Leasehold Improvements	-	Notes Payable to Stockholders	-
Real Estate / Buildings	-	Other long-term debt (specify)	-
Other	-		<u>\$</u>
	<u>\$</u>	Total Long-term Liabilities	<u>-</u>
Total Fixed Assets	<u>-</u>		
		Total Liabilities	<u>\$</u>
<u>Other Assets</u>	\$		<u>-</u>
Specify	-		
	<u>\$</u>	Owners' Equity (Net Worth)	<u>\$</u>
Total Other Assets	<u>-</u>		<u>-</u>
		Total Liabilities & Net Worth	<u>\$</u>
Total Assets	<u>\$</u>		<u>-</u>
	<u>-</u>		<u>-</u>

Liabilities & Net Worth Why is a SCORE Balance Sheet better than other ones?

Appendix D: Profit and Loss Projection Template (3 Years)

Enter your Company Name here

Enter starting year here

	2012	%	2013	%	2014	%
Sales	\$ -	100.00%	\$ -	100.00%	\$ -	100.00%
Cost/ Goods Sold (COGS)	-	-	-	-	-	-
Gross Profit	\$ -	-	\$ -	-	-	-
Operating Expenses						
Salary (Office & Overhead)	\$ -	-	\$ -	-	-	-
Payroll (taxes etc.)	-	-	-	-	-	-
Outside Services	-	-	-	-	-	-
Supplies (off and operation)	-	-	-	-	-	-
Repairs/ Maintenance	-	-	-	-	-	-
Advertising	-	-	-	-	-	-
Car, Delivery and Travel	-	-	-	-	-	-
Accounting and Legal	-	-	-	-	-	-
Rent & Related Costs	-	-	-	-	-	-
Telephone	-	-	-	-	-	-
Utilities	-	-	-	-	-	-
Insurance	-	-	-	-	-	-
Taxes (real estate etc.)	-	-	-	-	-	-
Interest	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-
Other expense (specify)	-	-	-	-	-	-
Other expense (specify)	-	-	-	-	-	-
Total Expenses	\$ -	-	\$ -	-	-	-
Net Profit Before Taxes	-		-		-	
Income Taxes	-		-		-	
Net Operating Income	-		-		-	

Appendix E: Original Venture Outline for Student Entrepreneurs

Venture Outline for Student Entrepreneurs (VOSE) (now titled Student Startup Outline as of 4/25/14)

Components of the business:

Organization- This section considers the mission statement and goal of the venture, additional team members, if desired, and time for organizational reviews of what progress is made. These components help to understand the business as a whole and the progress made thus far.

Organization:

1. Determine the leadership and skills required to foster the venture
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
2. Determine and recruit, if desired, potential partners to start/develop the venture based off of the previous section
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
3. Establish the mission statement and objectives of the venture
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____

Time Management- This section encourages you to think ahead about how to allot your time in order to effectively manage it.

Time Management

1. Update a Gantt Chart using the dates found on this worksheet
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
2. Populate own main deliverables and corresponding objectives and tasks determined by the venture leaders (Clarify slightly)
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____

Communication with Stakeholders- This section includes planning weekly meetings with stakeholders and the rest of your team and termly updates to stakeholders. Clear expectations are crucial to a healthy and productive working relationship.

Communication with Stakeholders

1. Determine purpose and expectations for meetings, if necessary, with stakeholder 1: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
2. Determine purpose and expectations for meetings, if necessary, with stakeholder 2: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
3. Determine purpose and expectations for meetings, if necessary, with stakeholder 3: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
4. Decide meeting frequency, time, date, and location of meetings with stakeholder 1: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
5. Decide meeting frequency, time, date, and location of meetings with stakeholder 2: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
6. Decide meeting frequency, time, date, and location of meetings with stakeholder 3: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
7. Determine other communication preferences of updates with stakeholder 1: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
8. Determine other communication preferences of updates with stakeholder 2: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
9. Determine other communication preferences of updates with stakeholder 3: _____
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
10. Check availability of rooms and reserve them according to the agreed upon terms
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
11. Discuss team meeting frequency, time, date, and location

- a. Person responsible: _____
- b. Date to be accomplished: _____
- c. Date accomplished: _____

Initial Funds- This section delves into whether or not you have obtained sufficient funds for your venture, including costs for operating. For example, how much money is required to make, store, and sell your product. Obtaining seed money is important as a lack of money or mismanagement of money are the main reasons why most businesses fail.

Initial Funds

1. Determine how much money your venture needs to operate (take into consideration labor, facilities, suppliers, etc.)
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
2. Determine potential sources of seed money
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
3. Develop a proposal to obtain potential investors
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
4. Contact potential investors
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____

Business Operations- This section explores the logistical aspects of the business, considering suppliers/supply chain, labor requirements, location or facility needs, or a way to effectively track finances. These components lead you to think of the logistics necessary to have your business become operational.

Business Operations

1. Determine what supplies/suppliers are necessary for the venture
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
2. Determine logistics of running the business on a daily basis
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
3. Determine what labor is required
 - a. Person responsible: _____
 - b. Date to be accomplished: _____

- c. Date accomplished: _____
- 4. Decide the location and facility for the venture
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
- 5. Create financial statements and tracking system to track money spent and gained
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____

Marketing and Sales- This section considers who your target market is and how to best reach them. The marketing and sales of your product is important as it helps you to share the value of your product with those who would be interested in buying it. Without constant revenue from sales, the business would no longer be able to operate.

Marketing and Sales

- 1. Conduct market research to determine target customers
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
- 2. Design advertisements based on customers
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
- 3. Print advertisements, if necessary, and them to appropriate avenues
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____
- 4. Determine sales plan for product/service
 - a. Person responsible: _____
 - b. Date to be accomplished: _____
 - c. Date accomplished: _____

Appendix F: WPI's Student Activities Event Planning Sheet



Name of Program Coordinator: _____
Name of Student Group: _____ **Email:** _____ **Contact Number:** _____
Account # _____
Name of Program: _____
Ticket Price: _____ **Date:** _____ **Time:** _____
Purpose of Event: _____

	Person Responsible	Date to be Accomplished	Date Accomplished
Agency			
First Contract			
Hold on Date			
Contract			
Reviewed/Signed by SAO			
Contract Sent			
Contract Returned			
Check			
Requested			
Pick-Up			
Hospitality			
Hotel Booked/Confirmation Number			
Meals			
LnL			
Work Order Filed			
Publicity			
Posters/Flyers			
Mailboxes			
RA Boxes			
Tech News			
Bulletin Boards			
Social Web			
WWPI			
Gimmicks			
Ordered/Confirmation Number			
Arrival/Pick-Up			
Events Office			
Tables (amount and size)			
AV Requests			
Book Venue			
Police			

Sample Programming Timeline

- Two to Three Months Prior To The Event:**
 1. Check availability of desired space and equipment.
 2. Establish budget and arrange the funding for the event.
 3. Review and develop an understanding of relevant policies or regulations with your advisor.
 4. Establish a publicity plan.
 5. Negotiate with performer for date, time, place and compensation (do not make any promises at this point).
 6. Contact SAO for procedures in contracting of the performer(s).

- Eight Weeks Prior to Event:**
 1. Arrange for advance ticket sales (if any).
 2. Begin implementing the publicity plan.
 3. Order (or develop) promotional and other printed material that will be needed.

- Six Weeks Prior to Event:**
 1. Revise budget as actual costs become known.
 2. Send any promotional mailings for event.

- Four Weeks Prior to Event:**
 1. Review and change publicity plan as needed.
 2. Revise budget as actual costs become known.
 3. Confirm room and equipment needs of performer with Events Office.
 4. Confirm performer's travel plans and setup needs.
 5. Check to insure that all College paperwork is being processed (room setup, equipment rentals, performer compensations, etc.).
 6. Send out press releases and public service announcements (if they are part of the publicity plan).

- Two Weeks Prior to Event:**
 1. Check advance ticket sales (if any).
 2. Confirm that the publicity plan is on time and within budget.
 3. Implement any last minute publicity that may be needed.
 4. "Walk through" the event and double check that everything has been arranged and requested.
 5. Confirm staffing needs.

- Week of the Event:**
 1. Publicity plan completed.
 2. Budget revision completed.
 3. Last minute publicity completed.
 4. Final arrangements and double checks on all aspects of the event completed.
 5. Make arrangements to meet the performer upon arrival.

- Day of the Event:**
 1. Check all arrangements early. If a change is needed you will need time to make or request the change.
 2. Be available for the unexpected.
 3. Meet and greet the performer upon arrival.

- Follow Up (Within One Week After Event):**
 1. Thank you letters to all involved groups and individuals.
 2. Clip and save any press coverage.
 3. Make final actual budget and pay all remaining bills.
 4. Write an evaluation of the event outlining your process, recommendations for the future and final budget.

Appendix H: Gompei's Goat Cheese Income Statement

Gompei's Goat Cheese Income Statement November 1, 2013 For the Year up to February 24, 2014

	Current Period
Sales Revenue	
Online Gompei's Goat Cheese Orders	2,610
Chartwells Gompei's Goat Cheese Log Orders	1,428
Chartwell's Catering Orders	686
Total Sales Revenue	4,724
Less: Cost of Goods Sold	
Online Gompei's Goat Cheese Orders	1,890
Chartwells Gompei's Goat Cheese Log Orders	1,075
Chartwell's Catering Orders	427
Total Cost of Sales	3,392
Gross Profit	1,332
Operating Expenses	
Sales and Marketing	
Advertising in Towers	25
Promotional Materials (Posters, handouts, surveys)	106
Founder's Day Promotional Event Supplies	44
Valentine's Day Chocolate Goat Cheese Supplies	53
Valentine's Day Baking Supplies	43
Total Sales and Marketing Expenses	271
General and Administrative	
Label Shipping and Printing	217
Other	0
Total General and Administrative Expenses	217
Total Operating Expenses	488
Income from Operations	844
Other Income (WPI Seed Capital)	0
Net Profit	844

Appendix I: Gompei's Goat Cheese Balance Sheet

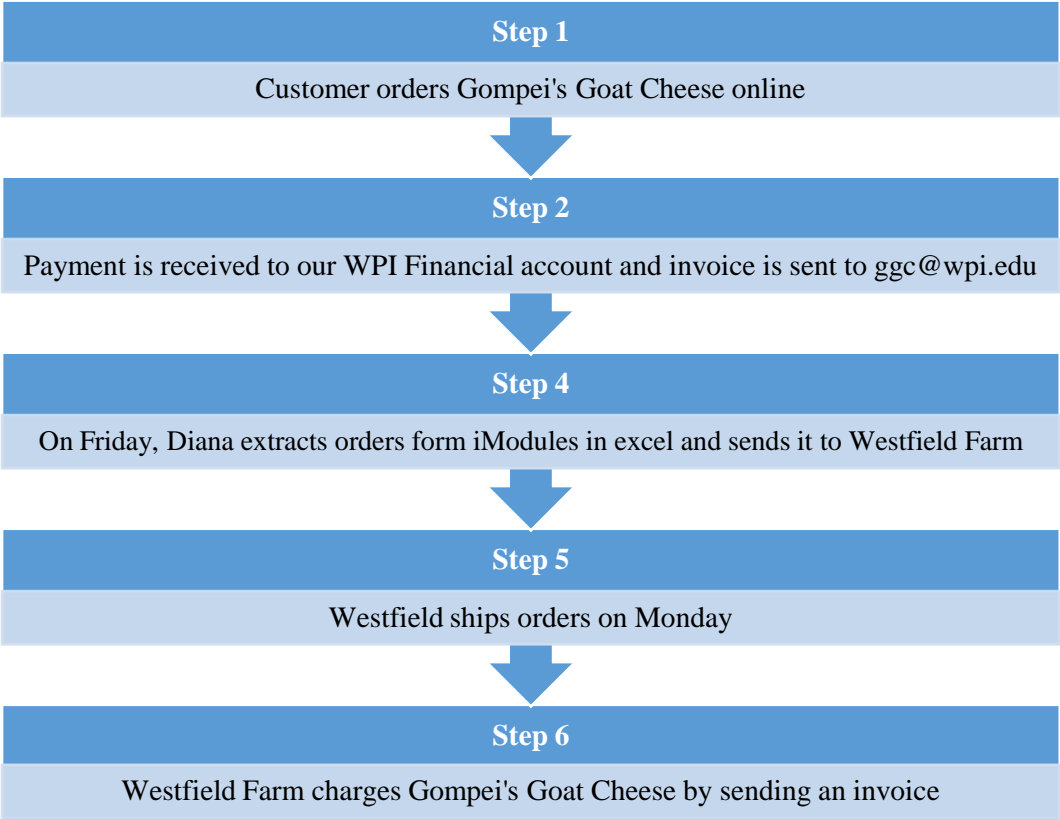
**Gompei's Goat Cheese
Balance Sheet
November 11, 2013 to February 24, 2014**

<i>Current Assets</i>		Assets	Liabilities	
	Cash	5,320	Accounts Payable	169
	Accounts Receivable	720		
			Owner's Equity	
			Retained Earnings	5,827
Total Assets		6,040	Total Liabilities and Owners Equity	6,040

Appendix J: Gompei's Goat Cheese Planned Expenses (March 2014 to May 2014)

<u>Item</u>	<u>Amount</u>
Small Refrigerator	\$600
April Promotional Event	\$100
Baccalaureate/Commencement	\$150
Table Banner	\$60
Label Printing	\$100
Posters, Table Tents etc.	\$100

Appendix K: Flow Chart Operations for Online Orders



Author: Rodrigo Calles
Date: March 2, 2014

Appendix L: Survey A

This survey is one of two surveys that have the first question in reverse order so as to prevent the order effect.



1. Please rate the following on a scale of 1 to 7 (1 = dislike a lot; 7 = like a lot):
a) Hickory-Smoked b) Herb-Garlic c) Chocolate d) Plain_____
2. On a scale of 1 to 7 (1 = I will not purchase Gompei's Goat Cheese; 7 = very likely) how likely are you to purchase Gompei's Goat Cheese? _____

Gompei Enterprises is a new student-led business, where a portion of our profits will go directly towards student scholarships.

3. Knowing this information, please let us know how likely are you to purchase Gompei's Goat Cheese on a scale of 1 to 7 (1 = I will not purchase Gompei's Goat Cheese; 7 = very likely) _____
4. What is the most that you would pay for three 8oz logs of Gompei's Goat Cheese (in any flavor combination that you would want)? Please circle one answer.
a) \$10 b) \$20 c) \$30 d) \$40 e) \$50
5. How would you prefer to purchase the goat cheese? Please circle all that apply:
a) Order online b) Mail Order c) At a local store d) On campus

Now, we will ask you about your familiarity with goat cheese and purchasing history.

6. About how often do you purchase goat cheese?
a) Weekly b) Once a month c) Every 2-3 months
d) Every 4-6 months e) I do not purchase goat cheese
7. If you do purchase goat cheese, how much do buy at once?
a) 4oz. b) 8 oz. c) 10oz. d) Other (please indicate amount):_____
8. If you do purchase goat cheese, how do you use it? _____

Finally, we will just ask a few simple questions about yourself.

9. What is your age?_____
10. Gender?
a) Male b) Female c) Transgender d) Prefer not to disclose
11. Ethnicity? (circle all that apply)
a) Caucasian b) Hispanic/Latino c) Native-American
d) African-American e) Asian/ Asian-American/ Pacific islander
f) Other:_____
12. Where do you currently live (City, State)? _____
13. Relationship to WPI:
a) Student b) Alumnus c) Faculty d) Staff
e) Family Member f) Visitor g) Other: _____

Appendix M: Survey B

This survey is one of two surveys that have the first question in reverse order so as to prevent the order effect.



Now that you have tried our samples of Gompei's Goat Cheese, please provide some feedback.

1. Please rate the following on a scale of 1 to 7 (1 = dislike a lot; 7 = like a lot):
a) Plain:_____ b) Chocolate:_____ c) Herb-Garlic:_____ d) Hickory Smoked:_____
2. On a scale of 1 to 7 (1 = I will not purchase Gompei's Goat Cheese; 7 = very likely) how likely are you to purchase Gompei's Goat Cheese? _____

Gompei Enterprises is a new student-led business, where a portion of our profits will go directly towards student scholarships.

3. Knowing this information, please let us know how likely are you to purchase Gompei's Goat Cheese on a scale of 1 to 7 (1 = I will not purchase Gompei's Goat Cheese; 7 = very likely) _____
4. What is the most that you would pay for three 8oz logs of Gompei's Goat Cheese (in any flavor combination that you would want)? Please circle one answer.
a) \$10 b) \$20 c) \$30 d) \$40 e) \$50
5. How would you prefer to purchase the goat cheese? Please circle all that apply:
a) Order online b) Mail Order c) At a local store d) On campus

Now, we will ask you about your familiarity with goat cheese and purchasing history.

6. About how often do you purchase goat cheese?
a) Weekly b) Once a month c) Every 2-3 months
d) Every 4-6 months e) I do not purchase goat cheese
7. If you do purchase goat cheese, how much do buy at once?
a) 4oz. b) 8 oz. c) 10oz. d) Other (please indicate amount):_____
8. If you do purchase goat cheese, how do you use it? _____

Finally, we will just ask a few simple questions about yourself.

9. What is your age?_____
10. Gender?
a) Male b) Female c) Transgender d) Prefer not to disclose
11. Ethnicity? (circle all that apply)
a) Caucasian b) Hispanic/Latino c) Native-American
d) African-American e) Asian/ Asian-American/ Pacific islander
f) Other:_____
12. Where do you currently live (City, State)? _____
13. Relationship to WPI:
a) Student b) Alumnus c) Faculty d) Staff
e) Family Member f) Visitor g) Other: _____

Appendix N: Handouts front (top) and Back (bottom)

Gompei's Goat Cheese

"Made by the smartests goats in the world"



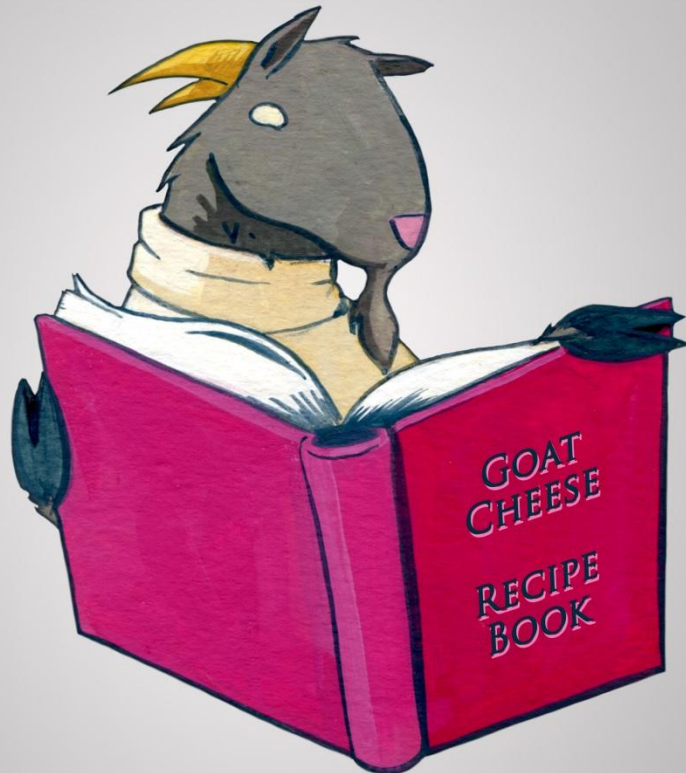
WPI

Fun Facts

- Gompei's Goat Cheese profits go to **WPI's scholarship fund!!**
- Our cheese contains **less** calories, **less** fat, & **less** cholesterol compared to cow cheese.
- Gompei's Goat Cheese will be available for purchase on **Founder's Day (Nov 11, 2013)**.
- Each order contains **three logs** of 8 oz for only **\$25**.
(plus \$5 for shipping and handling if ordered online).
- Gompei's Goat Cheese will be available in a **wide variety of flavors!!**
- Gompei's Goat Cheese is produced by Westfield Farms, located in nearby Hubbardston, MA.

Appendix O: Poster Advertisement

Gompei's Goat Cheese
at
HOMECOMING!!

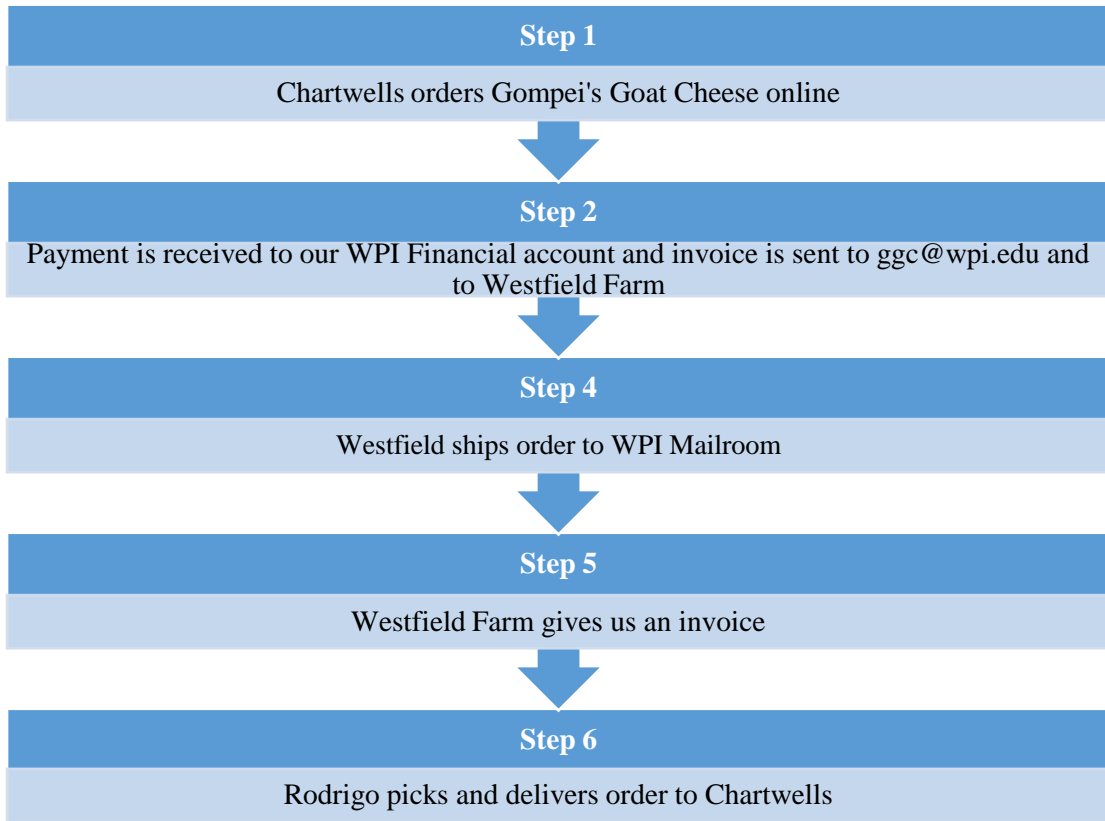


Free Samples!!

At the
Octowedge & Rec Center 3rd floor

"Made by the smartests goats in the world"

Appendix P: Flow Chart Operation for Chartwell Orders



Author: Rodrigo Calles

Date: March 2, 2014

Appendix Q: Participant and Confidentiality Agreement

Informed Consent Agreement for Participation in a Research Study

Investigator: Diana Nguyen

Contact Information: Dnguyen12@wpi.edu

Title of Research Study: Obstacles Facing Student Entrepreneurs in Academia

Sponsor: James Doyle

Introduction:

You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study:

The purpose of this study is to examine your experiences as a student entrepreneur.

Procedures to be followed:

You may also be asked to indicate some information about yourself. You will be asked a series of questions to promote a conversation with other student entrepreneurs to discuss how those obstacles may be overcome.

Time Required:

You will spend approximately 60 minutes in this study.

Risks to study participants:

There are no physical or psychological risks beyond those in everyday life.

Benefits to research participants and others:

You will receive pizza, a \$20 Gift Card, and a log of Gompei's Goat Cheese at the conclusion of this study. The study may help us understand what resources are needed to overcome obstacles when starting a business as a student.

Record keeping and confidentiality:

The information that you give will be handled confidentially. Your information will be assigned a code number. The list connecting your name to this number will be kept in a locked file on a computer. When the study is completed, and the data have been analyzed, this list will be destroyed. Your name will not be used in any report.

A focus group yields valuable information when all the participants are candid. For that reason we require that you maintain the confidentiality of the group and not share information learned from the other participants in this group. If you cannot keep this discussion in confidence, then we ask that you leave the focus group at this time. In addition, the researchers cannot prevent people from discussing their experience here. Therefore, you are cautioned against sharing detailed information about your business ventures if you think that someone in the group may misuse or disclose that information. Lastly, the researcher will not disclose the names of participants or details about your businesses, but will report difficulties encountered in

establishing businesses and your recommendations for making it easier for students to begin businesses.

Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or its designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

Compensation or treatment in the event of injury:
You do not give up any of your legal rights by signing this statement.

Voluntary participation:
Your participation in the study is completely voluntary.

Right to withdraw from the study:
You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study:
If you want to withdraw from the study, you may do so at any time by leaving the room. There is no penalty for withdrawing.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:
Diana Nguyen, Email: Dnguyen12@wpi.edu

In addition, include the contact information for the IRB Chair (Professor Kent Rissmiller, Tel. 508-831-5019, Email: kjr@wpi.edu) and the University Compliance Officer (Michael J. Curley, Tel. 508-831-6919, Email: mjcurley@wpi.edu).

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before agreeing. You also agree to keep to information you learn here to yourself. You are entitled to retain a copy of this consent agreement.

Name, signed

Date

Name, printed

Appendix R: Preliminary Focus Group Questions

Please note that the original name for our resource was Venture Outline for Student Entrepreneurs (VOSE). Currently, the document is called Student Startup Outline.

Focus Group:

READ TO PARTICIPANTS PRIOR TO COMPLETING THE INFORMED CONSENTS AND CONFIDENTIALITY WAIVER:

Thank you for coming today. My name is Diana Nguyen and I'll be running this focus group. You may take a seat anywhere at the table. Please take a moment to read and sign the informed consent. Let me know if you would like to have a copy of it.

READ TO PARTICIPANTS AFTER COLLECTING INFORMED CONSENTS AND CONFIDENTIALITY WAIVER:

I'm going to be reading from this script to make sure that everyone gets the same information.

The purpose of this study is to understand the experiences of student entrepreneurs.

Please take a moment to introduce yourselves and your grade.

What was the nature of your business that you are thinking of starting/started?

Who here has started a business while attending Worcester Polytechnic Institute (WPI)?

If there's someone/ people:

What have you done to start your business? (It can be joining an entrepreneurship club, taking courses, going to leadership luncheons etc.)

What has been successful about your business?

What are some failures of your business?

If there aren't people who have started:

If you haven't started your business, what are some of the reasons why?

Did a lack of seed funding play a role?

Was it partly a lack of knowledge of the legal aspects?

What kinds of resources do you think would help you in your launching your endeavor?

Have you heard about the various business and entrepreneurship classes available/ or the minors that you may obtain?

Have you heard of the recent course ETR 330X, *Assessing Entrepreneurial Opportunities*, it is meant to help students turn their project work, i.e. GPS, IQP or MQP into a business opportunity. Were you aware of the entrepreneurship club on campus?

Pass the VOSE worksheet out to each person.

VOSE:

The purpose of this worksheet is to help student entrepreneurs once they want to start their venture. It resembles a checklist that is aimed to get the user to start thinking about certain components necessary to start their business.

Please take a moment to read through the Venture Outline for Student Entrepreneurs, or VOSE for short.

Do you think this resource would be helpful? Why/Why not

Can you think of anything that is missing?

Is there anything in there that is not necessary?

Is there anything unclear, or not well explained?

Is it organized well?

What would make it a more useful, practical document?

If there is one person that dominates the conversation:

Thank you so much for your input, but please hold off on your comments until a new topic is brought up or until everyone else has spoken.

If there's one person who has not spoken enough:

Hi [insert name], I've noticed that you haven't said too much on this topic. What do you think will help?

If the focus group has gone completely off topic:

Hi everyone, I've noticed that we have gone a little off topic. Let's re-focus and discuss XX.

Appendix S: Transcript of Focus Group Session 1

Focus Group Session 1

March 25th 6-7PM

SL 313

A
B
C
D
E

Names were omitted and anytime a name is referenced, it was replaced with a letter that they were associated with. Also, business ventures were changed to a general industry to keep them confidential, per the informed consent form and best practices approval from the IRB. Please note that the original name for our resource was Venture Outline for Student Entrepreneurs (VOSE). Currently, the document is called Student Startup Outline.

Diana: Thank you for coming today. My name is Diana Nguyen and I'll be running this focus group. You may take a seat anywhere at the table. Please take a moment to read and sign the informed consent. Let me know if you would like to have a copy of it. And you can pass them towards me when you're done. Thank you. I'm going to be reading from this script to make sure that everyone gets the same information. The purpose of this study is to understand the experiences of student entrepreneurs. Please take a moment to introduce yourselves and your grade. If you want to begin D.

D: Uh D, senior, mechanical engineer, with a manufacturing minor

E: Um E, senior, mechanical engineer with a business minor

C: Management, junior, minor in history

B: MIS [management information systems], sophomore

A: A, Biomedical engineer, senior

Diana: Thank you. So because we're trying to look at student entrepreneurship, what are the kinds of businesses that you were thinking of starting? Again, just start anywhere or shout out.

B: I was thinking about starting an internet company, a tech startup

A: I was thinking about starting some biologics 3-D printing company

D: I was looking to start a rotational binding snowboard binding company

E: I was going to start a consulting firm to help students who come from small towns figure out what they want to do with themselves

C: I've always been interested in possibly starting a social enterprise or something to help people just in a general regard

Diana: Excellent. Um who here has started a business while attending Worcester Polytechnic Institute (WPI)? Any of you guys?

Everyone: No

Diana: Alright. So if you haven't started your business, what are some of the reasons why you haven't done so, if you have all of these ideas?

A: I would say lack of like tangible investors that can really give you the stepwise fashion of starting a business and having it come into fruition

E: Lack of time with balancing school and extracurriculars and adding that on top of it would be too difficult

D: I would say lack of money especially if you need to file any patents and such

B: I agree. Cost is a big issue with any startup

C: I'm most worried of safety net. What's the security if I failed, I just wanted to make sure that it doesn't harm me in the long run. Just knowing that someone is under there to catch me if I fall would be much more encouraging.

Diana: Absolutely, is there anything else that are big topics or big obstacles, or do you generally just agree.

Everyone: Generally agree.

Diana: So would you also agree that is it a part of a lack of legality information and how to proceed?

A: Yes.

C: Yes, I mean like being in the school of business I was only required to take one law class that like only briefly touched on stuff like patents and copyrights. We don't have any classes that are specifically for that here or that will train us on that stuff.

Diana: Have you heard of the various business or entrepreneurship classes available or the minors that you guys can obtain while attending WPI? What are you guys familiar with?

B: I'm familiar with entrepreneurship classes but not the minors and such and the degrees

C: I'm familiar with a lot of the entrepreneurship classes. I'm actually taking some and I'm familiar with the minor, but it's a little off putting because it has a lot of the classes that have a lot of prerequisites that I'll never be able to take. So it makes me worried to take them.

A: Yeah, I'd agree with C because it's a double edge sword because that requires a whole dedicate a whole curriculum of going through all of those courses. Other than learning it in some other shorter way that's more comprehensive.

Diana: Especially since you're not a management major, I'm sure that can be difficult to fit in your schedule. I mean is your major labor intensive? Do you have a lot of courses that you need to take?

A: Yeah and they do some covering of FDA requirements or to have some patent on a device or some kind of information like that. But the intellectual property is always changing laws regarding that, it's just always hard keep up with that as a student.

D: I actually didn't know that we offered classes like that

E: I knew we offered classes like that but like C said, the curriculum is so complicated and kind of rigid. And also I have a business minor and the minor was like more fluid if I wanted to go somewhere like a company as a safety net. And that applied more there by getting both.

Diana: Do you mean grad school in moving forward with the minor?

E: For like if I wanted to work in business for a while before starting my own company and getting experience that way as well. That the entrepreneurship minor may not have helped me as much.

Diana: Have you guys heard of the recent course ETR 330X? It's called *Assessing Entrepreneurial Opportunities*, it is meant to help students turn their project work, i.e. GPS, IQP or MQP into a business opportunity.

B: I have. I saw the email about it. It seemed really interesting, like something I would want to do.

C: I saw the same email but I don't know if I'd be necessarily interested in taking the course

Diana: Why is that?

C: Well, because a lot of the times with the IQP and MQP I'd be doing, I never took GPS because I didn't see much why at the time, but for IQP and MQP, the stuff that I'm doing can't really be transferred into a business. So there's no point in doing it if I can't get a benefit.

Diana: Why don't you necessarily see a benefit?

C: Well, for instance, my IQP was based off of helping the [unintelligible] society right here in Worcester, input the images and descriptions in the database. I have no propriety knowledge, no ownership of that. I was just making it work for them. And for my MQP, it's largely research based and exploring concepts at WPI. I can't take that into a business.

Diana: Thank you for sharing.

E: Yeah, I'd have to agree with that. And also, a lot of our MQPs that we work on are either sponsored by companies or the school has some legal right by my understanding to any of the intellectual property that we develop. So it's kind of off putting to them trying to make that into a business because they're going to try and take part of the profit from that.

Diana: Have you ever heard of the course, A or D?

D: I've actually never heard of it.

A: Same.

Diana: Okay, thank you for sharing. Were any of you actually aware of the entrepreneurship club on campus?

A: Yeah.

D: Yes.

C: Yup

B: Nope

E: No

C: I've heard of that one and the marketing club on campus.

Diana: Do you know much about the club?

C: No I just know the president, I think her name is [omitted]. They're like brand new so I don't know if I want to join if there isn't a lot of notoriety.

Diana: So thank you for that. So right now I'll be passing the worksheet that the MQP I'm a part of created. And the purpose of this worksheet is to help student entrepreneurs once they want to start their venture. It resembles a checklist that is aimed to get the user to start thinking about certain components necessary to start their business. So please take a moment to take a look through Venture Outline for Student Entrepreneurs, or VOSE for short.

[1-2 minutes were given to look through the sheet]

Diana: Do you have enough time to look through it overall? [nods] So do you think this type of resource would be helpful when planning your own ventures?

A: This kind of layout of paper? [Diana nods] yes I think so because it covers a lot of good basic areas. Especially the part where it talks about stakeholders. I think that its' really effective because it establishes that there are communication preferences and a lot of details of how to utilize them the best that you can.

Diana: Because you don't necessarily have a lot of business background, do you think that this still helps you?

A: I think that even if I did have business background that it would still help me because it's laid out in such a way that you look at finances, general operations, and organization and time management, like really good broad areas to focus on.

Diana: Thank you. So how else do you guys feel about it?

D: I think by looking at this, it's a great start. Even if you don't have a business background at all, at least for me I don't, look at this kind of gives you things to think about and avenues that you have to pursue if you wanted to complete this.

E: I definitely agree because it makes sure you don't overlook any minor details in getting your start up ready to go and it kind of takes you through making sure you do what you need to do first and go through the list to make sure you didn't skip any steps. It's kind of like having a minimal business background, I would not think of everything here, time management and stuff to go through before I jump into finding investors and things.

B: It definitely organizes it very well and it makes it very very basic so every single target and plan can be outline pretty detailed

C: Yeah I like it especially the checklist format because it's so easy to do one of these things and alright sorry we can't move on until that's done so it's also a great way to get you back on track because you know if a date accomplished didn't get reached, but you need to move on, time to think about what's going on here, so it's good.

Diana: Can you think of anything that's missing, within the worksheet?

C: I just don't know if I see a section that necessarily deals with ethics. And I think that's important, especially with today's business world, I mean after the early 2000's everything's about ethics these days so I think it would just be a good reminder to have it on there to make sure that everything you're doing is kosher. Otherwise, you might be in big trouble

Diana: Thank you

A: I think to go along with that kind of the legality side of it in terms of like intellectual property and making sure that whatever it is you're developing or the patent you're going into is yours and you can solidify it as your own intellectual property.

Diana: Would you guys pretty much agree with that

[nods from the group]

B: Yeah, I think that its' good for the basic concept of trying to create and just look at the business plan and not necessarily the details in it

Diana: Thank you

B: It leaves room to expand it very well though.

Diana: Do you think when you're actually kind of utilizing this kind of worksheet. Do you kind of foresee getting lost. So I know you guys talked about legality side. Do you kind of see yourself saying I don't understand what this means

C: So one thing I noticed right away was Gantt chart, so with certain professors here, you may not have any idea what a Gantt chart is. So like maybe there could be a list of definitions like here's a list of things on this worksheet, here's what they mean and that kind of thing

Diana: You mean kind of like an example

C: Yeah, exactly

A: Yeah, I think that if there were to be something about legality, there would need to be some kind of like outside additional source. Like go visit this for some kind of information or refer to this person

Diana: Thank you. So you said that this sheet is organized pretty well, is there any big topic, so we kind of discussed organization, time management, marketing and sales, communication with stakeholders, initial funds, and business operations, but do you think there's anything missing off of the top of your head that you think a business would need?

E: Maybe if you talk a little more about stakeholders and investors and how to find who all of your stakeholders are and where to find investors a little but, companies, whether you should go into the field that you want to invest in or if you want to look for guys who work in venture capital

Diana: What do you think would make it more of a useful, practical document? So the goal of this project is to really create a resource that people would want to use. Does it look okay, does it need more design and things along those lines.

C: The lines sometimes get a little bit on my eyes. Like when I look down and see this page, like my eyes get a little bit like, maybe, I don't know if there's something you can do with that but just aesthetically, like functionally I think it does what you guys wanted to do. But aesthetically, it could use work. Maybe if there's an online version, if you didn't want to use pen and paper

A: Maybe a grid for this big section for stakeholders could be a little better

Diana: Thank you. So when moving forward with your endeavors and ventures or businesses you want to start, do you really think you could have started it at WPI?

A: in the sense of like..

Diana: Like while you're attending WPI

A: I think it would be really difficult to do, barring that there was some sort of class or curriculum that facilitated for you, instead of you taking a full course load. When you have this great idea and you want to go further with it but the professors are professors of practice and they need to be doing their work and you're a student trying to get your degree. I think that without some sort of help with the curriculum that it would be difficult to do that

B: I think that aside from the cost issue there are definitely enough resources on campus that you can find either students interested or teachers at least for the company that I would try and start. There are definitely other opportunities there and resources to use

E: I mean there might not be opportunities to actually start your company, but you can actually plan a lot of the groundwork and do a lot of networking to figure out if you want to start with a bunch of college students or find out a couple of professors who are also be interested once you graduate and actually have time to kind of invest and working on this startup

D: I know I wouldn't personally have time to start a company while at school and kind of my group and I for MQP had talked about potentially starting something up. But at the same time we're all starting at full time jobs and kind of looked at it in the sense that it's not a task that we want to pick up but we have a grade and we're glad of that. We don't want to do all of the work for it

Diana: Did you guys know that there's going to be a business incubator planned on campus. [C nods] Do you want to tell us a little more about it C?

C: Yeah I thought that was exciting. I was actually asked by the alumni office to shoot a video for the If campaign and I thought that was kind of so cool. Because now it gives you the opportunity to try it out virtually with no real cost and see if it could work out in the real place. I thought that was pretty cool and I'm sad that it's going to happen after I graduate. I mean what are you going to do right?

Diana: Do you think that would have helped you in starting a business. If there was that kind of resource on campus that was already existing.

C: That definitely would have helped. I mean like if it was only marginally, it definitely would have encouraged students more because then if you didn't want to actually start one you can now see if it's possible. Because no one can do something unless they know it's possible to do it so if

people are like the failure of a new business is 80% then it's not looking good to start your own business. So seeing the success is nice.

D: Yeah I agree. I know that was one of our biggest issues was we weren't sure who would be willing to buy into it or if anybody would. And none of us were in the financial backing to be able to front that money and if it didn't work out, to take that hit. So if there was a way to know whether or not your business or product would take off, I feel as though more students would be apt to take a shot.

Diana: Are you guys aware of the resources available on campus? Have you ever heard of the venture forum, and that's an opportunity to start a business. And there's also mass challenge.

B: I've heard of that [mass challenge]. I just went to a presentation the other day actually and it's like a fast track way to compete to get your startup to be legitimate. And you have a whole mentor program which could be very useful to people who are very new to the entrepreneurial game.

Diana: So maybe if we added a list of resources attached to the worksheet and say if you need legal advice, this is where you go to. If you needed strategy advice, this is who you should go to, or these are the things you should be looking for. Do you think that would be beneficial?

B: A resource sheet would be very very helpful

A: Yeah, maybe even like a contact sheet of professors that have gone into that area in the past or are looking for something like is that would be helpful as well

Diana: Are you familiar of other entrepreneurs on campus, or do you know only one or two people

Everyone: only very few people

E: I feel like the people that are entrepreneurs are already doing all of the other things that they do. They don't have time to like talk about how they want to be entrepreneurs

Diana: So it seems like time is a very huge obstacle.

Everyone agrees

Diana: Well that is all the questions that I had. Are there any other general ideas that you guys want to make as a last kind of thing that would help you in moving forward with your endeavor? Or anything that your curious about that you want wish that was on campus to help you?

A: I think that if younger kids were exposed to things like venture forum or mass challenge really early in their career at WPI that it would at least help them like realize the potential of their ideas because when you come in as a freshman you take so many base level courses and

you really want to get into your major. And that's the time that you have a lot of innovative ideas but not a lot of base to formulate a good plan. So maybe if they got exposure to that earlier they could really put some legs on their ideas.

Diana: Thank you.

E: Yeah I definitely agree with that because I didn't know about either of those until I was a junior. And at that point I was already so busy with other things that it hadn't, like I had just stopped thinking about doing it. So definitely if you would expose freshmen to them to get them thinking about it more. Like they talk about entrepreneurship spirit when they come here but if they capitalize that early on in their college careers

B: Yeah it took me until halfway through sophomore year to realize all the resources we had. So they should definitely stress it more as a freshman. I can definitely agree with that.

C: Yeah I definitely agree with all these exposures that they should definitely be exposed to this. It'd be nice because I definitely agree with A because with the venture forums, it can kind of be intimidating and stuff because you're going against real startups and prototypes and products that are actually selling already. It's be nice like again, if they had a safety thing or a protective environment just for WPI students, no need for like prototypes no need for all these things but still like to get these ideas out there just so that it's like a stepping stone into venture forum. And how venture forum is like a stepping stone into mass challenge.

D: I think one of the benefits to having it projected to the younger students when they first get here is that and I know that IQP and MQP are supposed to be separate projects, but if the student came in with the general knowledge that you know hey. I want to pursue creating this project, they could almost gear their learning or their project to both IQP and MQP so that at the end of graduation they almost have a base work for what they want to start as a company to work with and they can gear their classes towards that

E: Definitely along those lines. I applied to a different school and instead of having a senior level project, they work on a project all four years so kind of gives. So if you did your GPS in a similar area, your arts and humanities can be tailored to that area, as long as your IQP and MQP. So that you kind work towards that and it may end being more meaningful to you than just a one year project because you have all of this knowledge put into it.

Diana: Thank you for that. If there are no other comments, this will be the conclusion of the study [passes out compensation]

Appendix T: Transcript of Focus Group Session 2

Focus Group Session 2

March 26th 7-8PM

SL 311

F

G

H

I

J

K

Names were omitted and anytime a name is referenced, it was replaced with a letter that they were associated with. Also, business ventures were changed to a general industry to keep them confidential, per the informed consent form and best practices approval from the IRB. Please note that the original name for our resource was Venture Outline for Student Entrepreneurs (VOSE). Currently, the document is called Student Startup Outline.

Diana: Thank you for coming today. My name is Diana Nguyen and I'll be running this focus group. You may take a seat anywhere at the table. Please take a moment to read and sign the informed consent. Let me know if you would like to have a copy of it.

I: I, Mechanical Engineer and Biomedical Engineer, senior

J: J, Mechanical Engineer, Business and Electrical engineering minor senior

K: K, Civil Engineer, senior

H: H Management Engineer, minor in economics, senior

G: G. Chemical Engineer, senior

F: F, Robotics Engineer and Entrepreneurship minor, junior

Diana: I'm going to be reading from this script to make sure that everyone gets the same information. The purpose of this study is to understand the experiences of student entrepreneurs. Since we've already introduced ourselves, I just want to begin with the idea of you guys starting business, what was the nature of that business? And feel free to speak out whenever you would like.

G: The nature of the business?

Diana: Yes, so what kind of company was it?

G: I've had a few ideas, the first one was food, pretty simple, like a [convenient food supplier]. And another was clothing lines. I don't know if you want me to elaborate more?

Diana: Nope that's fine.

G: Okay.

J: Mine was based off of social media, some of them involves HR staffing and recruiting firms. Some of them involve logistics and manufacturing lines. It was mostly for increasing collaboration between small and medium sized companies to be able to compete with bigger rivals.

Diana: Thank you. Has anyone else thought about the venture?

H: Mines is mobile virtual network operator. So MVNO, communications

F: I've looked at the possibility of starting tea franchises, something similar to Starbucks but focusing on tea. I've also looked at technological specifics, something in terms of robotics for consumer robotics. But that's still a work in progress

K: Mine was actually on a much bigger scale, kick starting my career in starting a small construction firm focusing on residential work

I: I've thought about some biotechnology company, based off of projects and stuff like that

Diana: Thank you. Who here has actually started a company while attending WPI?

H: I'm in the process right now.

Diana: That's awesome. Was it the idea that you were discussing?

H: Yeah.

I: You're making us all look bad [jokingly]

Diana: I think this will make a great dynamic, so thank you for sharing. What have you really done to start your business? If we can start with you.

H: Yeah, so there's a lot of paperwork that has to get done. So we are incorporated in Delaware and then we just opened a bank account and we're about to make the first purchase from our supplier. But we couldn't do it today because they stop wire transfers at 3 'clock. So we'll have to go back tomorrow.

[laughs from around the room]

Diana: Have you used any resources on campus to help you start your business?

H: No I haven't

Diana: Why not?

H: Just didn't really know what they are, what's available.

Diana: Okay, what has been successful about your business so far? Or it is still in the works?

H: We have a customer already, so that's good.

Diana: That's awesome, how did you get that customer?

H: Through a prior project that we had worked on, and they had sponsored it. And so they agreed to buy x amounts of units from us.

Diana: Have you experienced any failures or huge obstacles while starting your business?

H: no, not yet [laughs from the group] it's only been a month and a half.

Diana: For those of you who have not started a business, what are some of the reasons why? What obstacles were in your way?

J: My biggest obstacles would be finding the right technical people, because my ideas were heavily based off of web based applications. And I've talked to so many CS majors here, none of them had adequate backgrounds. Most of them are focused on software engineering and [unintelligible] developments. We don't have much CSS and related developers. That was the biggest problems. I conversed with a couple of angel investors and they asked me to have just a beta website and afterwards let us look into that. If you like it then we'll invest \$200,000. I kind of convinced some of them, but I couldn't find the right technical people, I couldn't build the website so that's the problem.

Diana: Thank you. What are some of the other obstacles?

G: Probably money allocation, probably getting money is the hardest part. Because my ideas are pretty straight forward like I want to start a [food service provider] around Worcester which I think would make a lot of money on the weekends around here. Like if I parked on Institute and Boynton and went up and down on a Thursday, Friday, Saturday night. But that's a straight forward thing, it's not like finding anyone to run it. That's not the hard part. It's not super technical idea, similar to the clothing line. That's more of like being able to pitch and seeing if people are interested and making designs and if I could send out a survey, which would be the best thing to do. But I don't think the undergrad would really like that, unless they can get their hands on it a little bit.

F: For me, I'm an international student, it's a lot of legal stuff so that it doesn't affect my legal status as a student. I don't want to put me going to college in jeopardy for business. So I'd rather wait and see how things go and plus, it's just getting that information about how to go about it so that I don't mess with my VISA status and everything's legal and stuff. Just getting that information is really tedious and I haven't had the time to research it enough

K: I've been hit with a few different obstacles, for starters, finances, that would probably be number one. Also licensing and scheduling would be a problem for mine as well. In order to start the firm it would require me to obtain a license in construction to be able to pull permits. A lot of the work that I was gearing the company towards would be small renovations, patchwork for residential housing. The reason you would need licensing for that is that in case you run into any structural issues and you would also need to pull permits for certain projects. And it would be tough to study and take the proper licensing exams while taking a full academic load. Also, it would coincide with what I was doing but all in all, financing and licensing would be the two biggest issues.

Diana: Thank you.

I: and I think my biggest thing is that the technology doesn't exist yet. [laughs] A lot of it comes from theoretical classes where you have seven weeks to come up with a product and pretend it's really there. And so, it's one of those things, where it's what you said, with an academic course load, you don't have the time to actually develop the resources to make it happen. So I think that's the biggest thing for me, the technological barrier and the time.

Diana: Thank you. Would you also say that it's a lack of knowledge of how to actually start a business? If not, why.

G: I would say that is true because these are just ideas that are floating in my head that I think are good ideas. It doesn't mean that they are and I also don't know who to talk to about it. I guess I could go to the Business school down the road at Gateway, but I mean they probably don't have time. They're busy, I mean I don't think they're really open to just hearing random students to talk about their fantasy idea of their get rich quick scheme.

K: For mine, I don't think there'd be so much of a problem. I think that it'd be actually simple to get it going, small advertisement, word of mouth, so I don't think it'd be tough getting it going. I think it'd be tough to finance the project.

Diana: Thank you. H, with your business, how did you get it started?

H: So it's with our money we had over the years of working and what not. And we did all of the development work ourselves. We didn't have to hire anyone to do it. We hired some people online for design on the product itself, but basically, we did everything ourselves.

Diana: And you managed that with a full course load and everything like that?

H: Yeah

Diana: Did you find yourself limited with time at all, were you hard pressed?

H: Yeah I was definitely limited with time and you find yourself thinking that I'd rather work on this than my school work. So much more. But you have to get it done.

Diana: Thank you for sharing. What kinds of resources do you think would help you in your launching your endeavor? What can the school do for you?

F: Well I've heard a lot about this mythical incubator program that I'd love to hear more about. In terms of something more concrete. Like how I could get in touch with people who work with that. And just some more details and the costs associated with that. Another thing is that some kind of legal advice, lawyers are expensive and going to them for things like this can get kind of difficult. All of the lawyers that I do know who are family, who would give me free legal advice they aren't exactly in the field of business. They're more in the field of like other things so not exactly their field so. Something where I can get legal advice for relatively cheap would be super helpful

K: I would say connections and putting you in touch with the right people for the right assignments. I know for construction, it's all about who you know and how you know them and the relationships you have with them. And it'll make or break your business.

H: I would say so like in business classes and finance classes, they teach you a lot about running a business, but not, I haven't really learned anything about starting a business. And so that is something that I think is important, with us and regulations, I don't remember learning anything about regulations but it's really important. And we didn't even really think about it until our supplier had it in the contract that we had to be compliant with regulations. And we were like oh, we should really do that.

Diana: Thank you. Especially, I, with you not being a business major by any means, what do you think would help you start your business or your ideas running. I know you said that you want technological

I: I think the biggest thing that I can think of is a lot of the time when alumni come back from the business world or come back to speak on their experiences it's like 40 years down the line they are the CEO of a company. But there are a decent number of companies that start out of an MQP or something like that and I think, at least from my perspective, it'd be interesting to have those people come back maybe 2, 3,4 years out from starting their business, which obviously they have their own time constraints and stuff like that. But I know I would be interested in how you can take an MQP and turn it into a company and what that process is like.

Diana: So it's funny that you say that because there's actually a course, ETR 330X, *Assessing Entrepreneurial Opportunities*, it is meant to help students turn their project work, i.e. GPS, IQP or MQP into a business opportunity. Were you guys aware of that opportunity?

[both no's and yes]

J: Yes, I think it arrives next A term

Diana: How did you hear about it?

J: Dean Rice told me, [laughs].

F: I got an email about it and it was announced in my managing new ventures class and my friend [name omitted]. Yeah, that's how I heard about it.

Diana: Thank you. Usually the course is tailored to juniors but because it's experimental I'm sorry that you'll be missing that. Were any of you aware of the entrepreneurship club on campus?

[yes, somewhat]

Diana: F, I know that you're in the club, can you please tell us a little but more of what you do in the club.

F: I'm actually a really passive member of the club. [laughs from the group] Unfortunately, but I do know that there's like all these networking events, we sell tickets to those, we hold some networking events, today we held one where Dean Rice spoke to the entrepreneurship club. SO it's mostly just that stuff. I don't know much else that they do. It's not so much about entrepreneurship as it is about networking and the focus is on entrepreneurship and networking but it's not about how you start your own businesses, it's more about how you get contacts, just hearing these experiences from other people about their business

J: Let me tell you something about this club. [omitted for potential identifying reasons] We provide different opportunities for members. We don't have much active meetings but we kind of search what kind of events are going on in Boston, in the Worcester area and we kind of inform our members about different networking opportunities. There are different workshops in different fields, we usually send an email about clean tech, based on renewable energies and how to establish the business in that field. It's not given by WPI or any closed organizations but they are coming to Worcester, and we kind of get all of these emails and information we kind of try to tell people. Secondly, there are case competitions in different universities and also by different consulting firms. We were planning to build teams to represent WPI to compete and work on different case studies and possible get some awards. Other than that, like F said, it's mostly networking and sometimes we have some members say I have this idea, do you know any contacts and you kind of introduce them to professors or Alumni. If it is CS or similar fields, we point them to [person & this portion of the conversation omitted for confidentiality reasons]. We know all these people and we introduce them if anyone needs help.

Diana: G, I know you said earlier that you don't feel comfortable kind of going to the School of Business and kind of reaching out to faculty, but that's actually something that has been done before. And they usually willing to listen to any ideas. But that's interesting that you would say that, especially since you're not a business major, and you don't know that.

G: Being a chem eng, I'm in Goddard Lab, just doing all this nonsense over there. I just think of these cool ideas that people can get chump change off of and stuff like that. I guess I'm not comfortable going to talk to them because, not to sound like a crazy person or anything, I just know this school is really good at allocating people's ideas and then just taking it. And I'm afraid of that because it's a simple idea and I doubt I'd be the first [convenient food provider] ever made or the first t-shirt that's ever been sold but I just don't want WPI to put their stamp on it to get help from them. You know what I mean? I guess that's where I'm uncomfortable with it.

Diana: So kind of moving forward with that if you did have this incubator and WPI did take ownership that would make you feel very uncomfortable?

G: Yeah

Diana: Would you guys agree or disagree with that?

K: Agree

F: I would absolutely agree with that. I wouldn't mind if they said that they sponsored it, or helped out with it but I would want to retain ownership of my own company. That's not something I'm willing to give up.

G: Yeah

J: I would partially agree with that. I wouldn't agree to WPI taking 100% of the ownership but I would negotiate and give some percentage. For example, I have filed a [omitted] patent for technology that I have developed and WPI covered all the [unintelligible] fees which cost over \$1000 and I don't have that money. Plus WPI marketing team developed different flyers, they are trying to send all of my technologies information to companies, they've pitched to companies for me, and I don't have to do anything. They just find the companies and I negotiate [omitted] percent of the rights, I don't do anything but deal with the product and they do the rest. And whatever money they are getting, I am getting [omitted] percentage. I'm not saying use that percentage, but there are also pros and cons, you shouldn't just say I'm totally disagree with that. [laughs] but they can kind of increase the growth rate

Diana: H, is that kind of why you started your own business on the side?

H: Yeah, pretty much

Diana: Thank you for sharing. So right now I'll be passing out a worksheet that my MQP designed. The purpose of this worksheet is to help student entrepreneurs once they want to start their venture. It resembles a checklist that is aimed to get the user to start thinking about certain components necessary to start their business. Feel free to write up anything that you guys think

J: So do you want us to write a sentence

Diana: Oh you don't have to fill it out, I just want you to look through it, look at the concept,

G: Yeah I wasn't sure what you wanted me to write here

[laughs]

Diana: Yeah so just think about what you like and don't like and I'll ask specific questions in a few minutes.

F: The circled them...

Diana: That was a mistake. [time passes] Do you think this resource would be helpful when launching or while you're trying to start your venture? And be completely honest.

I: I would say looking at this, I don't necessarily see what I would gain out of this. I tend to be a fairly organized person and some of this stuff, like with having no business experience at all, stuff that seems like you would pretty much logically do. For example, the third thing you have is establish the mission statement and objectives of the venture, and in my mind, that's something that should be done before you're even really getting into doing any of this stuff. So I sort see the general idea of the outline, but in the way I see it, this is for someone who doesn't have organizational skills, in which case this can be very helpful but for me personally, but sort of looking at this in my situation right now, a lot of this is what I would have done by myself already, I think. So that's probably where I stand on it.

Diana: Thank you.

G: Are we just going down the line or can I talk

Diana: Feel free to speak whenever

G: I kind of agree but I'm also not a very organized person so that I would say this would help. But I mean again, a lot of this stuff you should have it under lock before even bringing this idea to pitch it to someone. But I mean, it is good as a checklist to make sure that you are doing what you could be doing and it kind of makes you think who you should be bringing into this because like tracking marketing and sales, I'm not exactly going to be the best person for that, I mean it is math, but I don't want to be doing that. So maybe I could find a buddy to do that. It keeps you thinking of how to expand is what I'm trying to say.

K: I think it's a good starting kit for anyone in the sense that you get an idea in your head, and you're not sure where you want to run with it. And this kind of forces you to sit down and think about it. I think this would be a good aid right out of the gate but again, like those guys have said, a lot of this stuff you should have a firm grasp on before you approach anyone with your idea.

F: I mean I'm a fan of checklists because otherwise, I might forget. Like a lot of this stuff, like you mentioned, I would know to get these things done. But just in the moment of things, it might be better to have them written down somewhere. With that said, I do find that this checklist might need to be longer and more detailed for it to be more effective.

Diana: Can you please elaborate on that.

F: Sure. For one thing, yeah, establish mission statement, objectives of venture, stuff like that, it's important, but also you know figure out how you want to start the venture and what kind of avenues you want to take. Do you want to boot strap, do you not want to boot strap, there's so many options. This gives you a very high level view, where if I were to actually start a business, I would want a checklist that is more detailed and more tailored toward my approach rather than such a high level picture type of thing. Because the high level big picture type of thing is

something you want to keep in your head at all times anyways. So just more details. And I know I'm kind of big on this, but I didn't really see anything about legal regulations in which I feel is a very big part of starting a venture which is a part that is always overlooked. I notice it because that's the only thing that is really stopping me from starting my business right now.

Diana: Thank you.

H: I think that it is detailed enough. I think that it is a great starting point, for like a checklist for if you're doing your initial brainstorming and like what about funds and how much do we need. I think that's it's something good to go off of but you should build up going off of this checklist.

Diana: Thank you. Other than the legality thing, what do you think is missing? Whether it be other sections or more details

G: Licensing avenues and things like that because whatever you're going to be doing, you're going to have to get a certificate at some point for something Be it, where you're getting your materials, and proof of purchase and things like that. I guess it's kind of the legality stuff but it's more of licenses and certificates, like professions and who to go to for professionals, and things like that.

Diana: Thank you

I: I think another thing is I don't think it's necessarily clear where in the process this would fit. I know for me, looking at this, asking me to name dates and people and if this is the first thing I see in a business, I wouldn't know who to talk to, what is a reasonable timeline, and for some of these things, so I think this kind of fits halfway between like the very start and well into it. This is sort of like a transitioning thing. So if maybe if there's a timeline of where in the process this fits could be communicated, I think that would be helpful.

Diana: Thank you. Anyone else? No. Do you see anything that is unnecessary?

H: I think the communication piece is rather extensive, and it like repeats things over and over again.

I: I think in accordance with that, 10 under communication with stakeholders, check the availability of the rooms and reserve is kind of implied when you're planning a meeting you would do that. You would schedule that meeting

G: Yeah I would agree.

I: And maybe a little bit of the time management, it kind of makes sense but I mean, update Gantt chart with these dates seems kind of like the next logical step to put it on a calendar

Diana: Thank you. Do you think it is organized well as it stands, or are there any other changes, whether aesthetically

G: I mean it's pretty good in the checklist form. I guess other than going into more detail, I think it's pretty straightforward and simple to use. Maybe instead of where it has communication with stakeholders, 1, 2, 3 and 1, 2, 3, you can have just a column for each stakeholder or expectations, maybe you need to talk to this person or this person, just to shorten this up a bit. That's about it

F: I mean, I would probably end up checking the numbers off, when I'm done this, so check off boxes that might help too. Not really necessary, not really a big deal, but that's what I would do anyways, if I were going through this.

Diana: So I'm getting a lot of mixed feedback about whether or not you would use this, and I guess in your own personal opinions, do you think that this is a practical document?

G: If I was really serious about it, and like I was like, well I don't really know what I'm doing so, this is definitely a good jump off. Maybe if there was a little more, or like an info packet, that you could put with it or something, on like where to go on campus or who I could talk to, maybe like a little intro section. That would make it much better, if there was an intro and you can go here, here, and here, and talk to this person, this person, and this person, just to get me started. I would take this and grab it from a box and go

Diana: Thank you.

J: I wouldn't use this because for me, it's kind of outdated. I would probably use something more interactive where I could customize it based off of my company's needs. Like similar things, I think you could create something like that in XML. In marketing sales you can create a new product there and different sections you can customize it and you can track them electronically. This paper style is not really what I'm interested in, so I would be more interested in like website or some sort of interactive and customizable paper or something

F: I would probably end up using this once or twice when I'm actually organizing something. But to actually track my progress, through any of these steps, I would end up creating my own little spreadsheet or use my own little tool. I like having a board with post it notes and I'd just use that instead of having a checklist.

K: I would have to say, if I'm put in touch with someone within the industry or someone that has done something similar, I would scrap this immediately and contact that person and find out how they got going. Sit down with them and have a chat and really get a baseline to focus on in that specific field and take it from someone who has succeeded and went down that track.

H: I'd probably just use it initially, just to get the ideas down. Especially like you said, it's not electronic which would be great because stuff changes every day with your train of thought and how you wanted to advertise yesterday may not be the way you want to today. So it would be great to go back and actually make changes.

Diana: Thank you.

I: I mean, we've talked about this in IQP because we had a similar issue. Which is, for the most part, the easier it is to use, but the more it does is better. I see this really easily transferring this to an online form and if you put in a person and date, it's really easy to put that on a calendar automatically. That makes my life easier and that would encourage me to use it again and again. As I have said, because if I have to keep coming back to a piece of paper and erasing stuff, it'll very quickly become more of a nuisance

Diana: Kind of as a wrap up question, do you guys think WPI is a good place to start a business? In the college environment with students around?

[laughs]

I: I would say with college environment with students around, yes, but WPI, probably not. I know myself, I'm a double major and so I am interested in taking entrepreneurship classes and there isn't the time. I know you can't really make that a part of the curriculum but I would like to see a bigger focus because we all do projects and the teachers always say, yeah, turn that into a business but then, when do you have the time for that when two weeks later, you're in seven new classes with 7 new projects or whatever. So I think WPI itself puts enough stress on us with everything, I'm so impressed that you managed to do this [H-start a business] on top of that. So that's awesome. But I think for the average student, that's asking a little too much with course load, extracurriculars, and business on top of it.

F: As a robotics major, you're required to take one entrepreneurship class to graduate, so that's how I took entrepreneurship and I loved it, so now I minor in it. And I think the entrepreneurship course and the business school also has amazing courses but it's also disconnected from the undergraduate life. I mean who decided to put the School of Business in Gateway, who goes to Gateway, [laughs] unless you're a bio but I mean, it seems a little inaccessible and you don't interact with them they're not as.. just going there and speaking to a professor isn't as easy as if I would just go to somebody in my own major. So without that interaction, it's hard to see the potential in my own ideas. And I've heard how in alumni gym, they'll have an incubator programs in there, I think that may help a lot. Just if professors are just more reachable, if it was easier to go talk to them about it. But I don't see WPI as the best place to start a business right now.

J: I mean, like, when we talk about is WPI suitable for starting a business, comparing it to different school like MIT or similar top tier, obviously not, but they are in first place and we're still in the middle. Giving the small alumni and small WPI is hard because WPI doesn't have as much money. But surprisingly, we have strong alumni profile, not network. Because WPI has a bad job of connecting with them. There are so many, at least a couple- more than ten, CEOs who sold their company for over a billion dollars, and WPI never contacted them for over 40 years. There's so many stories like that. WPI has a strong alumni profile but we don't have a strong alumni network. WPI doesn't have to have much money, but at this stage, they should provide

some type of relation, we need that, we need to start a venture and we need support from people. But when we look back at 10 years, the school of business grew a lot, and it's much more stronger right now, so I am kind of optimistic for the future.

Diana: Thank you.

H: I would say, it depends on what kind of business you are looking to start, so if you're looking to start something really technical, I think it would be a good place because you would find a lot of resources and a lot of people that could help you. But if you want to look for construction or a [food provider], probably not because I don't think WPI has the resources to help you with that. Because if you wanted marketing help or graphic design help for anything, you're not really going to find that on campus.

Diana: Thank you. Do you think a list of all the available resources for your use for starting a venture, whether it be certain professors that are willing to take the time to sit with you or you know, WPI has a legal division, do you think having that list would be helpful.

K: Yes, absolutely

[nods from everyone]

F: A list of contacts, especially if it's a list with contact information, as well as repeated statements saying we don't mind would be helpful

I: An interactive 3-D map

J: Maybe a website dedicated to helping when you have an idea, or an official office, not now probably, but as WPI grows

H: Also what industries they're in, what they're interested in working on, I think that would be good, that way you know who to go to

Diana: Are you guys familiar with the tech advisory network?

[some nods]

Diana: Because they're basically a bunch of people experienced in different areas and they give you advice based off of who's interested. So in moving forward, I guess like you said a list would help that you know what is okay to join. I know in previous focus groups, we've talked about there's the venture forum, where you can enter in a business competition, but it may be overwhelming because for someone that has no business experience, to try to enter in a competition can be a lot.

J: I had an issue with that, I competed in that and my competitors had more than 2-3 years industry experience [laughs]

G: Yeah you're like a fish in open water, I wouldn't even know where to go. That's the thing, I'm not saying that entrepreneurship shouldn't be limited to take classes at this school. Entrepreneurship comes from people with good ideas and people who are willing to act on those good ideas and without an outlet for that, I'm just stuck in a rut, that's how I feel.

H: I also think the School of Business could do better with advertising competitions that are available, because there was the business model competition, which is tomorrow and they advertised it two weeks ago, and it's been open for months. And it would have been great to have all this time, instead of squeezing it in with projects.

Diana: Do you think maybe having a mock or an organization that will help you kind of plan your ventures to enter it, so kind of like an in between from just going on your own to the venture forum and having that middle ground where it's a safe environment for you to start pitching your ideas and start developing it.

G: Like a shark tank type thing

[nods from the group]

G: Yeah that'd be kind of cool because, as long as they're honest with you, if it's a group of professors or just people who have been experienced and are willing to sit down and talk to you. Who would listen to your idea and be like do you know this, you say yes, do you know that, you say no, well you should look into this or just totally scrap the idea, at least being completely honest. Been there done that, they know, you don't at least they can tell you.

Diana: Are there any last burning comments about any of this or resources you can think of?

I: I think it's important if these boards and stuff or the people are those who actually want to be there. Because sometimes I think at WPI, you run into professors who have obligations to be here to do research and they like have to teach but that doesn't mean the professor is a good professor. If they're there because they have to do it, so I think it would important that if you have professors who are there to do some sort of entrepreneurial sounding board, or gives you positive or negative feedback, it's important that the professor is interested in helping the students get there, it's not just one professor from every department has to be on the board because someone's there but they aren't invested.

Diana: Thank you. Are there any other comments? No? Well this will be the conclusion of the study. Thank you so much for your time and I will be passing out your compensation.

Appendix U: Transcript of Focus Group Session 3

Focus Group Session 3

March 31st 1-2PM

SL 313

L

M

N

O

P

Q

Names were omitted and anytime a name is referenced, it was replaced with a letter that they were associated with. Also, business ventures were changed to a general industry to keep them confidential, per the informed consent form and best practices approval from the IRB. Please note that the original name for our resource was Venture Outline for Student Entrepreneurs (VOSE). Currently, the document is called Student Startup Outline.

Diana: Thank you for coming today. My name is Diana Nguyen and I'll be running this focus group. You may take a seat anywhere at the table. Please take a moment to read and sign the informed consent. Let me know if you would like to have a copy of it at the end. I'm going to be reading from this script to make sure that everyone gets the same information. The purpose of this study is to understand the experiences of student entrepreneurs. Please take a moment to introduce yourselves and your grade. We can start with O.

O: My name is O, senior, what else?

Diana: Major

O: Mechanical Engineer with a business management and electrical and computer engineer minors

P: My name is P, freshman, Aerospace Engineer and Business Minor

Q: Q, MBA 2013

N: N, Biomedical Engineer, pre-med, sophomore

M: M, Biomedical Engineer, freshman

L: L, senior, Mechanical Engineer, minors in manufacturing engineering and International Studies

Diana: Thank you guys. To start off the discussion, what is the nature of the business you were planning on starting? We can go around or shout out whenever

O: Mine was renewable energy

Diana: Was it renewable technology or?

O: Implementation of renewable energy sources [omitted].

P: I don't really have a specific one

Diana: That's okay, did you have a general idea of what you wanted? Or do you just know you wanted to start a business.

P: I think I would just like to start in the general sector and get experience, make contacts and everything, and then from there decide what kind of concentration I want to go into.

Diana: Thank you.

Q: [unintelligible] and market analysis, that's what we do

Diana: What was the first one?

Q: Big data

N: I want to open my own pastry shop [laughs]

Diana: Thank you

M: I want to start a [omitted] repair shop on campus. Then I came here and said we couldn't do that so that was sad

L: I was thinking about opening a [convenient] food [provider] that would operate in close proximity to campus

M: That'd be awesome

Diana: Thank you

Q: They actually have one already,

M: Where?

Q: At Gateway

M: That's so far away

[laughs]

Diana: Has anyone started a business here while attending a university?

Q nods

Diana: Can you please elaborate?

Q: Yeah like my MBA, my project, we won several competitions and my partner and myself started [name omitted] like big data and market analysis for music industry [unintelligible]

Diana: So if it's okay with you, I'd like to start the discussion with you, and [everyone] feel free to chime in if you have any other questions that you guys are curious about. What have you done to start your business? So as you can see, it started from a project from your MBA, how else did you start it, or what resources did you use?

Q: I used several professors and most of the knowledge that I gained through [unintelligible] so business plan, networking, negotiation, all the classes I took were really useful

Diana: That's awesome. What are some successes of your business?

Q: We won competitions, we won a lot of PR, like we got funding from angel investors, we are almost in the final for mass challenge

Diana: Have you experienced a lot of failures yet?

Q: Oh yeah, a lot [laughs]

Diana: What are some of the failures that you guys have experienced?

Q: We have to change the business model around 20 times, like we have to develop the idea, like some legal problems with the idea some copyright that we were not very good at that. The financial aspect, we were never able to do it, it's like big investments, so we went with micro loans. Failures, a lot [laughs]

Diana: Would you say that time was ever an issue?

Q: Oh yeah. You never have enough time

Diana: Did you ever experience any group dynamic challenges or conflicts?

Q: We were a team of two, now we are a team of five, but at the beginning, we were classmates, so you can imagine every kind of discussion like problems, [unintelligible] personal life, work

Diana: Thank you so much. Now kind of moving onto everyone else, because you haven't started a business, but you have these great ideas, why haven't you really moved forward with them? And feel free to start anywhere, it doesn't have to be in any particular place.

M: Well for me, there's a rule on campus that you can't vend on campus, which was sort of frustrating because there's so many people here, there's such a demand for [omitted] repair on campus. Like you look around and you see chains rusted and everyone's cogs are completely, like they don't work anymore. But you have to go at least a mile away to be able to fix a [omitted]. And that's always a problem especially if you can't ride it because it's broken. So I

wanted to start that, but there are all these rules and regulations on campus, so they're making it so you can't do that which is sort of frustrating.

Diana: Who did you talk to about your idea?

M: I talked to a couple of professors. I'm not exactly, like I went through this whole bureaucratic chain of people and I'm not exactly sure of who I talked to. By the end, I was like, I give up so hands out, never mind

O: I think one of the biggest things for me is money and time. I don't have a lot of money to blow, you can see that in the loans that I have to take out for school. But as students, for the most part, we are financially strapped and very busy at WPI so there's not a lot of free time to like do something like start a business

Diana: So you feel like with the course load, it's not very giving to try and start something on the side?

[Nods from the group]

L: Yup, I think the biggest constraint is definitely money, like starting something up like a small business like owning a food [omitted] is like tens of thousands of dollars a year to invest in that and get it started, so I don't think that anyone at WPI has really, like any students have that rolling around for something that might not end up working. Um, and then also the timing of it would really be difficult because the only times that I have sort of available are nights and weekends because of school and that's probably what would work out best anyway, but then I lose all of my free time and that's a big trade off there

Diana: Do you have anything else to add?

P: I think for me, a lot of mine because I'm hoping to go through aerospace sector and lot of that work ends up being with the government and everything. So until I really get that hands on experience and I'm able to see what's kind of lacking in the sector and what kinds of different opportunities there are to jump to. I think it's really hard to kind of start a concrete foundation for an idea before I really know what is needed.

Diana: Do you foresee and issues with legal, I guess like understanding what things are appropriate, so like you said with the government sector, you need a lot of clearances for that

P: Right, so there are a lot of clearances, you know, once you have worked in those different sectors, a lot of times there are IP problems, you know being out of your contract for a certain amount of time, and obviously, it doesn't have to be a government job, it's just where a lot of the job market is right now. So it'd be overcoming those legal obstacles and figuring out how to kind of spread your ides without stepping on someone's toes for lack of a better term

Diana: Do you have any other input?

N: No, I've never just seen it as a possible or feasible option to do it while in college, at the same time. Time and resources and a lot of it is that I don't know where to go for the education and the skills needed, which I'm not doing right now [laughs]

Diana: Right, with BME, so I think that's a great dynamic to have, like people want to start a business but aren't necessarily a business major, so you don't necessarily need that background but I know that it obviously makes you feel more comfortable having that kind of background, that makes sense. What kinds of resources that you think WPI could provide, or resources in general that you think would help you in your launching your endeavor? If you were really gung ho in starting it in college

P: Something I've seen and obviously this is just my personal bias but I've seen a lot people who have these different endeavors that want to compete in different things, get these different awards, get the recognition and they usually start through a club, or under a clubs name, and then that funding, they come to student government for it and so a lot of these projects will start because of that funding and because they want to enter in these competitions, and then once they have gotten that, we have clubs here getting tens of thousands of dollars from the government in grants to do all this different projects and everything, so I guess if I did it, although my idea doesn't fall under the category of wanting to start in college, because I want to start it down the road, but if there was something I wanted to do, I would go in that direction, under a club and then if you're successful from there, branch out from the so called WPI umbrella and really be able to start from there.

L: Or how about if WPI had a specific amount that they could grant out every year, and they basically had a competition where you could submit a business plan or something like that, and there'd be one grant given out per year or every other year or something like that, and students would be able to submit business plans for on campus or nearby to campus businesses that could get a grant from WPI to start up.

Q: Promotion I think because right now, WPI has all of those resources, but you need to really dig in to find them. There are grants, there are business competitions, there are even mentoring groups for students who want to be entrepreneurs, but for the students, at least to me, time and work to find all of these resources, they are not well advertised

M: Yeah, maybe to have a streamlined process so that you can just ask one person, you have to go here and here's all the stuff you can look at and here's all the forms for everything you need to do, just so that you're able to like not have to go through all of these walls or barriers, just have one person to talk to [laughs]

Diana: N, what was that?

N: Condense all of the resources together, so you know exactly where to start

Diana: Does anyone else have any other input or do you generally agree with that, if there was a streamlined process of, I really want to start a business and this is who I talk to and this is how they'll help me. This is what I'm hearing.

[nods from the group]

O: I think something else that WPI does that I don't think they promote enough is the STAR mentor program, and I didn't hear about it until my junior year, I know a lot of people involved who get a mentor that is in industry that are usually WPI grads and they help them mentor them with career advice or school advice, other different things. I think it'd be kind of nice to see that expanded and if it was something more on the entrepreneurship side, looking out to small businesses or people that WPI may be able to use as mentors for students who are interested in that. So instead of just looking internally, look externally at successful small businesses or people that run them. More likely than not, people that went to WPI but a lot of the resources that we would utilize that are going to be more useful than talking to professors in class are people that are actually in industry, dealing with it right now that know what they're doing and can give us advice or resources that we want.

Diana: Q, I saw you smiling, can you please explain and kind of tell me why [laughs]

Q: The TAN group, I was thinking

Diana: Yup, can you kind of explain that a little more?

Q: It's a group of like alumni from WPI that are entrepreneurs; they meet like I think it's like once a week

Diana: It's once a month

Q: Yeah and they give you advice, they give you free resources, free time, lawyers, mentorship, everything you need for like to be successful

M: Why have we never heard of this?

Diana: It's called the Tech Advisory Network

Q: And also the Venture forum, they're all here at WPI but people doesn't know

O: I think the tough things about stuff like that is that it's really well known to business majors but it's probably not well known to campus

Q: Not really, not really, you need to put the effort to find them, that was my biggest problem. Once my idea had enough traction, like we have something, we talked to at least 20 people to find these groups.

N: They should be as annoying as the CDC when they send out weekly emails and everyone would know about them

M: Yeah, why don't we know about them [laughs]

Diana: Thank you so much for your feedback. So moving forward, have you ever heard of various resources, various business and entrepreneurship classes available that you can take?

[various yes]

Diana: What about the minors that you can obtain, I mean, being non management majors, are you aware of those opportunities?

[various yes and no]

P: When I was looking into doing a business minor, obviously when coming to an engineering school, I didn't want to lose out on that communication business aspect that I had done throughout high school and everything, and when I was looking into a business minor, they were like oh you're going to be a business minor and everything, there's 10 different minors with different requirements. I think you said you were international studies [talking to L]

L: International studies, which is under social sciences, not business

P: Okay, but there was a whole bunch of them and they all had like slightly different things which I thought were interesting but no one really knows what the different options are

Diana: Can you guys elaborate on what you were going to say?

N: I knew that there was minors and they somehow vaguely related to business-y management stuff, but I just didn't know how applicable they would be to me

M: Also, like a bunch of other problems when I was looking into, I was like, oh maybe I want to get a business minor and the way the course load is laid out for BME majors and for bio majors, actually is that it's really hard to fit it in because your mandatory classes are like one term and you have to take it that term and like, especially with Aerospace, if you don't take it that term, you're screwed over if you want to take the next level course, which is the cooler course even. So just trying to work in my major and the business class into it was a really challenging thing.

L: Even for a flexible major like Mechanical Engineering, it's like I looked into it the middle of my sophomore year into doing a business minor, and I looked at the courses I had to take, it just wasn't realistic to fit all of those course in even two years, because it's a lot. And none of them really overlap too well.

O: I think the thing that really killed me with WPI was when I started my business minor my freshman year, like my first term because I knew that it was something I wanted to do because it

was a smart move and it was something interesting to me. A year and a half or so later, everything changed within the business department and all of the minors were different and all of the classes were different. Luckily they kept the forms that transitioned over, so I was able to keep it and not have to change too much. But like, that did not help, when they changed everything around and like the classes and minors are different now and it made it even more tough to fit in the courses we needed for the minor

Diana: Q, because you are a grad student, did you come here for undergraduate?

Q: No

Diana: So I guess the program that you really wanted was the MBA?

Q: Yes

Diana: How did you heard of that?

Q: It was like some research in technical schools because like, I had the engineer background

O: Where did you go for your undergrad?

[part of conversation omitted for potentially identifying information]

Diana: So, kind of moving forward, have you heard of the recent course ETR 330X, *Assessing Entrepreneurial Opportunities*, it is meant to help students turn their project work, i.e. GPS, IQP or MQP into a business opportunity.

[No's from the group]

Diana: I think that's kind of interesting because they kind of emailed out about it

M: But how did they go about it because there's like 3 different main messages that we get as undergrads. Like the internship/job opportunities, and then you get like mass emails about safety, and you get mass emails about other random things. And then sometimes it's link on link on link, so it's hard to find what the true message is. Was it like a pretty email blast like what they do for events?

Diana: I didn't save the email but like, I'm assuming it was just a general email like when you see those new courses available for the next year.

O: I think it's usually the department that sends those out.

Diana: So if you guys didn't hear about it, and not I'm telling you, what do you think about this opportunity. As this class is literally telling you how to take your project and turn it into a business. What do you think about that?

L: I think that would really appeal to specific IQPs and GPS

Diana: And MQP?

L: Maybe not MQP as much because you don't really get a grasp of what you're doing until your junior year, or the content that you're actually working on until your senior year, and then by that point, it's not too late but you're not about to stick around to just take a course on entrepreneurship. I think it would apply pretty well, at least to some of those projects.

N: What about those people who go away on IQP, how do they turn their projects into a business?

Diana: That's a great questions

L: Well I know at least for me, I went away to [omitted for potentially identifying information] and I developed a waste tire management system, or the flow of a tire when you put it on your car and to the end where it may get incinerated for energy or something, and I'm sure with that I can write up a proposal to the EPA to do at least get a job with them if I was interested in that. And sort of turn that into a career if I wanted to.

P: I think the opportunity is cool. It kind of falls back to and maybe I only see it because M mentioned it before, I'm an Aerospace major and when we get here, they literally tell us these are the courses, these are the terms you're going to take them, you can't move it. This is the term you are going away from IQP, sorry if that's how your life is. In trying to fit in the business minor, it's difficult trying to figure out when the different courses are offered, when I can actually take them, so I think adding that extra course, especially with having no overlap with my major right now, and none of my credits. I mean, right now, I'm not getting an extra social sciences credit because I was already done with that, so it's kind of hard to validate putting another course in that doesn't go toward my major or my minor, with such a tight schedule as is. I think the opportunity sounds really cool, it just might be hard to do.

Diana: Thank you. Have you guys heard of the entrepreneurship club on campus?

[no from M and N, yes from everyone else]

Q: I held a position

Diana: Oh were you? Can you tell a little bit of what they did?

Q: Basically we had meetings every week, we had entrepreneurs come in and speak, and we like brainstorm, it depends on the week

Diana: I've heard that it's not so much as the entrepreneurship club but a networking club

Q: Yes, absolutely

Diana: Do you think networking help with a business?

Q: It's the most important thing

Diana: Why's that?

Q: Because you learn from the people you network, they give you advice, you see what they are doing, you see what the people need, you are willing to help. The entrepreneur is willing to help another entrepreneur. That's the idea of an entrepreneur

Diana: Did you have help from a lot of other students for your business?

Q: Yes absolutely

Diana: What did you utilize other students for?

Q: Like me help with the business plan, help me with proof reading the marketing campaigns, the website, like the coding. Some kids help me with the coding

Diana: Were these students in your coursework?

Q: No, it was undergrads or graduate students

Diana: How did you find them?

Q: Talking to people, networking, and some of them are trying to work for me

M: That's really cool.

Diana: So kind of moving on to the next thing. This is a worksheet that my MQP developed. It's two pages. The purpose of this worksheet is to help student entrepreneurs once they want to start their venture. It resembles a checklist that is aimed to get the user to start thinking about certain components necessary to start their business. Please take a moment to read through the Venture Outline for Student Entrepreneurs, or VOSE for short. I'll be asking you a series of questions in a moment. You don't have to fill it out, just something to look through.

Diana: Do you think this resource would be helpful for your own personal use when you're kind of, when you want to launch your business? Be completely honest

O: It's kind of confusing the way that it is printed [because the sheets go from page 1, 3, 2, and 4]

Diana: Thank you

N: Yes, because I like having a list of things to do that are very clear. Goals that are measurable and achievable and this would have those for me. So I wouldn't have to think of those things, I would just have them.

Diana: Feel free to agree or disagree, Q, I know you've already started a business, so feel free

Q: I would disagree. Most of these things, I didn't use. Just a few things, and then I tried. I used a different approach.

Diana: What approach was that?

Q: The lean start up. It's if you have an idea, try it, and if it works, good, keep going. If it doesn't work, change something. This [worksheet] like is very structured, like you need to do this and I think that a resource like this is going to force people to think like if I cannot fill this [section] I can't move forward. That stops the growth

Diana: Any other opinions?

O: I think, I mean I agree with the lean start up idea in that if something's not working, change it, but I feel this is geared more towards starting out as like a preliminary analysis of whether or not it's worth it, where to allot time, where to allot money, where to allot efforts and I think this is a good way to start. And then once you get rolling to kind of alter your efforts based on what you need and what you have and what's working or not working. So in terms of starting out a business, I think, and to structure everything so you know where to begin as opposed to having an idea and not having any idea of what you're doing and just winging it. I don't think that's smart at all.

M: Honestly, if it's a problem in having the structure be like where you have to do this, where you have to do this, where you have to do this, the easy way to change that is instead of having 1, 2, 3, have bullet points. And then you don't have to worry about this going before this, going before this, like it's all psychological. It's so funny having those numbers changes the way you look at this sheet. But as soon as you put it into bullet points, things sort of like are the same priority, fill out what you can as you go, if you need this, this is something to think about, you don't necessarily have to fill it out right now, but here's something to think about before you move forward or completely invest all of your effort into this other thing. So like I think this would really help me to start a flourishing business if I took the time to like do everything on one of these.

L: I think it's really good. I think that it would definitely need to be personalized for each individual business because a lot of these are sort of overarching things that might not apply to a lot of businesses right away. Like in one of the sections, it's marketing and sales for example, it talk about conducting market research, designing advertisements, printing advertisements, develop sales plan, I think that for a lot of student run businesses, it's not so much how can we market this product or how can we market this idea, it's more that this aspect of our community is lacking. For example, like the [omitted] repair example, there's nowhere nearby to repair [omitted]. If I open a place that has tools to fix [omitted] and I will fix [omitted] for a certain amount of money, then I think that this would sort of overcomplicate some aspects for certain businesses.

P: Overall, I like the general idea and having an outline like this gives me the confidence to be like, these things are something I can do if I take it step by step, and it's plausible, it's not something like this overwhelming idea. Um I agree that if something goes wrong, you have to compensate for that. Yes, if something that doesn't apply from your business plan than it's something that can be changed, but I like the overall idea. Knowing me, I won't actually take the time to go fill it out each step, because I guess I'm lazy, but I like the idea of having something to follow as guidelines. And then at least if something is lacking or something is not working, then at least you have something to refer back to, so maybe I didn't communicate this well enough or I didn't write this proposal well enough, so it'd give me something to refer back to.

Q: Revising goals is always important. It's true. My biggest concern is the over analysis that you're going to over analyze every step that you make and you're going to freeze at some point, because you're going to analyze and analyze

Diana: Thank you. Can you think of anything that is missing? Like concepts or really anything in general?

M: Maybe just like in the very beginning, like the goal of your project just to be like this is the need and this is how you're going to fill it. Just so you know exactly what you're getting yourself into and not to have some super broad and super vague goal like we're going to make food on campus as opposed to I'm going to make a food cart that's going to be this type of cuisine and this is what I'm aiming for. So just have something at the top that says this is the goal, this is the specific need that I want to fill.

O: I think that falls under mission statement and goals, that's the end goal of the venture.

L: My only other comment might be that there might be a better medium for this form than a word document. It might fit better into excel or I don't know maybe Microsoft project. I think there might be better mediums for it. But I think that it's definitely thorough and it lends itself well to being modified and you can definitely add more specifics or take them out, if you feel like they weren't applicable.

O: Yeah I agree, I like the structure of it. But I think it's also something very fluid, like entrepreneurship is a very fluid system at least from what I've heard from entrepreneurs. There's no set structure to it, that no one business is the same and no one method is the same in those markets.

Q: And everything is changing and everything is going to be changing

N: Add a step where it's like look back at your objectives and re-evaluate them to see if they need modification.

O: That's a good idea

Diana: Do you see anything that is not necessary at all?

O: I think organization and time management can almost fall under the same category. Like a Gantt chart, at least my own association, it goes with organization, keeping it organized and keeping up with deliverables, deadlines, like a Gantt Chart falls under my understanding of organization would be. I don't know if organization refers to the organization or organization of the entire project. But Gantt charts, mission statements all kind of tie in together.

P: To me, under organization, number one and two and whether it's meant for a bullet point or as a concrete, do number one then do number two, then do number three, for me, one determines leadership and those required, and then two is determine and recruit potential partners, like yes it's important to determine your leadership style, but I think it's more important to skip step one and say, I mean not necessarily skip it but say do I need other people why do I need other people, not what is my leadership style immediately be. To me, it just seems kind of early in the process to do that, but I could be misinterpreting and stuff

Diana: So basically, it's not clear where this worksheet fits in?

P: Yes

Q: Kind of with her, the order is like, you should start with the mission statement, what you're going to do, what you're going to solve, who is your market, then move things forward. Like recruiting, it can be done the very last because why do you even need to recruit if you can do it by yourself at the beginning.

Diana: Thank you. Would you want to use this document when starting your business? Or what can make it more useful?

L: I think it provides a guideline in any case. I don't know if I would be in favor of using this exact document. But I think it definitely provides a good checklist of things that you should be thinking about when starting a business. You have to think about time constraints, money constraints, people that you're working with, what you want to accomplish, and it includes all of these things on here. But it does seem very structured to me and if I was starting a business, not that wouldn't want to set goals for myself, but I want to sort of leave them a little more open than this.

M: I think that I'd be likely to use this document if it was two separate documents, like bullet points of general ideas that you can consider as your game plan for what you're going to do with your business and then another document being like, this is like, being like, I need to get stakeholders and stuff and this is how I'm going to do it, this is the date that I'll get it done by and like that and have them be two totally separate things. One being like, here are vague goals and other being like here's me checking off stuff that like I've already done and accomplished and keeping track of that.

Diana: So I guess, keeping in mind WPI like, what kind of characteristics of an environment would make you more comfortable in starting a venture? So basically, what can WPI do for you to ease some of those obstacles that you perceive to be when starting your venture?

L: I think that when we talked about it before, just clarity and making the information more easily available. Knock that one out of the way

Diana: What happens if we kind of have a list of resources in addition to talk to in addition to this worksheet?

[that would be very helpful, nods and yes' all around]

P: I mean I think you can put it out there, like what we were saying with the emails, to a certain extent, but people who really want to take advantage of it, they're kind of the one that needs to make that first step, that first line of communication. So someone is going to go out of their way to pull up this document or go out of their way to make that initial communication and giving them that direct contact list so you're not going through 20 people. But at least we're not just like, it's more for the type of person that is really wanting to go after this instead of like oh I'd like some money you know and that sort of thing.

L: Well, I think that also it'd be really helpful if you know, if I'm interested in starting a business at WPI, I'll probably go on google and I'll say starting a business at WPI. And it'd be really nice if there was sort of a link...

O: PDF? [laughs]

L: No like the first link would say something like, you know, a link to the entrepreneurship club or a link to, you know, a subset of the business department that is about, you know, student run businesses or something like that. That'd be nice. I don't know if that happens right now, I haven't actually tried it but I would imagine that..

Q: You have to dig to find information through the website.

L: Yeah, I would imagine that you need to do a good amount of digging to actually get through the right resources

O: Something else that would be nice on campus alone is, you know we have the WPI website and everything, but like we have entrepreneurship club, we have entrepreneurship minor, but like, I feel like entrepreneurship and business minor and business management, it's all dissolved into the business building, in that little corridor down Washburn and it's in the business office and they just point you to the right professor but like I feel that stuff like this is starting to grow very quickly and like if we were to kind of want to give people a resource for entrepreneurship, and for being young entrepreneurs, I think that is something that WPI should recognize and follow suit with the CDC and SDCC, like have its' own separate offices or areas. This is labeled the entrepreneurship, whether it's one professor or an area of people gathered like where their offices are, that is the entrepreneurship wing or area. But having a set location that you can go to.

If you wanted job advice or career advice or interview advice, or, you know, something for your resume, you go to the CDC, you recognize where it is, that's there's a specific area. But for this, it's not, it's very vague and you have to search people down and talk to 20 people to find out who to talk to about what you want to do. So something like this would be a lot more convenient to have that set place in your mind.

Q: I think they are trying to that with Gateway park

Diana: Is it Gateway or the business incubator?

Q: No all the business offices for the business professors are moving to Gateway Park right now

O: Oh because right now, Gateway has that new building where's it's all business people. But it's like very confusing when you go there.

P: I'd almost like to see a resource where if that did start, like mentioned before, about just the start up to get people interested, I feel that is something that can almost fall under the CDC. Where like, there they do a sub department or hire a professor advisor or something that can help with that mindset. Because it's the career development center, and that career shouldn't be when you're going into to apply for a job. It should be if you want to start your own career if you want to kind of make your own way. I think that can fall under the CDC and at least to start off. If it grows more, then great, start your own office. But at least it would give it that way to plant its roots and grow up from something that WPI already has and that students are already starting to use more.

Diana: M, were you going to say something?

M: Um, just going back to the website, the WPI website sucks balls. Like it is the worst website that I've ever used and so finding anything on there, whether it be IQP, whether it be MQP, whether it be anything about WPI, it's a struggle. Like you have to search like seven different terms and you have to like figure out which ones need to be the most important terms, and which are the keywords that they would use as somebody that already knows all of the lingo. That was just really frustrating and especially trying to figure out who to talk to when starting a business, like, you search the business department and like okay, the business department and alright, I guess I'll just go talk to one of these professors and maybe they'll know. Or like, and then they send to you six different places, and you're like, wait this is nothing, you end up in an office that has nothing to do with business and like, am I even supposed to be here? It was the most confusing thing I've ever experienced, and this is so weird

O: And you go to a tech school [laughs]

Diana: N, do you have any input at all?

N: Not anything that hasn't already been said.

Diana: So almost leading into a wrap up, have you guys really considered partnering with WPI to start a business? So like you said [to M] WPI wouldn't let you start your own, why not partner with WPI to start the [omitted] repair shop?

M: Um , I think that would be an amazing opportunity and an amazing thing to do, but like the means to get to the point where like you can talk to somebody about that is like, you have to be really perseverant and push like yes, I want to work with you, yes I want to do this. And if it were more streamlined, like we said before, if you want to partner with WPI, talk to these people, these are the applications you need to fill out, you need to work still but at least it's like one person. And that'd be really cool, I'd be down to do something like that. But like the process right now is totally all over the place and is really frustrating.

Diana: Is there anyone else? Q, I know you've already started your own business but...

Q: It's too late for that, for partnering with WPI.

Diana: Do you, I mean, was that ever your thought when you started it?

Q: No

Diana: Why was that?

Q: Because it was our baby, my partner and I, it was like our venture. And we didn't want WPI taking part of that. They didn't do anything.

Diana: I guess that kind of goes along with IP, kind of like, you don't want them taking money from you, when it's rightfully yours.

Q: And also because the only resources they gave us was like, oh, you need to change this or this in the business plan presentation. It seems like it wasn't valuable.

P: I was about it say, I think it really depends on kind of right now, what your business venture is. So like, for M's, it can be really helpful in partnering up, I mean, and WPI has a lot of rules with non competes and there's different deans you can talk to about different things. Obviously, you wouldn't know any of that if you didn't look into it. I know some of that because I've seen it and I've helped people work through these problems through [an organization on campus] but I think a lot of another explores like or technology base or professional business, that's something that you're going to do outside of college, not something that you want to do while you're in college sort of a thing. It might be good to partner with WPI for a financial reason, but at the same time, it's kind of like what you were saying, [Q], it's your baby, you don't necessarily want WPI to put the stipulations, [unintelligible] and I wonder the legality of that. How much do you owe WPI, how long is the contract with them for? If something takes off and you want to sell it down the road, does WPI still own their share? So I think a lot of it's really circumstantial and how many things need to be worked out first.

M: Yeah, for like my bike thing, I want to build a program and like have students run it when I leave. Like I want it to stay on WPI's campus, it wouldn't necessarily be like, M's bike shop, it'd be WPI bike shop. Like just trying to get that resource available on campus. So like, for very specific things, it'd be amazing to partner with. But if it's your baby and you can take it into the real world, not necessarily, and it's something like nothing the professors are helping you with, I can understand why you wouldn't want to partner with WPI.

Diana: Do you have any other things, N or L?

N: I feel like with a pastry shop, if I partner with WPI, it'd just get shoved towards Chartwells and because they are the food vendors on campus. No thanks

P: They don't like competition, they have a non compete

Diana: Thank you for sharing. I guess as a wrap up, do you have any other opinions on resources that would be helpful in starting a business at WPI or anything else you have in mind?

O: In coming years I'd like to see it be more prominent on campus

Diana: What do you mean?

O: Like an entrepreneurship program. I know it's starting to pop up on my radar but I'd like to see WPI make more of a push to promote student entrepreneurship and their endeavors.

Diana: I know that's the point of WPI's business incubator. I'm not sure what direction they are taking it in but they are having a space for people to collaborate and talk about certain things. I don't know if they're staffing it or anything but

Q: With the graduate programs, they don't like entrepreneurs. Even though the motto is innovation and entrepreneurship, but they try to push it into the graduate program. But the problem is, no one wants to take the step forward

Diana: Why do you think that is?

Q: I don't know. They don't know where to find the information or where to go.

Diana: Okay, thank you, well that will be the conclusion of the study and if you want to pass me my phone, I will be handing out your compensation.

Appendix V: Transcript of Focus Group Session 4

Focus Group Session 4

April 3 6-7PM

SL 313

R

S

T

U

V

W

X

Names were omitted and anytime a name is referenced, it was replaced with a letter that they were associated with. Also, business ventures were changed to a general industry to keep them confidential, per the informed consent form and best practices approval from the IRB. Please note that the original name for our resource was Venture Outline for Student Entrepreneurs (VOSE). Currently, the document is called Student Startup Outline.

Diana: Thank you for coming today. My name is Diana Nguyen and I'll be running this focus group. You may take a seat anywhere at the table. Please take a moment to read and sign the informed consent. Let me know if you would like to have a copy of it at the end. I'm going to be reading from this script to make sure that everyone gets the same information. The purpose of this study is to understand the experiences of student entrepreneurs. Please take a moment to introduce yourselves and your grade. We can start with anyone.

U: My name is U, senior, Management Engineering program, focused in Biomedical Engineering. Right Now, I am working on my MQP with Professor [omitted]. For those of you who don't know him, he's pretty well connected within the WPI entrepreneurship tree of life. And I'm hoping that by the end of this semester, I'll be able to launch my MQP and get some investors and make a ton of money

S: I'm S, freshman, Mechanical Engineering and Robotics Engineering double major. I'm the current owner of [omitted], a [screen printing] company, [omitted]. It's still new and I'm trying to find my place with everybody so it's been sort of a good area to have a couple of areas, so it's been good.

R: Alright I'm R, senior, and a Biotechnology major, I wanted to have a Laundromat that also [has food and drink available], because putting that near a college, a lot of people will go there and you can double your fun while you're there when you're doing your laundry.

X: My name is X, senior Biomedical Engineering major, and my idea is based off of the MQP we've been working on. We create materials for companies that want customization available [business description was omitted]

W: My name is W, also Biomedical Engineering major, senior, I'm working with X, on the same idea.

V: I'm Management Engineering, with a concentration in Electrical and Computer Engineering. And I run a consulting company for electronic development and installation

T: My name is T, I'm a double major in Chemistry and Environmental Studies, and I think it would be really cool to start a business that environmental consulting company [omitted].

Diana: Thank you for sharing guys, so the first question is I really want to ask is, who here has started a business while attending WPI.

S: I started my business as a senior in high school. It's been running for about a year

V: Yes, I have.

Diana: So starting with you guys, what have you done to start your business? What resources did you use? And feel free to shout out whenever, it doesn't matter who starts.

S: Starting off, I saw a niche market. I'm involved with FIRST robotics a lot and they need t-shirt printing so I saw that there was a market for that. I had a lot of friends in that and the connections I could use. Getting into the industry didn't require too much equipment, and I figured might as well start for it. When I was applying to colleges, WPI was my reach, I knew I wanted to do engineering but it was like either WPI or a community college and start my own thing. Because I knew I was always going to run my own company, working for somebody was never an option for me. I don't listen very well. And so I ended up starting the company and then I got into WPI and I figured why not do both.

Diana: And did you save up money yourself to start?

S: Yeah me and my business partner, who lives back home, we're in 50/50, saving money through work and with a couple of guys as investors, who have helped with buying equipment and paid them off via loans, because they're really friendly type deal. It worked out well.

Diana: V, what resources did you use for your business?

V: So uh, it started with this project [omitted]. People saw what we did and they figured we might be interested in taking on some custom electrical engineering projects. So it just kind of started out like that

Diana: What have been some successes of your businesses?

S: Successes of the business have been more or less the connections that I've had through robotics and coming here a school with like Greek life and SAS and stuff. It's really the connections have helped with the success and stuff. And determination because there have been

a lot of points where it's just like why are we doing this, this is dumb, we're not going to make enough money, like going to school for engineering, why would I be doing [printing]. I know I thought that a lot but it's good experience and used the company to learn how to run the company type deal. And that's sort of been it

V: Um, what successes?

Diana: Yeah

V: We designed and installed systems for [an expensive job]

Diana: What are some of the failures of your business and what did you do about them?

S: Buying equipment right away and since we sort of jumped into it we knew we needed equipment, but we didn't do enough research on them. I was just like a dumb senior getting ready to start something new. So I figured I learned best by doing and then figuring out my failures from that. It was buying new equipment, processes to make sure everything was coming out consistent. So um in comparison from when we started, we have books on how to do things. Like we have this Bible for if we need to do [a particular type of clothing] we have 30 pages on how to make a successful [order]. And we've never had that in the beginning, which made it inconsistent. So building on that with the knowledge, just going for it, just keeping track of everything has helped a lot.

Diana: Okay.

V: Uh, we would get projects and commit to them, not knowing how long it would take to do because, I guess, a lack of experience like [S]. Um and so, that was offering timelines without being able to stick to those timelines.

S: I can relate to that a lot because there were times where like there was a 200 [clothing] order, no clue how long it was going to take, just being like, we need cash flow. Cash flow is number one, and when it gets close to the wire, three days to finish it, it's not.. yeah committing to deadlines. It's hard to do when you don't know exactly know where you're doing because you're new to it.

Diana: Thank you. For everyone else, you have these great ideas, yet you haven't started them. Can you please talk about some of the reasons why?

R: I think the biggest thing about it is the money to start it up and the people that would donate to money to an idea that you have and like, just getting that confidence to get either like a loan or something like that to start the business, which is the hardest thing to come by when you're starting.

X: We've been testing things out in the lab a lot, and you don't know if it's going to work necessarily. So we would be more hesitant to jump into something if we don't have a product that we aren't fully confident in something that works correctly.

U: Concerning the confidence thing, in my entrepreneurship class, [professor] was explaining that a lot of people have great ideas, but they don't develop it and bring it into market. So, it's all good when you're talking about it as your MQP and people are agreeing with you and it sounds good. But the reality of when I open my doors and it's a ghost town, being a hundreds of thousands of dollars in debt. It holds people back and scares people off from pursuing it to its fullest extent.

Diana: T or W, do you have anything else to add?

T: I think for me it's an experience thing. So right now I'm going to go to grad school to get my PhD and I like literally know nothing in terms of like Chemistry to the extent to do anything with the idea that I have. So I need to be experienced enough to know the Chemistry and experienced enough to lead a group of people to like even start thinking about the idea.

W: And with ours, like X said, it's still.. we had a proof that it worked. And to pitch the idea of people and have it not work, we still have to do more research to find out whether or not there's a market for it.

Diana: Would you guys agree or disagree that a lack of knowledge of legal terms that would prevent you from starting your business?

R: I would agree with that. Especially if you're coming out with a product or something like that, a lot of us wouldn't know if it's infringing on someone else's like intellectual property of something they already invented. Like if we don't have the legal knowledge to know exactly what that is. And we also don't know the processes to go through to get patents. That also comes back to money and being able to get a patent

V: It's not only legal terms, it's like whole legal environment

U: The legal landscape

V: Yeah, if they just started a communications company that sells international sim cards and enrolling and stuff. The FCC is like this giant IRS for communications and it's impenetrable by [unintelligible] that was a huge obstacle

S: Yeah with a small business like us, just taxes and keeping track of everything was tough. But we sort of got lucky because we had a connection with an accountant who was willing to, at a low cost, help us out. If we didn't have that, I don't think I was as willing to commit to say oh yeah let's just start a business, no biggie. It's pretty easy to start a business, but keeping track of taxes and your income and writing everything off for donations and stuff. Keeping track of that

can be challenging if you don't know what you're doing. So I can definitely understand how that can hold you back if you didn't have a connection in that field.

Diana: Do you guys know some of the resources available to you, for your use at WPI, when starting your business?

U: Yeah, I went to talk someone at Tech Transfer. And with an MQP or a PhD fellowship, basically, anything that gets grant money from WPI, WPI owns a percentage of it. Which is their intellectual property that we developed. So I went through a whole hypothetical process with him and how I could get my company funded, timelines and people to talk to, with that I thought was really useful, to have a meeting with him. He himself admitted it's like a hazy process that people are uninformed about it. A lot of people, like a lot of us are seniors who have been in entrepreneurship classes for four years, and none of us know what's the first step to bring it into market. I think that it should be a little more of a focus here. If you wanted to be like, if people wanted to be in that mindset, we got to let them see all of the avenues and know all of the percentages.

S: As a freshman, I have friends that are coming here that are gung-ho about starting their own companies and stuff, but they do not know about any of the resources because that's not anything that they tell you about in NSO or anything. And when it comes to doing entrepreneurship classes, they don't really know what it entails, so it's sort of like you're not really informed about it. And you may hold back from it.

Diana: Absolutely.

X: In BME classes, they tell you about the Tech Transfer office. But it's pretty much an overview and you can make an appointment if you want. And our MQP advisors take care of filing patents and things. We have a provisional patent?

W: Yeah it's a provision patent, but then after that [unintelligible]

Diana: What exactly is that?

W: Yeah it's just holding our spot in line, so saying that we have the patents so if somebody else comes up with something, then we've already filed the patent, so we were first

U: If they go through testing and stuff, it's a provisional patent. It's like your IP is somewhat protected.

Diana: Okay, thank you. I guess as a recent course, have you heard of the recent course ETR 330X, *Assessing Entrepreneurial Opportunities*, it is meant to help students turn their project work, i.e. GPS, IQP or MQP into a business opportunity.

[No's from the group]

U: Yes, I saw an email. But it wasn't on my radar as I got my course sheet filled out and I'm not going to mess with it.

Diana: Right and with most of you guys bring seniors, you don't really have that opportunity. But S, you can use that as a resource.

S: Yeah, I'll definitely keep that in mind.

Diana: Even though it's not necessarily your project work, it's kind of assessing

S: You can relate it though

Diana: There's also an Entrepreneurship club on campus, are any of you a part of that?

[no's from everybody]

R: I didn't even know that existed.

Diana: Well I've heard that it's mostly networking, and I think that in moving forward, like S has mentioned, networking can be extremely important in your business. Thank you for your opinions on that. Right now, I'll be passing out a worksheet that you don't have to write on. The purpose of this worksheet is to help student entrepreneurs once they want to start their venture. It resembles a checklist that is aimed to get the user to start thinking about certain components necessary to start their business. I'm going to give you a few minutes to look everything over and if you have any questions, feel free to ask.

[Time passes]

Diana: Do you think this resource would have been helpful when launching your venture or in helping you do so?

S: So I definitely say it would, but the thing that jumps out at me the most is the person responsible, date accomplished and that. A lot of starting this stuff, you need to be dumb and determined because you don't exactly know like a lot of that stuff is hard to gauge when it's going to be successful and you just need to be able to push. Like when you feasibly want to accomplish something that's not attainable. So pushing that you need to be dumb and determined, which is what I like keep trying to say. But it definitely would have helped a lot, because it helped you to really thing, like about communication with stakeholders. I know that the people who helped us out in the beginning, we didn't plan out how much they were going to get of the company and stuff like that. So it would have helped a lot.

U: Yeah I really like it because it's an affirmative style. So like when you make these plans, it's not like a hypothetical. This is who is in charge of this, this is when it will be done and once it gets done, you write it down. Especially when you're working with a team, keep the responsibility well defined and keep the timing well defined. Because as soon as you lose that,

it's just a slippery slope. And like, this would definitely be useful especially at the beginning because this is what we planned out and this is what your job is.

S: And this is really good motivation to keep going. And stuff that you're getting accomplished, like I know there were times where we had like no gauge of how much there was left to become successful as a small business, when we're growing to be a large business. There are a bunch of companies I plan on doing, this would help a lot.

V: U is completely right, not surprisingly [laughs]. He is because like, maybe I won't go and fill this all out all of the lines. But it puts the idea in mind of who's responsible. Like it's something right now, one of the companies I work with, it's a huge problem: making sure people get done what needs to get done. And so, maybe this is a good way to address it and maybe it's not. But yeah, these papers [unintelligible]

R: Yeah this is definitely a good way of you know maintaining accountability and it's clear of what each person is supposed to do, and when they're supposed to have it done by. And so it keeps it easier for each, like when you're working with a bunch of peers, to keep each other accountable and what they're responsible and the due date.

W: It's also good documentation to keep track of how long you think something takes and how long it actually took. So you could plan future things

T: Um I think it would also be helpful to have a checklist like this that is more chronological. Like I think some of these things have a higher priority than others that might get lost in the four page shuffle. Like I think it's really important to contact stakeholders pretty soon, but you also need a clear mission statement, objectives, and a leadership hierarchy before you do that. So maybe that's what the Gantt chart would help. But putting these in chronological order in precedence would help.

Diana: Thank you.

U: I think this would be extremely useful for a Gantt chart because I did a Gantt chart with my MQP in A and B term. And looking at the Gantt chart and how it's set up, I've never felt more capable to get it done than when it was laid out in front of me. So when I came back from break, things weren't so clearly defined and there was no Gantt chart. So it's really harder to keep track of all the dates and this helps you to fill it all in.

Diana: Do you think that there is anything missing? Concepts or is anything unclear or not explained well. So I know not being business majors, are you familiar with Gantt charts.

X: Yeah, we've actually had to make one. For business majors, this is great and it has what to do. But some of these things, it's about how to go about them. Determine and recruit potential partners and suggestions on what the best way to do that or the proper etiquette, I mean, that

would be a lot of things, but maybe if we had a resources like that it would be helpful. Like we take BME classes, this is not something that comes up at all.

W: Yeah, there's a lot of things on here that I wouldn't have thought to do.

U: I have a recommendation

Diana: Sure

U: So I don't know if you organized it so that one member of the team is going to do organization, one is going to do time management, because it doesn't seem like that. So maybe have a sister handout that goes with this and says if you feel comfortable doing organization number two and time management number one, whichever ones, than you would be more likely to be effective at and then list the other activities. So it can be different categories so like a person who has a certain personality or work ethic or style, by picking one, hey realize what other tasks they would be good at doing.

Diana: So V, I know you said you wouldn't really fill it out. Can you delve into more of a reason why and what would make you want you to do it

V: Sure, you'll never know as little about your venture as when you're at the start, right? So that's why a business plan is kind of useless, it's like useful to get you thinking about the idea, but not a plan that you can reference 6 months in the future and say, this is what my schedule looks like 6 months down the road. So this is kind of like the same thing in that at the beginning you might not know who is doing what, just because things come up. Like we didn't know we had to deal with the FCC on Day 1, but then it turned into a huge section of this. So I guess that's why I said that. Because it's like committing to something before you know what to do

S: Sort of going off of that, this can be really extremely useful too, but it can also be intimidating who don't have that like go out and get it personality. Like not everybody is wired in the head to think like oh we're not sure what we're doing, but screw it, let's just do it. Like sometimes you just need to do that, risk it, and be successful.

Diana: I know in previous focus groups that people said it's a piece of paper and it'll become outdated pretty quickly. Would you guys agree or disagree with that?

V: Yeah it's the same kind of deal

W: I like paper [laughs] I like to be able to write stuff down

Diana: What about having an additional resource? So you know you guys had said, you don't know where to begin, and this worksheet doesn't necessarily tell you where to go. What if we had a resource that tells you, this is who you should go talk to for legal concerns, this is who you talk to for business strategy, or marketing opportunities. How do you guys feel about that?

T: I think a resource list would be helpful, like names, and contact information who are prepared to field those types of questions.

W: or even online resources that you could direct them to

X: I think that would address the how to that I'm really shaky on

Diana: Thank you kind of wrapping up, I want to ask you some things about WPI and what they can do to help you out. So first off, do you think WPI is a good place to do business?

U: Yes

S: Yes, one hundred percent

Diana: What are some of the reasons why

S: I feel like the culture here, to start off, very project-y, where people take an idea and transfer it to something. I know I have ideas in my head for other companies, like manufacturing firms that I want to start with kids here who, like possible business partners who have similar interests and stuff. Definitely is, I don't think I would find in other places. Just sort of like the culture I, you walk into a shop and you can tell students are excited about it because it's stuff they love to do. If you went somewhere else and you asked them oh like I have to do it for school and it's different here.

R: On top of that like if what your idea is cross-disciplinary type project, there's tons of people here you can find across all different majors and areas of expertise. They can help out by either advising you on it or going with you on it.

Diana: So U, you said an affirmative yes [laughs]

U: Yes, so based on the meeting with the Tech Transfer office, I think the biggest thing that WPI can do for you is put you in front of the right people with credibility already attached. In this 30-40 minute meeting, he told me things like there's going to be a ton of different lawyers making speeches later in the week, he told me about independent groups like the [omitted] group, of angel investors that he can organize a private meeting with me. Like that resource of putting me in contact with people who could single-handedly write you the check you need, that is hard to come by and that is the biggest obstacle in the real world. Getting the credibility and people that can be like here you go but it's going to cost you 5-10% equity, forever, so that's a bummer

Diana: What do you guys think?

T: Not for my business [laughs] but I guess it depends

V: I was going to agree with T, it depends. Because for V's thing, it's great and for some of mine, it's the complete opposite

S: Yeah, like if I had the idea that you're going into [cloth printing], I don't know if there's a lot of resources for that. But maybe for legal terms to talk with someone about that. But for manufacturing, I can definitely get resources here for that. It just depends on the person. It's the same thing with this [worksheet] it depends on the business they're getting into. My business may be different from his business. It all depends. It's a tough disciplinary, what you're doing is very difficult

X: I think WPI definitely encourages innovation, entrepreneurship. I think just time is something tough for WPI students. I know I'm really busy and a lot of other people I know are really busy. So I know business can take a lot of time and it can be intertwined with course work and things like that but doing that on top of 18 credits a semester and any other clubs and activities would be a lot to handle here

V: I'll actually agree with her, in that you know, I'm taking this ETR class, and I skipped class on Friday to go to Bank of America and wire 2 grand to Hong Kong. So there's no way around it other than to put yourself three days behind business stuff

S: Yeah and I've been like going home on weekends and communicating, like walking out of class to go take phone calls and stuff. Time is probably the hardest to really come by when you're here.

V: I've left class for phone calls, it depends on the call. But like it has to happen.

S: Yeah if somebody is calling you about jobs, like the business is running off of those jobs, it's give and take. It's hard, it's not easy

Diana: Do you think it's limiting when WPI wants a stake in your business because you're using their resources. Do you think that may be intimidating or not?

U: The people's perception of what it is that WPI controls is way blown out of proportion than what it really is. Unless this guy was just lying to my face in the meeting. But everyone that I've talked to that said, oh, I'm going to go to Tech Transfer to see what I can do with starting this business, I've even talked to a group on campus about finances, people are not ignorant. People say like oh that's hard, you should drop out where you like at the Segway model, like oh that guy dropped out so that he could make a Segway, it shortchanges the WPI network a lot, like it makes them seem cheap that people think that they can just do it on their own and that way is best. People are really misinformed about that and that there should be a formal class, it doesn't have to be a course, but a class where they teach you precisely that. Like here's step one, here's what we do, here's what you get, here's the percentage we own, all the way through. I think people would flock to that and those are the type of people that should be in the entrepreneurship course anyways.

S: And the price you pay for the resources while you're here, like you can't get these unless you're here. And you can probably accelerate what his does, like almost exponentially with all the resources here, in comparison if you're doing it on your own. So I can definitely see losing out on a little bit of your business, but in terms of growth and where you're making your money, you have to weigh in the pros and cons of it and see what's worth it.

Diana: Thank you. Anyone else on that? No, okay. So as a last question, what other resources can WPI provide or make clearer for you to kind of help you start your initiative or your venture? Because our MQP can try to compile a list of things and say here, this is what entrepreneurs want at school for them to start their own businesses and have make WPI look better

S: First off, like legal help. With going through the whole process, becoming a business and doing taxes, and maybe point you to firms that are WPI friendly, that could help you. Because that probably puts off a lot of people.

Diana: Thank you

U: Increased transparency

Diana: Can you explain

U: In the Tech Transfer office, like what resources on the hill, and what do they cost you. I think they should have a think tank, like a think tank club if you will

Diana: Anyone else?

X: I don't know how this would apply but I feel like a lot of people want to use their MQP that could be a business, but, it's too late almost because you graduate, and then you don't have the resources as much anymore. So I think maybe starting something, to like juniors who are interested, take some sort of course that informs them on these are the things that you would need to think about. For us at least, it's the end of the year and we have this thing and this patent, we graduating, we're trying to get jobs, so it's hard. So I think earlier would be helpful

S: Yeah I'd agree. I think going after freshman or the sophomores that want to follow their dreams of owning a business, they need to find those kids and push them hard to do it. You're a hundred percent right, it's too late and when you leave, you're gone, you've got a lot of responsibility to take income.. I would have never been able to afford like all of the equipment we got, if I had to pay rent. So it's pretty tough

Diana: Thank you

V: I think a list of people who are sympathetic to WPI students or that WPI pays some money to or has some, like because sometimes you just need a little bit of advice or one question, and it's not how do you answer one question through like you'll find the right person and stuff. And I

think that finding the right person like professional or expert can be difficult, especially if it's not a big thing.

S: And somebody's who's open minded that's like so many people have this before just go for it. And keep pushing, keep pushing, of course you're going to run into problems but think about all the people who are super famous. How many companies do you think Richard Branson had that ultimately died, but now he owns 200 something companies and Virgin America and that whole deal. Just going to somebody that is just like, that helps with resources and like a friend, and just say don't give up

W: Like a mentor program maybe

S: Yeah that'd be great

U: Alumni mentor

S: Somebody that has started a business or gone through the process that you could go to that's out in the real world and tell you exactly what they did and their failures. It'll probably make you feel a little bit better about yours [laughs]

V: I've been through all of these entrepreneurship and business classes and stuff and no class actually tells you how to start a business.

U: You create a plan

V: Right, but what form do you fill out? Do you file in Delaware or Massachusetts? When you need to open a bank account, what stuff do you need? And stuff like that, they teach you the C corporation, the S corporation, they don't tell you that with an S corporation, you file with the IRS. Right or I don't know all of these other things that actually

U: Just keep demonstrating more knowledge [laughs]

V: Well I don't know for me, I was just looking for a class that teaches you how to do it. But there isn't, there's just a lot of stuff, a lot of stuff to start any business. That's something that doesn't exist.

Diana: Thank you. Any other comments? No, well that will be the conclusion of the study and I will now pass out your compensation.

Appendix W: Personal Communication with James Wolken

From: Wolken, James [jwolken@WPI.EDU]
Sent: Thursday, February 06, 2014 4:40 PM
To: Nguyen, Diana Dai
Cc: ggc@wpi.edu
Subject: Re: Opinion on Problem Statement

Hi, Diana,

The problem statement looks solid to me. I added "at WPI" as I suspect there are a few student-run businesses among all colleges. As to my reasons for sponsorship—and here I must be careful that I don't suggest or equate the sponsor's goals with the more important academic goals, the latter of which takes precedent—I sponsored this year's MQP to have students launch GGC with a goal of sustainability, both profits and leadership. Your problem statement aligns with that in my humble opinion, but I'm not qualified or credentialed in this area. Hence, I'm not qualified to say whether my sponsorship goal is a proper one for an MQP, and defer to the professors on such matters. But the business is, indeed, launched. It's been mildly profitable. And you guys are researching and working on a leadership plan.

My few edits are in red below.

Jim

On Feb 6, 2014, at 3:56 PM, Nguyen, Diana Dai wrote:

Hi Jim!

We have developed a new problem statement to guide our paper for the rest of the term. Please take a look and let us know your thoughts. Also, we wanted to pose the following question to you: Did you sign up for this MQP to test student-run businesses?

Problem Statement: There is no precedent of a student-led business at WPI that details the obstacles faced and resources available when implementing their endeavor.

Implications: Student-led businesses provide an opportunity for students to explore entrepreneurship and gain hands-on business experience before they graduate college. Since there is no precedent for a student run business on WPI's campus, WPI students may be missing out on valuable learning opportunities.

Call to Action: Using Gompei's Goat Cheese as a test case, this MQP will provide guidance to future student-led businesses by identifying potential resources and obstacles while pursuing their endeavors.

Thank you!

GGC

Appendix X: WPI Entrepreneurship Resources

WPI Entrepreneurship Resources

In the following pages, you will find a comprehensive list of resources available at WPI for student entrepreneurs.

This list was compiled by Joseph Botelho and Diana Nguyen. Last Updated 4/25/14

Academic Resources

The following courses are available to students at WPI. Courses may be taken as electives or as a collective to complete an Entrepreneurship or Social Entrepreneurship minor.

Undergraduate Classes

(<http://www.wpi.edu/academics/catalogs/ugrad/mgcourses.html>)

ETR 1100: Engineering Innovation and Entrepreneurship

ETR 3633: Entrepreneurial Selling

ETR 3910: Recognizing and Evaluating New Venture Opportunities

ETR 3920: Planning and Launching New Ventures

ETR 4930: Growing and Managing New Ventures

ETR 230X: Leadership, Creativity, Innovation, and Entrepreneurship

ETR 290X: Social Entrepreneurship

ETR 330X: Assessing Entrepreneurial Opportunities

Graduate Classes

(<http://www.wpi.edu/academics/catalogs/grad/mgcourses.html>)

ETR 500: Entrepreneurship and Innovation

ETR 593: Technology Commercialization: Theory, Strategy and Practice

ETR 594: Technology Commercialization Project

ETR 596: Selling and Sales

Entrepreneurship Minor

(<http://www.wpi.edu/academics/business/entminor.html>)

The minor requires the completion of two units of coursework as noted below:

Complete the following course:

BUS 2060 – Financial Statements for Decision Making

Complete two courses from the following list:

ETR 1100 - Engineering Entrepreneurship

ETR 3633 - Entrepreneurial Selling

ETR 3910 - Recognizing and Evaluating Venture Opportunities

ETR 3920 - Planning and Launching New Ventures

Complete two courses from the following list:

BUS 2070 – Risk Analysis for Decision Making

BUS 3010 – Creating Value through Innovation

MKT 3640 – Management of Process and Product Innovation

GOV 2313 – Intellectual Property Law

Complete the following course:

ETR 4930 - Growing and Managing New Ventures

Note: The minor in Entrepreneurship is available to all students.

Social Entrepreneurship Minor

The minor in Social Entrepreneurship is available to all students, regardless of major.

(<http://www.wpi.edu/academics/business/orgminor.html>)

Required:

BUS 1010 Leadership Practice

Select two (2):

ETR 3633 Entrepreneurial Selling

ETR 3910 Recognizing and Evaluating New Venture Opportunities

ETR 3920 Planning and Launching New Ventures

ETR 4930 Growing and Managing New Ventures

Select two (2):

BUS 1020 Global Environment of Business Decisions

BUS 2020 Legal Environment of Business Decisions

ENV 1100 Introduction to Environmental Studies

ENV 2400 Environmental Problems and Human Behavior

ENV 2600 Environmental Problems in the Developing World

ENV 4400 Senior Seminar in Environmental Studies

OBC 3354 Organizational Behavior and Change

OBC 4300 Senior Seminar

PSY 1402 Social Psychology

PSY 2406 Cross-Cultural Psychology

SOC 1202 Introduction to Sociology and Cultural Diversity

Required:

OBC 4366 Leadership, Ethics, and Social Entrepreneurship (or a suitable Independent Study Project)

Non-Academic Resources

Competitions:

Elevator Pitch Competition:

There are three different categories: Personal Pitch, Project Pitch, and Business Idea Pitch. \$500 prize. More information may be found at: <http://www.wpi.edu/offices/cei/elevatorpitch-comp.html>

Robert H. Grant Invention Awards:

Design competition that is usually based within a course. \$1500 prize. More information may be found at: <http://www.wpi.edu/offices/cei/grant-awards.html>

Strage Innovation Awards:

Full-time undergraduates only. Send in an original commercial, philanthropic, or social venture ideas. \$5,000 prize. More information may be found at: <http://www.wpi.edu/offices/cei/strage-awards.html>

The Aram Kalenian Award:

The awards focus is to fuel the entrepreneurial spirit through annual funding of a single viable invention. \$20,000 prize. More information may be found at: <http://www.wpi.edu/offices/cei/kalenian.html>

3R Video Competition- Reduce, Reuse, Recycle:

Make a one-minute reduce, reuse, or recycle video. The categories are: Educational and/or Artistic, and Humorous. The prizes are \$250 for first place and \$50 for an Honorable Mention. More information may be found at: <http://www.wpi.edu/offices/cei/earth-week-video-contest.html>

Business Model Competition:

The BMC represents the first international business model competition and is part of a groundbreaking approach to entrepreneurship that focuses on the process of improving the inputs into entrepreneurship rather than the outputs. \$1,000 prize. More information may be found at: <http://www.wpi.edu/offices/cei/bmc.html>

The Venture Forum:

This organization provides two competitions: 5-Minute Pitch Contest and The Venture Forum Business Plan Competition
More information may be found at: <http://www.theventureforum.org/>

Investing in Ideas with Impact- i3:

Investing in Ideas with Impact is all about translating research into value and real-world impact. It encourages graduate students to consider how the ideas and innovations they are developing through research could become the foundation of new products, new commercially valuable processes, and even new companies. More information may be found at:
<https://www.wpi.edu/academics/provost/i3.html>

Digital Resources:

Collaborative for Entrepreneurship and Innovation (CEI):

CEI helps those in the WPI community interested in creating new products, companies, services, and technologies. Whether creating a technology-based business or social venture or seeking an entrepreneurial mindset, the CEI fosters moving forward through experiential programs. More information may be found at: <http://www.wpi.edu/offices/cei.html>

WPI Intellectual Property Policy:

<http://www.wpi.edu/offices/policies/intell.html>

Gordon Library Business Plan Resources:

<http://libguides.wpi.edu/cat.php?cid=23343>

Other Resources

Entrepreneurship Club:

The WPI Entrepreneurship Club is an affiliation of the Collegiate Entrepreneurs' Organization (CEO), a premier worldwide collegiate entrepreneurs' network and organization. More information may be found at: <http://www.wpi.edu/offices/cei/entrepreneurship.html>

Tech Advisors Network (TAN):

TAN provides advising and networking services in order to support innovators and entrepreneurs. May participate by referral only. More information may be found at:
<http://www.wpi.edu/offices/tech-advisors-network.html>

Intellectual property & Innovation Office (IPI):

Previously known as the Technology Transfer Office. You may contact this office to learn more about obtaining patents or better understanding partnership with WPI in planning your venture.
<http://www.wpi.edu/offices/ipi.html>

Entrepreneur in Residence:

The Entrepreneur in Resident is a successful WPI Alumnus who volunteers his time to provide mentorship and coaching for students in pursuit of entrepreneurship. This year, it is Jim Giza. More information may be found at: <http://www.wpi.edu/news/20134/entinres.html>



Student Startup Outline

Resource for Student Entrepreneurs at Worcester Polytechnic Institute

Designed by: Joseph Botelho, Rodrigo Calles and Diana Nguyen

From our Major Qualifying Project, this document was designed to act as a guide for student entrepreneurs when planning their ventures. Moreover, this resource encompasses a checklist of various components that was deemed essential for startups. Each component comprises of tasks to fulfill. Under these tasks, the entrepreneur should record the name of the person responsible for the task, date to be accomplished, and date accomplished. In this manner, the student will be able to keep track of the responsibilities and priorities of the venture.

Organization

This section considers the mission statement and goal of the venture, additional team members, if desired, and time for organizational reviews of what progress is made. These components help to understand the business as a whole and the progress made thus far.

- Determine the leadership and skills required to foster the venture

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

- If desired, determine and recruit potential partners to develop the venture based on the industry

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

- Establish the mission statement and objectives of the venture

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

Time Management

This section encourages you to think ahead about how to allot your time in order to effectively manage it.

- Create a Gantt Chart. A Gantt Chart is a chart that shows the start and finish dates of required tasks. A simple example may be seen in the last page of this document.

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

- Populate own main deliverables and corresponding objectives and tasks determined by the venture leaders into the Gantt Chart

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

- Update a Gantt Chart using the dates found on this worksheet

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

Communication with Stakeholders

This section delves into whether or not you have obtained sufficient funds for your venture, including operation costs. For example, how much money is required to make, store, and sell your product. Obtaining seed money is important as a lack of money or mismanagement of money is the main reasons why most businesses fail.

Tasks	Stakeholders' Names		
	Name:	Name:	Name:
Determine purpose and expectations for meetings			
Decide meeting frequencies, times, dates, and locations			
Determine other communication preferences for updates			

Note: Under the stakeholders, write the name of the person responsible, date to be accomplished, and date accomplished for each task

Business Operations

This section explores the logistical aspects of the business, considering suppliers/supply chain, labor requirements, location or facility needs, or a way to effectively track finances. These components lead you to think of the logistics necessary to have your business become operational.

1. Determine what supplies/suppliers are necessary for the venture

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

2. Determine logistics of running the business on a daily basis

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

3. Determine what labor is required

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

4. Decide the location and facility for the venture

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

5. Create financial statements and tracking system to track money spent and gained

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

Initial Funds

This section delves into how much money is required to make, store, and sell your product, as well as potential funders such as investors.

1. Determine how much money your venture needs to operate (labor, facilities, suppliers, etc.)
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____
2. Determine potential sources of seed money
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____
3. Develop a proposal to obtain potential investors
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____
4. Contact potential investors
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____

Marketing and Sales

Marketing and sales strategy helps you display the value of your product/service to potential customers. This section considers target market is and how to best reach them.

1. Conduct market research to determine target customers
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____
2. Determine potential sources of seed money
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____
3. Design advertisements based on customers
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____
4. Determine sales plan for product/service
Person responsible: _____ Date to be accomplished: _____
Date accomplished: _____

Organizational Ethics

Organizational ethics is the way a business responds to events within and outside the organization. The ethics of a business will express the culture and its' value to potential customers, investors, stakeholders, and employees.

1. Define values and guidelines for the business

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

2. Compose a document with behavioral guidelines within the business

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

3. Communicate the values to other members within the business

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

Legal Documentation

Legal documentation grants specific rights to the business and individuals within the organization. It is important to find legal counsel in order to draft such documents. Without the proper help, there might be legal issues in the future.

1. Hire or find an expert in legal counsel

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

2. Compose a legal document with founders of the business regarding ownership

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

3. Trademark, patent, and copyright any images, documents, and products of the business

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

4. Identify and address any regulations within the market industry of the business

Person responsible: _____ Date to be accomplished: _____

Date accomplished: _____

WPI Entrepreneurship Resources

In the following pages, you will find a comprehensive list of resources available at WPI for student entrepreneurs. This list was compiled by Joseph Botelho, Rodrigo Calles, and Diana Nguyen. Last Updated 4/23/14

Academic Resources

The following courses are available to students at WPI. Courses may be taken as electives or as a collective to complete an Entrepreneurship or Social Entrepreneurship minor.

Undergraduate Classes

(<http://www.wpi.edu/academics/catalogs/ugrad/mgcourses.html>)

ETR 1100: Engineering Innovation and Entrepreneurship

ETR 3633: Entrepreneurial Selling

ETR 3910: Recognizing and Evaluating New Venture Opportunities

ETR 3920: Planning and Launching New Ventures

ETR 4930: Growing and Managing New Ventures

ETR 230X: Leadership, Creativity, Innovation, and Entrepreneurship

ETR 290X: Social Entrepreneurship

ETR 330X: Assessing Entrepreneurial Opportunities

Graduate Classes

(<http://www.wpi.edu/academics/catalogs/grad/mgcourses.html>)

ETR 500: Entrepreneurship and Innovation

ETR 593: Technology Commercialization: Theory, Strategy and Practice

ETR 594: Technology Commercialization Project

ETR 596: Selling and Sales

Entrepreneurship Minor

(<http://www.wpi.edu/academics/business/entminor.html>)

The minor requires the completion of two units of coursework as noted below:

Complete the following course:

BUS 2060 – Financial Statements for Decision Making

Complete two courses from the following list:

ETR 1100 - Engineering Entrepreneurship

ETR 3633 - Entrepreneurial Selling

ETR 3910 - Recognizing and Evaluating Venture Opportunities

ETR 3920 - Planning and Launching New Ventures

Complete two courses from the following list:

BUS 2070 – Risk Analysis for Decision Making

BUS 3010 – Creating Value through Innovation

MKT 3640 – Management of Process and Product Innovation

GOV 2313 – Intellectual Property Law

Complete the following course:

ETR 4930 - Growing and Managing New Ventures

Note: The minor in Entrepreneurship is available to all students.

Social Entrepreneurship Minor

The minor in Social Entrepreneurship is available to all students, regardless of major.

(<http://www.wpi.edu/academics/business/orgminor.html>)

Required:

BUS 1010 Leadership Practice

Select two (2):

ETR 3633 Entrepreneurial Selling

ETR 3910 Recognizing and Evaluating New Venture Opportunities

ETR 3920 Planning and Launching New Ventures

ETR 4930 Growing and Managing New Ventures

Select two (2):

BUS 1020 Global Environment of Business Decisions

BUS 2020 Legal Environment of Business Decisions

ENV 1100 Introduction to Environmental Studies

ENV 2400 Environmental Problems and Human Behavior

ENV 2600 Environmental Problems in the Developing World

ENV 4400 Senior Seminar in Environmental Studies

OBC 3354 Organizational Behavior and Change

OBC 4300 Senior Seminar

PSY 1402 Social Psychology

PSY 2406 Cross-Cultural Psychology

SOC 1202 Introduction to Sociology and Cultural Diversity

Required:

OBC 4366 Leadership, Ethics, and Social Entrepreneurship (or a suitable Independent Study Project)

Non-Academic Resources

Competitions:

Elevator Pitch Competition:

There are three different categories: Personal Pitch, Project Pitch, and Business Idea Pitch. \$500 prize. More information may be found at: <http://www.wpi.edu/offices/cei/elevatorpitch-comp.html>

Robert H. Grant Invention Awards:

Design competition that is usually based within a course. \$1500 prize. More information may be found at: <http://www.wpi.edu/offices/cei/grant-awards.html>

Strage Innovation Awards:

Full-time undergraduates only. Send in an original commercial, philanthropic, or social venture ideas. \$5,000 prize. More information may be found at: <http://www.wpi.edu/offices/cei/strage-awards.html>

The Aram Kalenian Award:

The awards focus is to fuel the entrepreneurial spirit through annual funding of a single viable invention. \$20,000 prize. More information may be found at: <http://www.wpi.edu/offices/cei/kalenian.html>

3R Video Competition- Reduce, Reuse, Recycle:

Make a one-minute reduce, reuse, or recycle video. The categories are: Educational and/or Artistic, and Humorous. The prizes are \$250 for first place and \$50 for an Honorable Mention. More information may be found at: <http://www.wpi.edu/offices/cei/earth-week-video-contest.html>

Business Model Competition:

The BMC represents the first international business model competition and is part of a groundbreaking approach to entrepreneurship that focuses on the process of improving the inputs into entrepreneurship rather than the outputs. \$1,000 prize. More information may be found at: <http://www.wpi.edu/offices/cei/bmc.html>

The Venture Forum:

This organization provides two competitions: 5-Minute Pitch Contest and The Venture Forum Business Plan Competition
More information may be found at: <http://www.theventureforum.org/>

Investing in Ideas with Impact- i3:

Investing in Ideas with Impact is all about translating research into value and real-world impact. It encourages graduate students to consider how the ideas and innovations they are developing through research could become the foundation of new products, new commercially valuable processes, and even new companies. More information may be found at: <https://www.wpi.edu/academics/provost/i3.html>

Digital Resources:

Collaborative for Entrepreneurship and Innovation (CEI):

CEI helps those in the WPI community interested in creating new products, companies, services, and technologies. Whether creating a technology-based business or social venture or seeking an entrepreneurial mindset, the CEI fosters moving forward through experiential programs. More information may be found at: <http://www.wpi.edu/offices/cei.html>

WPI Intellectual Property Policy:

<http://www.wpi.edu/offices/policies/intell.html>

Gordon Library Business Plan Resources:

<http://libguides.wpi.edu/cat.php?cid=23343>

Other Resources

Entrepreneurship Club:

The WPI Entrepreneurship Club is an affiliation of the Collegiate Entrepreneurs' Organization (CEO), a premier worldwide collegiate entrepreneurs' network and organization. More information may be found at: <http://www.wpi.edu/offices/cei/entrepreneurship.html>

Tech Advisors Network (TAN):

TAN provides advising and networking services in order to support innovators and entrepreneurs. May participate by referral only. More information may be found at: <http://www.wpi.edu/offices/tech-advisors-network.html>

Intellectual property & Innovation Office (IPI):

Previously known as the Technology Transfer Office. You may contact this office to learn more about obtaining patents or better understanding partnership with WPI in planning your venture. <http://www.wpi.edu/offices/ipi.html>

Entrepreneur in Residence:

The Entrepreneur in Resident is a successful WPI Alumnus who volunteers his time to provide mentorship and coaching for students in pursuit of entrepreneurship. This year, it is Jim Giza. More information may be found at: <http://www.wpi.edu/news/20134/entires.html>

