
AVR

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Executive Summary:

The 'smart grid' market and the infrastructure required to begin building and distributing software-as-a-service products for the energy industry, such as ours, is expanding rapidly. The market is still very young, and investment is increasing rapidly worldwide. There are only a few firms currently in the space, and they are targeting large utilities with their products.

At SAVR, we are aiming to develop a software product which will incentivize consumers to save energy by modifying their consumption behavior. We will provide challenges related to modifying energy consumption behavior which will be rewarded with points that can be used by households to compete against friends and neighbors and earn prizes.

Households and consumers themselves will be users, while utilities will be our customers. Utilities in our initial target market of Ontario have government requirements to reach energy conservation goals, and they are looking for products to help them reach these goals.

We will be priced below our competitor's products, and will aim to acquire a large market share in Canada, and then target small- and medium-sized utilities in the United States. We will also try to leverage utilities and environmentally-oriented non-profits to multiply our marketing efforts, and deploy our program in schools for use with their students. We hope this will engage families from both the top-down (via utilities) and bottom-up (kids through their schools).

Our current team is composed of a mechanical engineer who is taking on the business side of things, and two developers, one specializing in web design, graphic design and user-interface, while the other focuses on back-end development.

Our capital requirements initially will be for sustaining development and marketing efforts, and the acquisition of another developer in the near future. We aim to generate capital from competitions in early 2015, and then from an accelerator program later in 2015, and we hope that this, along with our own investment, will be enough to leverage a loan to avoid venture financing.

Being our first startup, we would like to have an early exit, perhaps acquisition by one of our more mature competitors, with the provision that we could keep working on the company. We have aspirations to build a company that can generate a complete environmental impact profile for each person, with water and garbage consumption being other areas we can expand into in the future.

Market Analysis:

The analysis of our prospective market is the result of extensive research over the past ten months. Detailed environmental analysis, five forces analysis and competitor analysis can be found in Appendices A, B and C respectively. The results are summarized in the following market analysis.

The current state of the advanced metering infrastructure ('smart grid') market, and the market for related software and other technologies, is one of the main reasons we chose to pursue a venture in this space. Explanation of why smart grid infrastructure is necessary for the success of our venture follows.

Investment in the smart grid has been increasing worldwide, with the top ten countries for smart grid investment, as of 2010, ordered with largest first, being China, USA, Japan, Korea, Spain, Germany, Australia, UK, France and Brazil[1]. Some of these countries have high investment due to their sheer size, but the trend is clear. Bloomberg reported in early 2014 that global smart grid investment reached $14.9bn in 2013[2]. Smart grid investment in the US has matured, with smart meters proliferating throughout the US, and investment moving towards information integration. Asia still has years of smart meter distribution and growth ahead, as does Europe, which has plans to increase their distribution of smart meters from the current 55m to 180m by 2020[2].

Overall, the world smart grid market is still very young; technologies in North America are just reaching the point where the information garnered from smart meters can be accessed by software firms who can focus on areas such as customer segmentation and outage management. This software has yet to become common among electricity providers, with the exception of the largest utilities.

Canada's smart grid infrastructure has not yet reached the maturity required for software firms to play a large role, with the exception being Ontario, which has implemented smart meters to all customers as well as providing the infrastructure to make data available to third party developers, via the Green Button API[3].

This brings us to our initial target market. Due to our location in Canada, as well as the lack of other software firms, we feel we have an opportunity to gain a large market share if we move quickly. Ontario, as I mentioned, has the infrastructure in place for us to develop our application.

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[1] Briones, Jesika and Nicolette Blase. "Ontario Utilities and the Smart Grid: Is there room for innovation?" January 2012. *MaRS.*

[2] Bloomberg: New Energy Finance. "China Out-Spends the US for the First Time in $15BN Smart Grid Market." 18 February 2014. *New Energy Finance.*

[3] http://www.greenbuttondata.org/

We are developing a software product which will incentivize energy saving for consumers by encouraging them to complete challenges related to improving their energy consumption behavior. This will involve informing them of their electricity usage in near real-time, while educating them and encouraging them to modify their behavior.

To be able to obtain the data about their electricity usage, we need two things: smart meters, which are electrical meters that have the ability to measure electricity usage in short intervals (typical electric meters reported aggregate consumption per month, when someone from your utility would come read the meter), and then a central system to aggregate and organize the data to make it available to third party developers like us.

Ontario has done this by installing smart meters for all their customers, and then using a third party API (Green Button).

Thus, we come to our initial target market of Ontario. There are few, if any software firms competing directly in Ontario. There are approximately 5.23m utility customers in Ontario[4] whose electricity is provided by 80 separated local distribution companies (LDCs, used interchangeably with 'utilities' in this document). The top five utilities account for roughly 2.75m of these customers, while 30% of these customers are serviced by small to medium utilities[5]. An added benefit of Ontario's choice to use the Green Button API is that Green Button is currently being used by utilities servicing 60m customers throughout the United States (including Ontario)[3]. Note that in our cash flow analysis we exclude the top five utilities in calculating average utility size.

We plan to have separate users and customers. Users will be individual households (hopefully whole families) in Ontario, who are motivated first by their desire to save money, which they will do by modifying their consumption habits. The potential to save money comes not just from simply reducing their energy usage, but due to Ontario's time-of-use (TOU) pricing scheme, users can also save energy by simply changing the times they consume energy (eg. doing laundry at night instead of dinner time)[6]. This also means that users can realize an inordinate cost saving by reducing and shifting their energy usage.

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[4] See Appendix F for calculation details

[5] —. "Renewing Ontario's Electricity Distribution Sector: Putting the Consumer First." December 2012. *Ontario Ministry of Energy.*
NOTE: small utility: <12,500 customers; medium utility: 12,500-100,000 cust.

[6] http://www.energy.gov.on.ca/en/smart-meters-and-tou-prices/

The second motivation for consumers will be the prizes we provide for those who choose to compete for them, often against friends and neighbors. We will detail this more in the products section.

Our customers will be the utilities who provide electricity to customers in Ontario. The Ontario Power Authority (OPA) has established guidelines for reducing energy usage for utilities in Ontario, which means that all utilities in Ontario are looking for ways to improve the efficiency of their distribution networks. Most conservation programs to date have focused on improvements in energy-using appliances (trade-in coupons, LED lightbulb coupons, etc.), and indeed many of the utilities have expressed that the consumer market is saturated with these programs and that creative new programs are needed[7,8,9]. We hope to be the solution utilities are looking for, by improving customer engagement and focusing on modifying customer behavior.

Initial customer validation was done by verifying that people, youth in particular, are interested in an application similar to ours, and this was confirmed by the positive response we obtained: 97% of respondents were interested in monitoring their energy consumption on a smart phone or web-based browser, which represented a generally younger demographic (mostly age 17-25; see Appendix E). Aside from a stated desire for revision of their consumer programs, we are in the process of validating the interest of utilities, and have already spoken to an energy retailer here in Montreal who expressed interest in using our product.

During our initial customer research, we hypothesized that the Millennial generation (also known as Gen Y, those born early 1980s to early 2000s), a generally younger demographic, would be a key customer segment for us, based on our observations that this generation tends to be more environmentally-conscious. Indeed, this was confirmed with our research, and has also been confirmed by others; many different sources have found that “Millennials are the most environmentally conscious generation in the nation’s [USA] history”[10] and “47% of Gen Y would pay more for green brands”[11]. Indeed, it has been shown that there are two groups of consumers that are the most environmentally-conscious: Millennials and ‘Conscientious Explorers’[12]. These will be the demographics we target heavily, and thus we will have general profiles for users as follows (see Appendix C for detailed profile): 1. Young, active,

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[7] Kingston Hydro. "Conservation and Demand Management 2013 Annual Report." 30 September 2014. *Kingston Hydro.*
[8] Bluewater Power. *Conservation and Demand Management 2012 Annual Report*. 30 September 2013.
[9] Entegrus Powerlines Inc. "Conservation and Demand Management 2012 Annual Report." 30 September 2013. *Entegrus.*

[10] Winograd, Morley and Michael D. Hais. "How Green Are Millennials?" 5 February 2013. *newgeography.* 3 February 2014.
[11] environmental LEADER. *47% of Gen Y Would Pay More For Green Brands*. 14 September 2007.
[12] Davis, Catherine. *Marketing to Socially Conscious Consumers: Does "Green" Translate Into ROI?* 6 March 2014.

environmentally-concerned middle class families with younger children still in elementary or junior high school, and 2. Older couples who are retirement age, middle class, who are concerned about the environment and take action in things like appliance upgrading, recycling, etc.

Our customer profile will initially encompass utilities in Ontario, who we believe are currently underserved and have few offerings with regards to software. As we expand, we will be focusing on small- and medium-sized utilities, which, due to the rapid expansion of the market, we believe are underserved by some of our larger competitors, and perhaps unable to afford, or at least risk investing, in their services. We will elaborate on this next in our competitor analysis (details of which can be found in Appendix D).

There are several competitors developing software in the smart grid space. I will summarize the two groups here, and let the details of each company be observed in Appendix D.

Based on our research, our competitors can be grouped into two general groups, separated by both company stage and the advancement of their offerings. The first group we will mention is the group we consider most serious as competitors, despite the fact that we plan to position ourselves differently. The main players in this group are Bidgely, OPower, and Tendril. These are all successful companies at a more advanced stage than us – OPower has 500 employees and 28 of 50 largest US utilities as customers[13], Tendril has a team of 65[14], and Bidgely has a team of 31[15] – who have often received significant venture capital funding or have been in the market for some time. They have specialized offerings, with advanced algorithms allowing detection of how much electricity is used in a home by appliance, and often apply advanced behavioral science to their customer engagement offerings.

While it is difficult to garner a lot of quantitative data about these companies since they are privately held, we know that they are focused on the US market and abroad. Based on our market analysis, this would make sense, as the rapid expansion of the market means that the market is far from saturated, and thus seeking the largest clients and establishing a foothold in different markets worldwide seems to be their strategy. Many of these advanced offerings likely come at a relatively high cost (pricing is not published), which supports our theory that they are targeting large customers. While these companies have offerings that we cannot hope to match in advancement (currently, anyway), we believe their strategies offer us an opportunity. Not only have they been relatively quiet in the Canadian market, but

[13] http://opower.com/company
[14] http://www.tendrilinc.com/about-us/team
[15] http://bidgely.com/team

they don't seem to be targeting small- and medium-size utilities, who likely can't afford, or aren't willing to make the large investment required. These will be the utilities which we aim to target, and while we will admittedly have a less-advanced offering, we believe we can still provide a large benefit, and at a much lower cost, which we will use in our marketing strategy. It is also worth noting that we didn't mention EnergyAware[16], which is a young company that is offering a similar level of advancement directly to consumers with their flagship product Neurio, which utilizes a hardware device. We have some skepticism towards their prospects for success given the cost of hardware and rapidly increasing proliferation of smart meters, but regardless, they will have an open API which we believe may actually complement our product should we choose to utilize it.

The second group of competitors are firms who are of a similar advancement as ourselves. This group includes GOODcoins[17] and Leafully[18]. GOODcoins, while offering incentives for energy saving, does not actively monitor it, nor seem to have taken as specific an interest as us. They market directly towards the consumer, and have a more general strategy (rewards for activity, other environmentally-conscious actions), and we don't believe they will occupy much of the same space as us. Leafully, developed for the Apps for Energy contest held by the U.S. Energy Department[19], aims to provide services similar to those we will, but their business model is to engage customers directly and then sell renewable energy to them, which is very different from ours, and we don't anticipate they will infringe on our market. It is also useful to remember that the market is expanding so quickly that even if these firms took off and decided to compete directly with us, there is still plenty of market share for each firm.

Barriers to entry in the market are limited mostly by the infrastructure required to develop software products such as ours, which we have already discussed. However, while it becomes easy to develop a software product once this infrastructure is in place, it remains difficult to develop an effective product due to the specialization and complexity of the industry. We have spent much of our time learning the market, and it continues to shape our proposed offering and the direction of the company. There are several very advanced firms (mostly based out of the United States, particularly California), which we have discussed. Our advantage, however, is that we are already well into the learning process, in a market that is very young and continuing to expand. The barriers to entry caused by the specialized

[16] http://www.energy-aware.com/
[17] https://national.goodcoins.ca/portal/rewards
[18] https://leafully.com/
[19] http://energychallenge.energy.gov/

knowledge required will benefit us down the road, as we will have put in the required learning time ahead of many future entrants.

Overall, we believe the market is a very attractive one, and while we expect our product offering to change as we adapt to customer desires, our faith in the size and rapid expansion of the market, as well as our entry in the early stages of the market developing, will make our venture very successful.

Products/Services:

Our product will be a software program which incentivizes energy savings for consumers, and will improve customer engagement and improve overall consumption efficiency for utilities.

Our initial offering will be a web-based application in which consumers will develop a profile for their home, and give us access to their electricity consumption information via the Green Button API. We will provide a series of challenges revolving around modifying energy consumption behavior. The challenges will have different timelines (daily, weekly, monthly, yearly) to keep users engaged on a long-term basis. For each challenge completed, which will be verified by their actual electricity consumption data, users will earn points. They will be able to compete against friends and neighbors to earn the most points, and also to compete in pools (similar to fantasy-sports) to earn prizes. These prizes may be related to energy efficiency (monetary prizes, coupons, discounts), provided by utilities or partners, or geography specific prizes (sports event tickets, concert tickets, etc.); there are many possibilities. Larger prizes will require larger pools and/or longer commitments, and long-term partnerships with appliance and similar companies will be important to provide good prizes. Consumers will have multiple incentives: social competition, the money saved by changing their energy consumption habits (both overall consumption and time of consumption) and also the prizes they stand to win. This gamification and competitive aspect of the application forms one of our main differentiations from our competitors, and we think will be very important in our strategy to engage younger users (also different from competitors). Customers will also be able to view their consumption on graphs which will show their consumption in both kWh and dollars over time. We are aiming to engage the consumers. To see mockups of the application, please see Appendix F.

It is useful to note here that while our idea to engage consumers in this area is new, it is not the first time that applying a competitive strategy for motivation has been used. Changers, a company which turns charging your phone via solar energy into a game, recently raised $1.5m in funding[20]. Another example is Ambition, a Y-Combinator-backed startup which uses fantasy-style competition to motivate sales teams[21]. There is a precedence of success in other markets for the competition-based engagement we will utilize in our application.

Utilities will receive a new method by which to engage and interact with their customers, and also a new method to improve the overall consumption and consumption patterns of their grid. Current

[20] http://techcrunch.com/2014/02/21/changers-raises-1-5m-to-turn-charging-your-phone-via-the-sun-into-an-infectious-game/
[21] http://blog.ycombinator.com/ambition-yc-w14-offers-a-fantasy-football-style-approach-to-motivating-sales-teams

conservation programs have concentrated on replacing appliances and incentivizing better hardware[7,8,9] (as mentioned). Thus far, modifying customer behaviour has been relatively unexplored area.

We mentioned that there are more advanced offerings available. The disadvantage of these offerings is that they are costly (estimated), and the Canadian market, as well as small- and medium-sized utilities are underserved. We plan to offer a lower-cost alternative to these products, which will also offer the benefit of being a smaller company who can afford to develop products with direct feedback from initial customers, and customize the application to the needs of various utilities. These will be our competitive advantages, along with our hope to become one of the few early firms to market.

Pricing for utilities will be based upon the number of customers they serve. While we will explore pricing during the implementation, the current plan is to charge a small fee for testing our product to generate some up-front cash flow ($2000 for tests of up to 1000 customers), which can later be contributed toward their monthly-recurring cost if they choose to purchase our services. This should also help alleviate what we anticipate will be a relatively long sales cycle. We will offer our product on a yearly-recurring basis, with monthly payments. Our planned initial cost will be $1/customer/year. This will give them an access code for their customers to access our application. Our estimate for this amount is based upon current spending by several utilities on current incentives. As an example, Kingston Hydro spent $186,621 on consumer conservation programs in 2012 and engaged less than 7,000 of their 27,000 customers (see ppg. 35, 36 of Footnote 7). This is one example, and we expect pricing to vary based upon the size of the utility, but we believe $1/user/year is a reasonable initial rate. To see full cash flow analyses see Appendix I. Note that we have used a rate of $0.50/customer/year and assumed that we would not receive money for trials to be conservative in these analyses.

Our pricing strategy was based on the consideration of several factors. First and foremost, as demonstrated in the estimate above, we based it upon what value we believe we can offer to the utility with consideration of what pricing structure will keep in line with the low-cost alternative to advanced firms we mentioned earlier. Secondary consideration was given to the time to break even, as we believe that can be dealt with through financing or other means if necessary, though the cash flow analysis shows that our pricing strategy should support long-term growth of the company without massive financing needs. Given that we are a software-as-a-service (SaaS) company, our marginal cost is negligible, and is really only affected by the personnel we need to add as the company grows to maintain a high level of customer support, development and sales. Additional products cost relatively little, and are fixed by the cost of our employees. Variable pricing includes the hosting and application

deployment services we use, but is relatively inexpensive and fluctuates little compared to employee costs. Thus, we have quite a bit of freedom in the pricing structure.

While we don't anticipate having any proprietary property in our initial offering of the product, our defensibility will come from the social aspect of the offering. Much of the incentive for consumers to save, and thus the value to the utility, will come from the social incentives placed upon users. This social link will make it difficult for users themselves to switch services, but also discourage utilities from switching. We believe that once adopted, utilities will much prefer to slowly develop the application rather than completely change products and risk frustrating their customers.

Eventually, we plan to develop algorithms similar to other companies that will allow disaggregation of electricity consumption data by appliance, giving us a more detailed look at users' consumption and allowing us more freedom in designing challenges for the user to meet, as well as more personalized saving advice. Customer engagement algorithms which utilize behavioral science are also an option we will explore in the future, and both of these features would be subject to intellectual property protection.

Governmental regulations, while encouraging utilities to utilize our product and helping to create the need for our product (by mandating conservation progress), should not affect our development.

In future, we also have some predictions and goals about how the personal consumption and monitoring market will develop. We have seen some success on products related to monitoring water usage[22], and we believe that a software product, and perhaps a matching hardware product, to monitor this on a house-by-house basis will be successful in the future. Areas like California are already concerned given the recent droughts they have experienced. Monitoring of recycling and garbage output, and a disposal system that measures this (web-connected recycling/garbage bins) also has potential further in the future.

[22] http://techcrunch.com/2014/09/07/shower-with-friends-lets-you-gamify-water-consumption/?utm_campaign=fb&ncid=fb

Marketing Strategy:

As we mentioned previously, we have two user profiles who we want to target, a younger Millennial generation profile and an older profile. The common theme between both of them is that they are environmentally-conscious, and while incentivized economically by our application, will also identify with the environmental impact our application has.

Our brand and engagement strategy with these groups will be to make the economic incentives obvious, but to really emphasize the environmental aspect of our product.

Particularly with the Millennials who have young families, we believe engaging the entire family, including the children, will be key to obtaining the customers who are highly engaged on a daily basis. To capture this group, we will have what we believe is a unique marketing strategy which stems from our initial ideas for this product. Early in the development of the idea, we believed we would sell our application as an educational tool, and had targeted private middle and high schools as our potential customers. We did some customer validation, and indeed found that they would be interested (see Appendix E). Public school teachers were also interested, though they had less resources for the purchase of value-added items such as ours. Though we have pivoted from this market, we still plan to distribute the product to teachers who are interested. We believe that this dual-engagement, with kids being exposed through their schools, and parents being exposed through their utility, will lead to entire families who have a high level of engagement. Distributing the product at no cost to schools will also allow us to garner some goodwill from communities, with whom we hope to establish our brand as one who cares about the environment and about each individual community.

In keeping in line with the community- and environmentally-conscious image we want our brand to be associated with, we want to give utilities a very personal relationship. Our marketing and sales efforts to them will be direct, and we hope to be seen as partners in their efforts to improve their efficiency and environmental impact. We also plan to use the existing communication channels via direct mail and email that the utilities have with their customers for promotion of our application. It is in the utilities interest to engage as many consumers as possible, and utilizing their existing channels will allow a great multiplication of our marketing efforts.

We also plan to develop partnerships with environmental non-profits and organizations who are interested in promoting programs and companies who have an environmental impact. We believe that this will again allow us to multiply the effects of our own small marketing campaigns.

Typical goals for growth rate of a SaaS startup are at least 5% per week[23]. However, these are typically business-to-consumer (B2C) companies, and we anticipate a longer than usual sales cycle for utilities given their planning requirements and mature structure. For this reason, we have goals of adding one customer per month from September 2015 to April 2016, increasing to two customers per month until December 2016, and then increasing to four new customers per month for 2017. This is a conservative estimate that we have generated based upon the development and personnel expansion plan we have created, but to be truthful, it is very difficult to estimate. It will depend upon the maturation of the smart grid market, development of competitors, expansion of Green Button use and other APIs, and our financial constraints.

Instead of focusing on growth rate initially, we will be focusing on stickiness. User engagement is critical in providing value to our customers, the utilities. Established goals for this metric are 30% of users visiting monthly and 10% of users visiting daily[21], and these will be the metrics we focus on initially. Virality is typically the next area of focus for many people, and while it will be a focus for us, given that our application cannot be used without utility participation, we will use this to increase our user engagement within each utility's distribution area. Obviously growth rate in terms of number of sales/utilities will also be monitored closely.

For a detailed discussion of price, please see the previous section (Product/Service), but also note that as mentioned, we have flexibility in our pricing structure, and our final pricing will depend on the size of the utility, as well as experimentation. Based upon our Five Forces Analysis (see Appendix B), we also believe that the current market is a seller's market, and since pricing structure is not public, we will have some freedom to structure price differently for different firms. Also see the previous section for a detailed discussion of our competitive advantage.

Our current timeline anticipates completion of a beta project by the end of the calendar year, with beta testing to begin in 2015. A complete timeline for the 12-month period of 2015, as well as a three-year timeline, can be found in Appendix H. Significant milestones and goals include: first customer by April 2015, second by July 2015, testing with one new utility or retailer in February and March, reaching growth of one sale per month by October 2015, two sales per month by May 2016, and four sales per month January 2017. We also hope to add another developer in June 2015, add a sales/marketing

[23] Yoskovitz, Benjamin and Alistair Croll. *Lean Analytics*. O'Reilly Media, 2013.

person in November 2015 and establish an office in September 2015. Development goals include energy disaggregation by appliance by December 2015 and a prototype of water monitoring hardware in May 2016.

Management:

The current startup team is composed of three members, each of which fulfills a vital role within the startup.

Leading the business side of things is Graham Mann, who is a recent Prestige Scholar graduate of Mechanical Engineering from McGill University. Coming up with the original idea for the project, Graham has been interested in entrepreneurship for a long time, having completed several entrepreneurial projects through science fair in junior high and high school, and continuing to foster his interest through the startup ecosystem in Montreal. He is the current President and Founder of a non-profit organization called Sail All[24], which is working in Nova Scotia to make sailing accessible for all potential participants, particularly youth. They have been extremely successful under his leadership and have achieved recognition both nationally and provincially. A former high level competitor in hockey and soccer, among other sports, and having worked for the Coast Guard in a search and rescue capacity for the past four summers, he is very familiar with the leadership role. These traits, combined with the technical, analytics and project management skills he developed in engineering have made him well equipped for the leadership role in the startup. After working for the summer, he is back in Montreal working full-time to advance this project and expand his knowledge in subjects related to management and strategy, as well as analytics as applied to startups. He has committed himself to the project full-time, as well as financially, supporting himself as the project moves forward. He currently holds the CEO title, though as the startup scales it is understood that roles of founders may need to be adjusted as necessary.

All founders have signed founder agreements, which stipulate the equity share they will receive, which will vest over 4 years, as well as contingency plans for investment by founders, procedures for hiring and equity distribution, decision-making, or if founders depart. It also clearly states the role that each founder will play as the startup moves forward.

A Prestige Scholar at McGill, Abhishek Gupta is an entrepreneur, developer, author and commentator on trends in economics and technology. With an academic background in Computer Science, as the CTO, Abhishek brings to SAVR a strong co-founding vision driven by a desire to transform the energy landscape and the way citizens manage their consumption profiles.

[24] http://www.sailall.ca/

Abhishek has in the past secured National Rank 1 in several mathematical, science and technology Olympiads in India and has been awarded the National Talent Scholarship by the Government of India and the KVPY fellowship by the Indian Institute of Science. Abhishek has also received top honors including Honors and Scholars Gold Medals at his high school. His research articles focusing on the impacts of technology and economics on each other have been featured by the Cornell Economics Society.

Working as the Director, Curriculum Integration for the netMTL (Team Montreal – Solar Decathlon) – Abhishek has experienced first-hand the perceptions that the younger demographic holds about environmental issues and brings that understanding into SAVR in the way the solutions are designed. Having nurtured an extensive network in the startup ecosystem in Montreal, SAVR gains access to mentoring and experience from his network. A strong grounding in Java and Ruby along with an understanding of software development augments the technical skill set of the team at SAVR.

Our web development, graphic design and user interface specialist is Lucia Berger, a fourth year student at McGill University studying Computer Science and Economics. Passionate about responsive and beautiful code, Lucia lives and breathes web development. Outside of the classroom, Lucia has worked in the Aerospace, Clean Tech and startup industries. Lucia jumped at the opportunity on working on a project as dynamic as SAVR. On the team, Lucia brings a knowledge of HTML5, CSS and Javascript, including the MEAN stack.

These three members make up the founding team, and we believe form a very strong group. Abhishek and Graham knew each other prior to forming this team after meeting via the Prestige Scholarships, and had shared a friendship through a mutual interest in entrepreneurship. Lucia and Abhishek had also worked together on another project, and large emphasis was placed when forming the team upon the strength as a team. We believe the management team will continue to be effective, though we are aware that as the company matures, management often needs to be adjusted as well, and will keep this in mind. Our core beliefs in developing the business and a good working relationship are honesty above all other things, which we feel helps us deal with issues directly and quickly as they arise. We also all share a passion for creating a meaningful business, not just monetarily, but environmental impact is also very important to us Emphasis in hiring moving forward will center around these attributes and the fit with the team.

While we don't believe we have any personnel needs at the moment, as we mentioned we plan to add a developer and a marketer/salesperson next year. We are also actively seeking candidates to help us form an advisory board, of which we hope to populate with a legal expert, accounting expert and some individuals with industry expertise and experience. The law and accounting profiles may be fulfilled by firms, of which there are several with low-cost startup programs in Montreal[25].

[25] Eg. http://www.fasken.com/en/start-up-program/; http://www.ey.com/CA/en/Services/Strategic-Growth-Markets

Finance:

A detailed cash flow estimate for both twelve month and three year timelines can be found in Appendix I. The estimates for each value and category will not be discussed here, but can also be found in Appendix I. However, we will discuss a few things here. First of all, as mentioned earlier, the three main assumptions in this estimate are the price at which we will sell our product, the average size of our customers and the rate at which we will acquire customers.

We discussed the price at which we plan to initially offer our product to be $1/customer/month. However, we realize this is subject to modification, and therefore have used $0.50/customer/month in our estimate to be conservative. The average sized local distribution company in Ontario has 65,394 customers[5]. However, when we subtract the 2.75m customers that the top five utilities in Ontario represent, and divide the remaining 2.48m customers by the remaining 75 utilities[5], we get an average of 33,067 customers, which we use in our estimate as the average LDC size. We have also made some assumptions on the rate at which we can acquire customers, based on our best guess based on our implementation timeline and our best guess of the sales cycle for LDCs. We also note that our plan to charge a testing fee of $2,000 is not taken into account here, though we somewhat account for it in assuming some of the firms we take on as customers will use it as credit; therefore the timeline may be adjusted, but not significantly.

In the resulting analysis, we see that we reach a maximum capital deficit of $49,854 at the beginning of May 2016. As a further conservative measure, we use a safety factor of 2 and estimate our capital requirements at two times this amount, $99,708. While this amount is significant, we hope to raise additional capital through the spring of 2015 in business plan and entrepreneurship competitions. Between this capital, and the plans to enter an accelerator in the summer or fall of 2015, which we hope will bring in additional capital of at least $50,000, we hope to be able to leverage a loan and finance the company ourselves, without additional outside funding. We are not opposed to venture capital or other financing options but would like to avoid it if possible (the exception being accelerator funding).

It is also worth noting that the founders do not plan on claiming a salary until September 2015, and even then it is a fraction of that offered to the first employees, and will still require the founders to contribute capital towards their own living expenses. This salary is later increased, but will still be lower than that of employees through the first two years.

Based on the cash flow statements, we can also see that the company will break even during the month of August 2016. If any additional capital is raised this spring or capital is garnered from an accelerator

program, this date will be adjusted forward significantly. For example, if $10,000 was injected from competitions in March 2015, and an additional $50,000 was injected in September 2015 from an accelerator program, we would break even in October 2015 (ignoring our safety factor of 2).

As this is the first venture for all founders, a relatively quick exit is desired. Our ideal scenario would be acquisition by one of the advanced, larger firms mentioned in the competitor analysis, with the provision that we could keep working on the company and moving in the direction we have outlined. It is our hope that by capturing a complementary market to these larger firms, and separating ourselves as a low-cost alternative to their offerings, they will see value in our acquisition and the market we command.

Alternatively, if an acquisition is not possible, we have a long-term vision for the company that we have outlined, and a long-term vision for a public company which would specialize in generating an overall personal consumption profile. This would expand to the products in water and garbage consumption monitoring, but could also further expand into quantifying the environmental impact of consumer goods purchased, the car or method of transportation you use, your own use of alternative power sources, and many other avenues. Our ultimate goal would be to be able to present a quantitative profile of your life and environmental impact.

Appendix A – Environmental Analysis

Demographic trends:

- Population is aging, though largest segment still 25-54 (http://www.indexmundi.com/united_states/age_structure.html) (http://www.statcan.gc.ca/pub/91-003-x/2007001/4129904-eng.htm)
- Millennial generation is coming to adult age – have been proven to be the most environmentally-conscious consumer generation yet (http://www.sustainablebrands.com/news_and_views/stakeholder_trends_insights/aarthi_rayapura/millennials_most_sustainability_conscious)
- Segment of aging population is also environmentally-conscious (http://www.agencypost.com/marketing-to-socially-conscious-consumers-does-green-translate-into-roi/)

Macroeconomic impacts:

- Worldwide recovery from recession in progress; particularly in North America
- Developing country economies like India and China continue to grow quickly and are beginning to implement some smart grid technologies, as well as being influenced by the west; health of their economies allowing this investment in infrastructure
- Indeed, population growth along with improving living standards is making investment in electrical infrastructure very important in areas like India, which have historically suffered from blackouts and grid instability
- Seasonal demand relatively low; summer tends to bring more air conditioning, but winter in northern climates brings heating, so variation in climates across North America tends to smooth seasonality effect
- Market volatility relatively unaffected by wars/conflicts; price of oil relatively stable and low

Technological developments:

- Proliferation of smart meters and advanced metering infrastructure has exploded over past few years and continues to grow extremely quickly
- Standard of communication (ZigBee) has been relatively standardized, making implementation of hardware and software much easier
- Significant investment in North America, Europe, India and China, which is going to continue to increase over the next decade

Sociocultural influences:

- ‘global warming’ and other environmental concerns have raised environmental concern to the forefront of politics and public policy in North America and Europe
- Reducing emissions and improving energy consumption now large political issue
- Millennial generation influenced heavily by green movement, and being environmentally conscious
- ‘Sustainable’ brands, green labels and other environmentally-friendly initiatives by many brands to try and improve image and garner conscientious buyers

Political-legal pressures:

- Legislation and commitments to reducing emissions has led to efficiency improvement goals in many states and countries worldwide (http://www.c2es.org/us-states-regions/policy-maps/energy-efficiency-standards)
- Many firms have submitted to voluntary reductions as a matter of public image, even if not required to do so
- Funding from both public and non-public non-profits and other organizations has increased in areas like renewable technology and energy efficiency initiatives (efficiencyns.ca)
- Several lobbying and activist groups have taken on larger roles in politics (http://europa.eu/legislation_summaries/about/index_en.htm) (http://energyefficiency.org/) (http://www.electricity.ca/industry-issues/economic/regulatory-innovation.php)

Global trade issues:

- Smaller effect on software industry than hard-goods industry
- General loosening of restrictions on global trade improves international prospects for industry
- International legislation such as the Kyoto Protocol has influenced individual countries to implement legislation to help reach those goals, improving prospects for the industry
- International pressure for reduced emissions and improved environmental measures has also aided the industry, who seeks to find software solutions to meet these goals

Appendix B – Five Forces Analysis

1. Rivalry:
    - Relatively few companies in the space
    - US is most crowded market, but technology is still emerging and even US market isn't close to saturated
    - Large global growth, other countries lagging behind in experience and knowledge
    - Low incentives to cut prices, as it is currently a seller's market (pricing is not disclosed)
    - Market is expanding quickly
    - Low rivalry between firms, with exception perhaps being competition for largest utilities in the United States
2. Threat of entrants:
    - Relatively easy to come up with simple software solution
    - Largest players have applied advanced algorithms and behavioral science to their products, both of which require expertise and lots of data to successfully implement; are also likely protected by copyright
    - Relatively low sunk costs to enter market (most of cost is of expertise in software engineering, etc. – almost no infrastructure required)
    - Large players have also established themselves and their results over several years of data collection
    - Expansion of market means that entrants will likely face little retaliation; also relatively little exit cost
    - Therefore, barrier to entry in the market is low, but to reach the level of the top players, experience (through time in market) and expertise is needed; difficult to penetrate top tier of firms
    - High learning curve
3. Substitutes & complements:
    - Several offerings are available among the top tier of products
    - Difficult to assess cross-price elasticity given that pricing structures are not divulged, and most of the firms are still either in the development or growth stage of their businesses
    - There is a high switching cost between products (depending on the degree of implementation), as once one is adopted, switching means the changing of the entire software system the company uses for monitoring the grid and engaging customers
    - Some products could be considered complements, as their APIs are open for third-party engagement – provides opportunity for us as long as we can differentiate our product sufficiently and prove we are a complement to their business as well
4. Power of suppliers:
    - Relatively few suppliers at the cutting edge of the market
    - Smart meter infrastructure beginning to proliferate enough that the number of buyers is growing very quickly worldwide
    - Switching cost is high if implementation of these systems is total (utility relies on them both for customer engagement and to monitor the network from their side, deal with demand management, etc.)

- Information asymmetry exists in that pricing is not disclosed between buyers, or to the general public by the seller; most sellers are private companies and do not have to disclose any of their finances

5. Power of buyers:
    - Buyers in some markets have more power than others; large buyers in the US have some power as their market is the most competitive in the world and they are the largest potential customers
    - Smaller buyers in the US, buyers in Canada and the rest of the world have less power, as there are fewer firms interested at the moment (particularly for smaller buyers)
    - Buyers have some power in that margins in the utility business tend to be low; therefore suppliers know they must deliver high quality product and level of service, and demonstrate this consistently before buyer will commit
    - Cost of switching is high for buyers who have committed to a whole product, which reduces their power
    - Many utilities are public, or at least disclose their finances, which puts them at a disadvantage compared to sellers

Overall, the five forces analysis indicates that the expanding market of software applied to advanced metering infrastructure is an attractive industry.

There are some barriers, and one might think that because of the high level of expertise of the established players, it is not an attractive industry. However, the industry is still in the expansion phase, as more and more countries around the world implement the hardware necessary to implement these software solutions, and the industry is very young. The high learning curve serves as an initial barrier to entry, but the room for more competitors means that any company getting in early enough will be able to learn and acquire the expertise by the time the market is saturated, and be a top competitor.

Furthermore, our proximity to the relatively untouched, yet developing market in Canada gives us an advantage. The current focus of the leading competitors is to develop the largest customers around the world, which leaves us an opportunity if we position ourselves correctly. There is a deficit in available technologies to the smaller providers in North America, and elsewhere in the world. The high level of specialization of other leading firms, while requiring little in the way of costly physical infrastructure, has been costly to develop through R&D and in keeping experts on board. We have the ability to offer a lower-cost (admittedly simpler) product to smaller utilities who would like to implement some software solutions for customer engagement.

The expansion of the market means that there is a relatively low level of competition at the moment. Energy retailers are another market that has been relatively unserved so far. Again, our advantage lies in the low cost of our product, and the ability to customize it for this market.

The market is also a good fit for our exit goals. We are a relatively young firm, and the founders are interested in a relatively quick exit or acqui-hire by one of the established firms. Capturing relatively underserved markets such as Canada or smaller providers with a low-cost product will put us in a favorable position for this outcome.

Appendix C – Customer & User Profile

User Profile 1:

- Young, Millennial-age family in Ontario
- Two younger children, elementary and junior high
- Live in suburban area, in three bedroom home
- Conscientious about environmental issues
- Parents both employed, putting family in middle class
- Try to consume environmentally-friendly products, but relatively uneducated about environmental issues
- Utility has adopted use of SAVR, parents receive information about the application in the mail and by email
- Older child in school is exposed to SAVR because of use in his junior high science class during unit on environment
- Child encourages parents to use application, who are supportive
- Parents interested in application due to the impact it could have on environment, the tips and educational information it provides, as well as the money saved and incentives that can be won
- Child competes with classmates and encourages parents to participate
- Parents compete with neighbors and other friends in Ontario, creating a pool with a dinner on the line
- Children and parents both monitor their usage both on web application and also on their smartphones
- Are interested in upgrading appliances and beginning to implement smart technology

User Profile 2:

- Older couple living in rural Ontario
- Children are older and have moved out
- Upper-middle class and retired
- Both are conscious of environmental impact and have installed heat pump and solar water heater to try and reduce energy used at recommendation obtained through energy audit
- Don’t know about demand-based pricing scheme
- Receive information about the application through mail and email from their utility
- Become interested in the application and use through web application
- Very interested in the educational information it provides, and with flexible schedule are able to optimize their energy consumption to both save money and reduce environmental impact
- Compete online with their kids, as well as some of the neighbors around the area

Customer profile:

- Utility in Ontario (or other state utilizing the Green Button initiative)
- Not one of the largest utility providers in the province or state
- Have energy efficiency targets that they would like to reach through customer engagement and changing customer behavior, in addition to their current incentive programs for LED lightbulbs, energy efficient appliances, etc.

- Don’t have the scale or capital required to implement OPower or Bidgely or other large-scale providers
- Also interested in having a company closer to home to deal with
- Implement SAVR on a trial basis, after which they decide they would like to deploy the solution to all their customers
- Provide feedback on a continuous basis, and enjoy excellent customer service from a geographically close provider

Appendix D – Competitor Analysis

List of competitors:

Landis & Gyr: produce business-oriented grid analysis software and hardware products; only customer engagement tool is in-home monitoring display that is compatible with Zigbee standard devices

Leafully: basic software program that monitors energy usage vs. US average, trending, gives footprint, etc. using Green Button standard, sends weekly summary, will send alerts at abnormalities, winner of US Department of Energy's Apps for Energy competition, allows purchase of renewable energy certificates to match energy usage

Tendril: software platform that provides infrastructure, analytics and understanding required to deliver personal energy services, has gamification where users participate in weekly energy challenges, points awarded for committing and completing actions, achieving performance goals and realizing energy savings, home-based analysis, home energy reports, web portal, mobile application, customer manager, energy calculator, assessment tools

Itron: provide comprehensive solutions that measure, manage and analyze energy and water – electricity, gas, water and thermal energy measurement and control devices, communications systems and software, as well as consulting services

GOODcoins: socially responsible enterprise, rewards consumers with GOODcoins for doing things that are socially responsible, mostly related to being active, conserving energy and environmental stewardship, compatible with some third-party hardware devices, have app

Neurio: developing hardware device (Neurio Sensor) that is installed in breaker panel and transmits data via Wifi, then has application which allows you to monitor energy usage by appliance; also compatible with third party devices like IFTTT and SmartThings, as well as developing an API for third party developers (cost: $270-390 depending upon home type and solar panels); est. ship Jan. 2015

OPower: aimed at customer engagement and improving behavior efficiency, which they have had success at (http://opower.com/results); also focused on demand response and thermostat management; utilize behavioral science to influence customers (http://opower.com/designprinciples/index.html); cloud-based platform for utility customers operating at scale; 28 of 50 largest utilities in US are customers, 95 utilities (9 countries), 50M households & businesses, 500 employees, 65.7 million in venture capital, founded 2007

Bidgely: focus on customer engagement and advanced analytics without needing hardware to provide breakdown of energy usage by appliance; uses native utility brand, neighborhood comparison, looks at appliance, behavior and building inefficiency, integrates with rebate programs, solar disaggregation, demand management, targeted marketing and customer engagement tools

EnerNOC: public company, one of largest providers of energy intelligence software and services for commercial, institutional and industrial customers, as well as electric power grid operators and utilities; allows enterprise customers to manage their energy costs and improve productivity by optimizing how they buy energy, how much they use and when they use it through powerful analytics, decision making tools, reports and dashboards – on any browser as well as Android and iPhone mobile apps; market cap: 396M, ROA: 3.15%, revenue: 461.97M, profit margin: 4.11%, last 52 week stock price change: -17.52%

	Objectives	Assumptions	Strengths/Capabilities	Strategy	Strategic Partnerships/Customers	Market Share	R&D Investment	Revenues
Bidgely	- Deliver customer empowerment and operational intelligence solutions for utilities and customers - Provide superior customer engagement and analytics without hardware - Build brands of customers - Provide personalized engagement experience - Improve utility grid efficiency	- Energy disaggregation will provide superior engagement and efficiency results - Customers want to improve their energy efficiency	- Advanced algorithms that allow disaggregation of energy data by appliance - Compatibility with both HAN and AMI - Integration with solar - Large development team with good funding	- Employ technology through utility customers who use solution under their own brand to meet demand-side efficiency goals through changing customer behavior - Establish large customers in the United States and continue expansion to large customers worldwide	- TXU Energy - Energy Excelerator (Hawaii) - HomeBeat - Green Button - Emerson Climate Technologies - PG&E	- Small but growing rapidly - ~31 employees	- high	- unknown
OPower	- be global leader in cloud-based software for the utility industry - help utilities engage customers and save energy through customer motivation - build large dataset of energy consumption to influence future products and offerings	- behavioral analytics will play large role in motivating utility customers and modifying their behavior - utilities want to improve their energy efficiency - customers want to improve their energy efficiency	- streamlined, well thought out solution backed by years of data and advanced behavioral science - end-to-end platform for utilities with smart grids - high customer engagement and proven results - large company with large resources and high market share - 65.7 million in venture capital investment - Established player in industry, trusted - Different levels of service for utilities	- provide best customer engagement through advanced disaggregation algorithms and behavioral science - achieve market dominance of large utilities in United States and then continue expansion worldwide (offices in Singapore, Tokyo, London, San Francisco, Arlington)	- 28 of 50 largest utilities in United States	- Large and continuing to grow worldwide - ~500 employees	- High (behavioral science and data analytics)	- unknown
Tendril	- create 'customer of one' – personalized engagement and marketing for each customer based on their energy habits - allow utilities to meet and exceed regulatory mandates by delivering relevant information and insights to motivate customers to save energy - intelligently manage peak demand, reduce cost	- utilities want to improve their energy efficiency - customers want to improve their energy efficiency	- early player in energy management sector – have successfully pivoted to keep up with times - gamification aspect that motivate customers - platform is accessible by all customers in the US - multiple engagement channels (web, mobile, text, mail, email)	- provide comprehensive solution for utilities which manages customer engagement and demand response - utilize extensive time in industry to deliver best product		- moderate - ~65 employees	- high – need to keep up with changing market	- unknown

Neurio	- deliver home energy monitoring by appliance to any customer, regardless of current smart meter capability	- customers want to improve energy efficiency and obtain consumption profile enough to pay for hardware device	- can disaggregate energy consumption by appliance - friendly application to go with hardware - third-party compatibility and development possible through API	- sell comprehensive hardware/application package to customers willing to pay premium for fast access to something their utility has not yet provided		- none – still in development/preorder phase	- high- almost all of their investment has been in product development	- undisclosed for preorder
GOODcoins	- reward participants for being active, energy efficiency and environmental awareness	- customers want to engage in the three areas they are targeting - earning GOODcoins will be sufficient motivation for people to engage in these activities	- more comprehensive engagement tool than other applications – includes more facets of persons life	- engage customer through different parts of life, motivate with changing contests and rewards	- zerofootprint - MellowWalk - Kickbutt - Eyedro green solutions inc. - WaterFrontToronto - Organic Lifestyle - Engaging Newmarket - Manifest - London, Canada	- Unknown – slightly different segment	- Low – more focused on marketing and customer acquisition	- Unknown (revenue model unknown)
Leafully	- Help consumers understand energy habits and make smart choices with usage	- Customers desire more information about energy usage - Consumers want to purchase renewable energy	- Simple application, low cost - Targets customers who are truly interested in environment and highly motivated	- Sell renewable energy as revenue model - Provide customers with overall insights and comparisons to others in US to motivate energy saving	- Green Button	- Unknown	- Low (estimated)	- Unknown (estimated low)

Appendix E – Customer Validation Surveys

Survey 1:

The following questions were asked in a survey designed to validate our hypothesis that a young demographic would be interested in monitoring their energy usage:

1. Are you interested in energy conservation?
2. Do you have a smart meter?
3. Do you use your smart meter?
4. Would you be interested in learning more about the information your smart meter provides?
5. Do you know which appliances use the most energy in your house?
6. Which items do you think use the most energy?
7. Do you know how much energy your house/apartment uses monthly?
8. Are you interested in knowing exactly how much your house/apartment consumes per month?
9. Are you interested in learning about things like how much energy your appliances draw while plugged in but off?
10. Are you interested in learning how efficient your appliances are compared to those available today, and how much energy and money you could save if you upgraded?
11. How much would you be willing to pay for either of the above services (monthly)?
12. Do you own a smartphone?
13. If so, is it an Android, Apple (iOS) or Blackberry?
14. Would you be interested in being able to monitor energy usage on your smart phone?
15. Would you be interested in being able to monitor energy usage on the web?
16. What other features do you think such a mobile application or website should offer?
17. What other aspects of your home are you interested in monitoring on your smartphone/tablet?
18. Please select your age group [from a range of options].
19. What province/state do you live in?

We obtained 85 responses to this survey, of which only two responded negatively to questions 15 and 16, indicating a high level of interest in such an application. The results of the rest of the questions were also positive, and the large majority of the results were obtained from those in the 20-25 age range.

A slightly different survey was given to a younger demographic, the vast majority in the age 17-19 age range, and again the results were promising: 16 of 17 respondents would be interested in monitoring their home's energy usage via a mobile application or website.

Full details of this survey and the results are available upon request.

Survey 2:

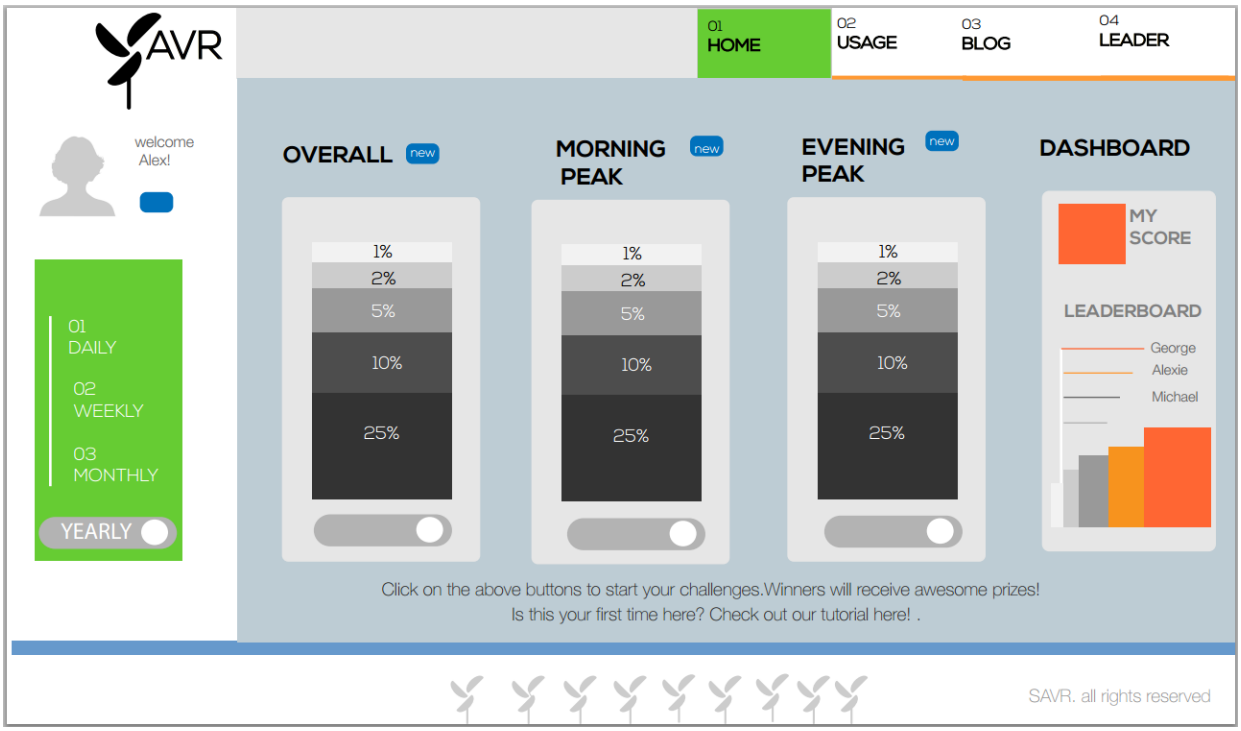
The following questions were posed to 141 private (64) and public (36) high school teachers and university professors (41). Twenty-six of those contacted replied to our survey, which asked the following questions:

1. Does an application like that described in the email sound like something you would be interested in?
   Description: The general idea of our application is that we will receive real-time energy usage information via the smart meters that your students already have installed at their home. We would like to incorporate this information into a game or social setting which will encourage users to reduce their energy consumption, and could be used in conjunction with some of your classes.
2. If so, would you prefer to see the application be web or mobile based?
3. What features, as a teacher, would you be interested in?
   a. Social features between students
   b. Individual challenges for students to pursue
   c. Ability to monitor students' engagement and progress
   d. Ability to compete in challenges as a whole class
   e. Incorporation of curriculum topics
   f. Other:
4. Who are the majority of your students? (Day/boarding/both)
5. Is your school privately or publicly funded?
6. Which level do you teach? (middle/secondary/university)
7. What are the primary subjects you teach?
8. Is any part of your curriculum related to energy usage, environmental conservation or climate change?
9. If so, what related topics does your curriculum include?
10. Do you have funding available for expenditures on teaching technology or teaching enhancements such as this one?
11. What would you be willing to pay for such an application (per year of use)?
12. Would you be interested in using such an application personally?
13. If you're interested in receiving more information as the application is developed, or in being a beta tester, please leave your name and email here.
14. Any other suggestions or thoughts on feasibility or improving the application would be much appreciated.

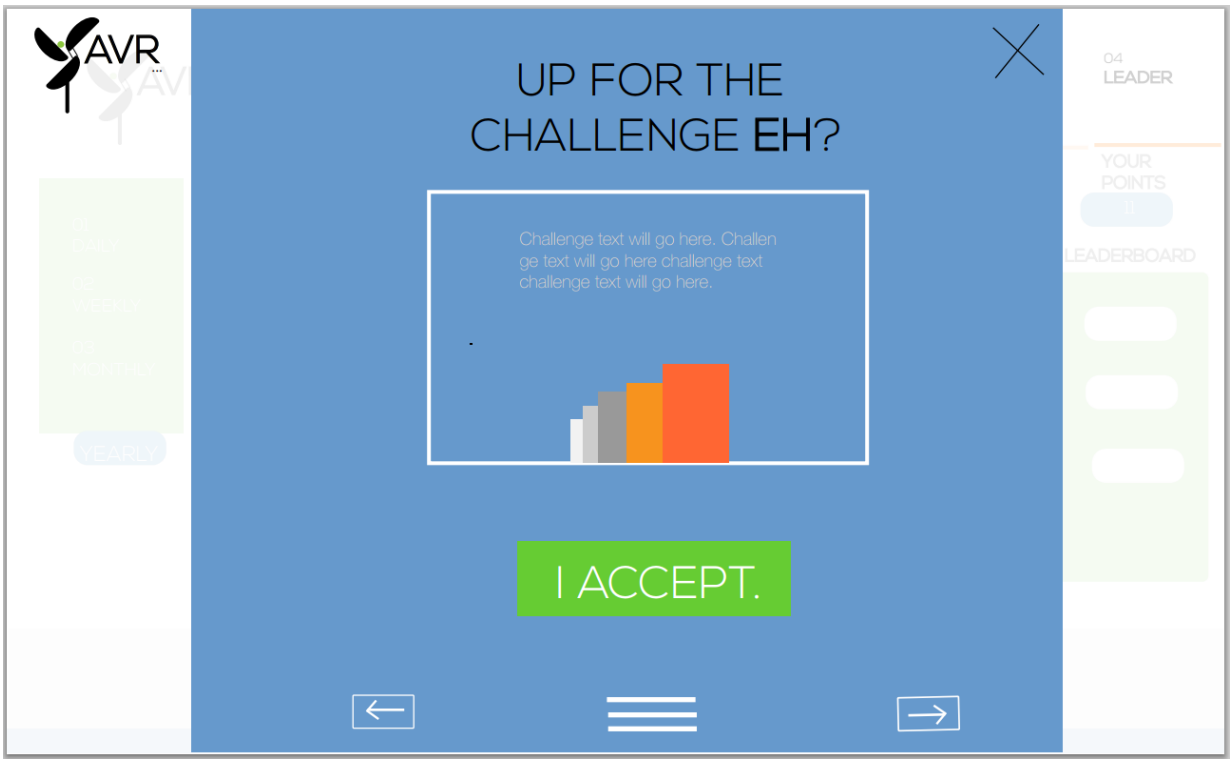
Full details of this survey and the results are available upon request.

Appendix F – Design Mockups

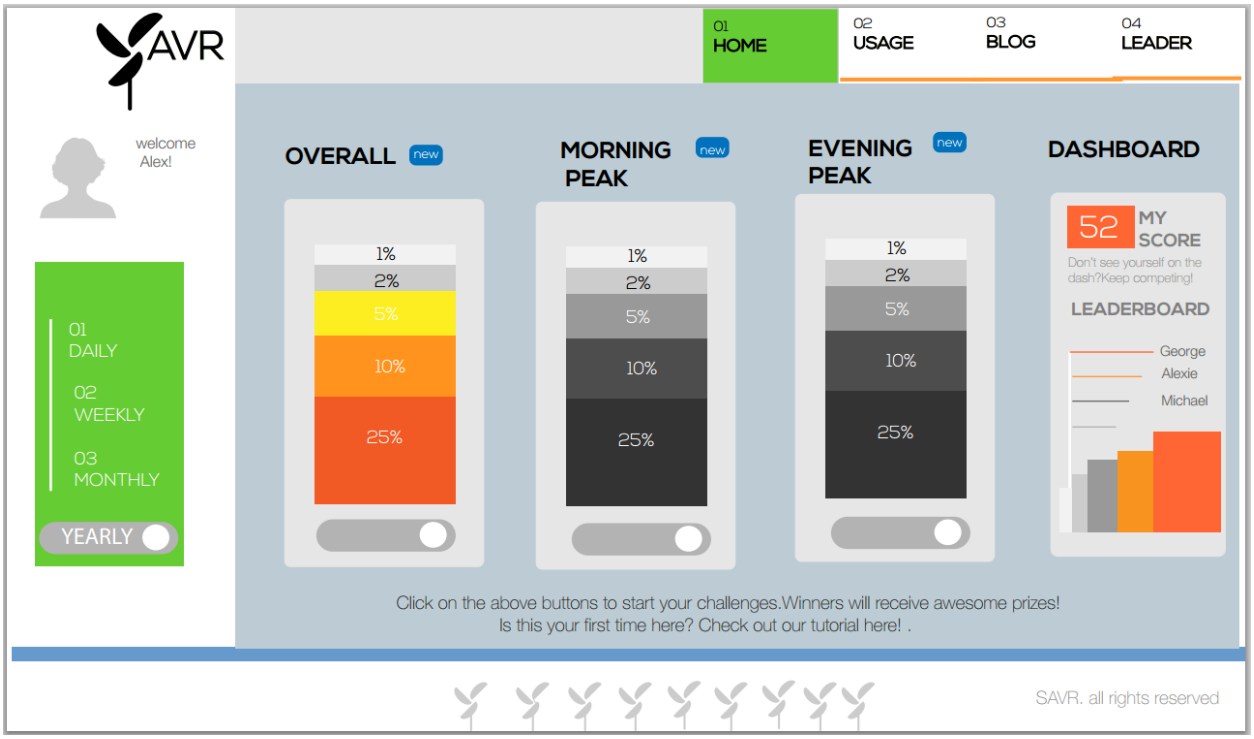
Home page of new user (no challenges completed); each percentage represents a reduction of that percentage in that area:



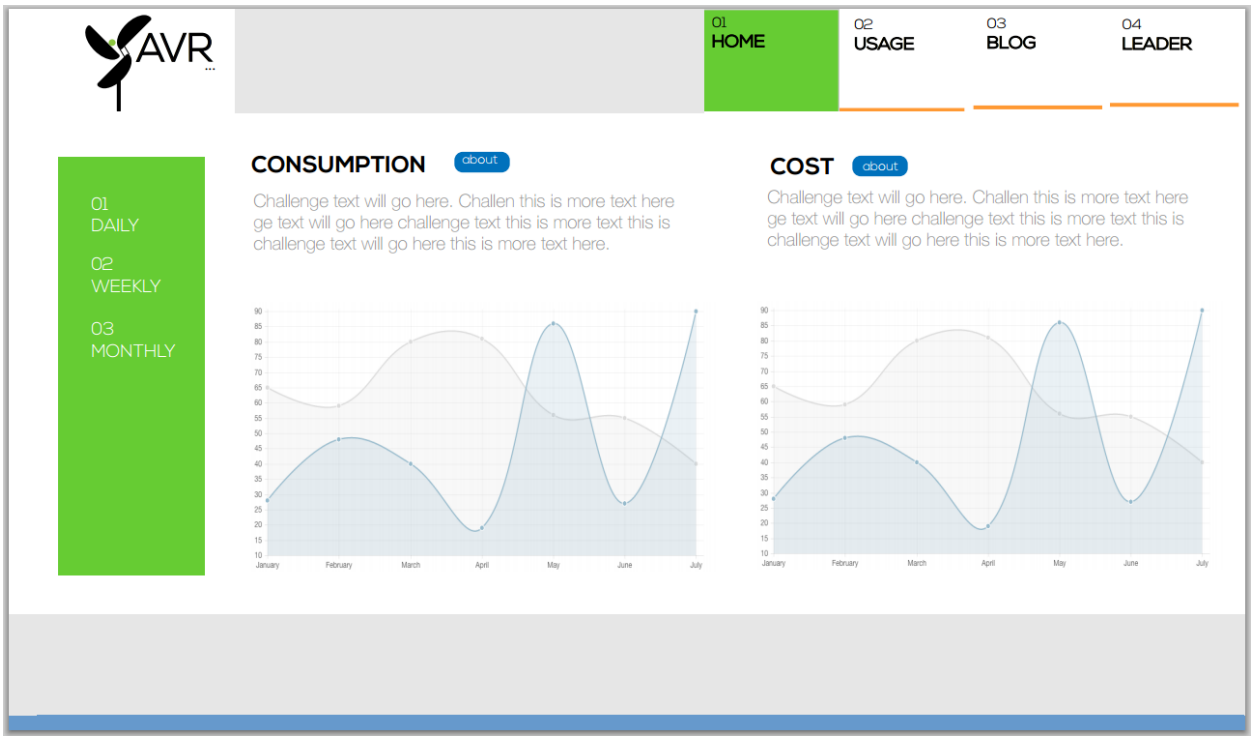
Challenge popup – explains details of challenge:



Home page of user in progress; colored areas are challenges completed:



Usage page, where users can actually view their usage (in $ or kWh) over time:



Appendix G – Calculations

Based on data found here: —. "Renewing Ontario's Electricity Distribution Sector: Putting the Consumer First." December 2012. *Ontario Ministry of Energy.* <http://www.energy.gov.on.ca/en/ldc-panel/>.

Facts:

- Average-sized LDC has 65,394 customers.
- 80 licensed electricity distributors operating in Ontario

Reading from Figure 2 for top 5 utilties:

1. ~1.2m customers
2. ~700,000 customers
3. ~325,000 customers
4. ~300,000 customers
5. ~225,000 customers

Therefore:

Total number of customers in top 5 utilities = ~2.75m.

Also:

$$Total\ \#\ customers = (\#\ licensed\ distributors) * (average\ \#\ customers\ per\ LDC)$$

$$= (80)(65{,}394)$$

$$= 5{,}231{,}520$$

Also:

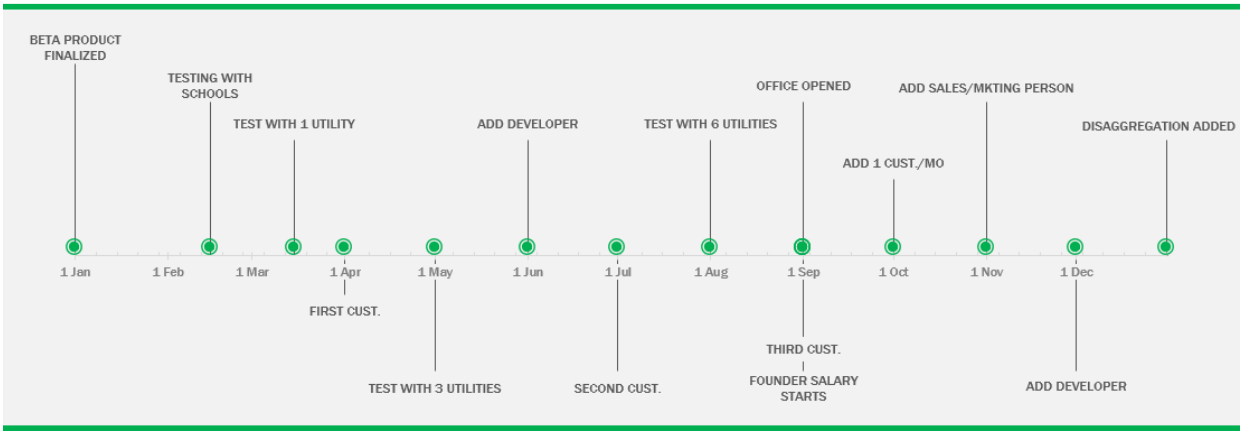
Average number of customers per utility, excluding top five utilities:

$$5.23m - 2.75m = 2.48m$$

$$\frac{2.48m}{75\ remaining\ LDCs} = 33{,}306\ cust/utility$$

Appendix H – 12-Month and 3-Year Timeline

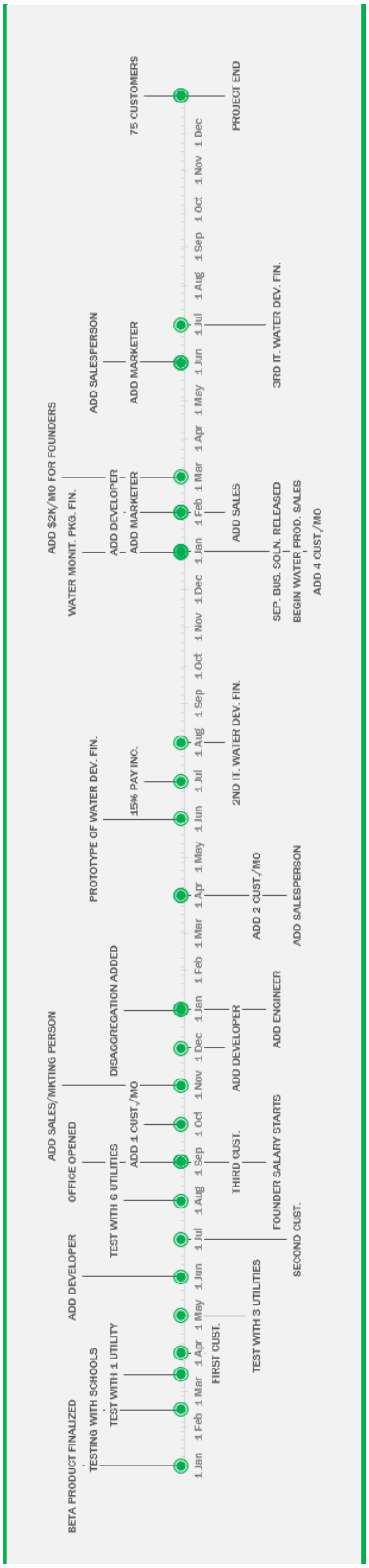
SAVR 12-Month Timeline



PROJECT DETAILS

DATE	MILESTONE
1-Jan	Beta product finalized
15-Feb	Testing with schools
15-Mar	Test with 1 utility
1-Apr	First cust.
1-May	Test with 3 utilities
1-Jun	Add developer
1-Jul	Second cust.
1-Aug	Test with 6 utilities
1-Sep	Third cust.
1-Sep	Office opened
1-Sep	Founder salary starts
1-Oct	Add 1 cust./mo
1-Nov	Add sales/mkting person
1-Dec	Add developer
31-Dec	Disaggregation added

SAVR 3-Year Timeline



PROJECT DETAILS

DATE	MILESTONE
1-Jan	Beta product finalized
15-Feb	Testing with schools
15-Mar	Test with 1 utility
1-Apr	First cust.
1-May	Test with 3 utilities
1-Jun	Add developer
1-Jul	Second cust.
1-Aug	Test with 6 utilities
1-Sep	Third cust.
1-Sep	Office opened
1-Sep	Founder salary starts
1-Oct	Add 1 cust./mo
1-Nov	Add sales/mkting person
1-Dec	Add developer
31-Dec	Disaggregation added
1-Jan	Add engineer
1-Apr	Add salesperson
1-Apr	Add 2 cust./mo
1-Jun	Prototype of water dev. fin.
1-Jul	15% pay inc.
1-Aug	2nd it. water dev. fin.
31-Dec	Water monit. pkg. fin.
1-Jan	Sep. bus. soln. released
1-Jan	Begin water prod. sales
1-Jan	Add 4 cust./mo
1-Feb	Add developer
1-Feb	Add sales
1-Feb	Add marketer
1-Mar	Add $2K/mo for founders
1-Jun	15% pay inc.
1-Jun	Add salesperson
1-Jun	Add marketer
1-Jul	3rd it. water dev. fin.
31-Dec	75 customers
31-Dec	Project End

Appendix I – 12-Month and 3-Year Cash Flow Statements

Please note that we have not included a formal balance sheet or income statement as such.

We believe that the following cash flow statement, along with corresponding explanations for each category are more than sufficient in explaining the cash flow in and out of the company, and thus the income statement and balance sheet are not needed. This is mostly due to the nature of the company: as a software startup, we will have little (if any) capital expenditures and very few fixed assets.

Cash Sales: Monthly fee based upon average number of users per utility divided by 12 months, and multiplied by number of customers at that time.

Loan/other cash inj.: $5000 from previous entrepreneurial competition.

Purchases (website, hosting): small fees for maintaining our public website, emails, etc. that grow with the company expansion.

Purchases (application dev. tools): payment to Heroku, who will host application, which is free initially, but scales with number of users. Value estimated based upon their published pricing scale.

Gross wages (exact withdrawal): value paid to employees, at the rate noted, multiplied by the number of employees of each type at that time. Note it increases during two 15% pay increases as the company grows (noted on timeline).

Payroll expenses: calculated as 16% of wages, based upon Quebec income tax law.

Outside services (consultants): some small fees for marketing consultation prior to first customer acquisition.

Supplies (office & operations): strictly office supplies; high initially to setup office, then scale as company grows.

Advertising: this is the marketing budget. While it may seem small, we aim to utilize utilities and non-profits to multiply our efforts. Scales as company scales, particularly when marketing employees added.

Car, delivery & travel: this is an estimate, based upon the travel required for direct sales and marketing, as well as customer service, and it grows as the company scales, but particularly when marketing or sales personnel are added.

Accounting & legal: these values are based upon the rates charged by Fasken-Martineau's startup program (http://www.fasken.com/en/start-up-program/), then adjusted as company grows.

Rent: based upon small office being established in September, and Montreal real-estate rates; growing as company grows.

Telephone: based upon estimate of VoIP services initially, then expanding as marketing and salespeople require cell phones.

Utilities: based upon typical rates for size of office; begin being paid upon setup of office.

Year 1 Cash Flow

SAVR

Fiscal Year Begins: **Jan-15**

	Pre-Startup EST	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total Item EST
Cash on Hand (beginning of month)		4,860	4,620	3,760	1,000	-404	-1,809	-11,533	-13,702	-16,871	-22,924	-26,922	-32,784	-32,784
CASH RECEIPTS														
Cash Sales	0				2,756	2,756	2,756	5,511	5,511	8,267	11,022	13,778	16,534	
Collections fm CR accounts	0													
Loan/ other cash inj.	5,000													
TOTAL CASH RECEIPTS	5,000	0	0	0	2,756	2,756	2,756	5,511	5,511	8,267	11,022	13,778	16,534	0
Total Cash Available (before cash out)	5,000	4,860	4,620	3,760	3,756	2,351	947	-6,022	-8,191	-8,604	-11,902	-13,144	-16,250	-32,784
CASH PAID OUT														
Purchases (merchandise)														
Purchases (website, hosting)	50	100	100	100	500	500	500	500	1,000	1,000	1,000	1,000	1,000	
Purchases (application dev tools)					500	500	500	500	1,000	1,000	1,000	1,000	1,000	
Gross wages (exact withdrawal)							2,000	2,000	2,000	5,000	5,000	7,000	7,000	
Payroll expenses (taxes, etc.)							320	320	320	800	800	1,120	1,120	
Outside services (consultants)				500	500									
Supplies (office & oper.)							5,000	200	200	500	200	500	500	
Repairs & maintenance														
Advertising				1,000	1,000	1,000	2,000	2,000	2,000	3,000	4,000	5,000	5,000	
Car, delivery & travel	50	100	400	1,000	1,500	2,000	2,000	2,000	2,000	2,000	2,000	3,000	3,000	
Accounting & legal			300	100	100	100	100	100	100	100	100	100	100	
Rent										700	700	700	700	
Telephone	40	40	60	60	60	60	60	60	60	120	120	120	120	
Utilities										100	100	100	100	
Insurance														
Taxes (real estate, etc.)														
Interest														
Other expenses (specify)														
Other (specify)														
Other (specify)														
Miscellaneous														
SUBTOTAL	140	240	860	2,760	4,160	4,160	12,480	7,680	8,680	14,320	15,020	19,640	19,640	0
Loan principal payment														
Capital purchase (specify)														
Other startup costs														
Reserve and/or Escrow														
Owners' Withdrawal														
TOTAL CASH PAID OUT	140	240	860	2,760	4,160	4,160	12,480	7,680	8,680	14,320	15,020	19,640	19,640	0
Cash Position (end of month)	4,860	4,620	3,760	1,000	-404	-1,809	-11,533	-13,702	-16,871	-22,924	-26,922	-32,784	-35,890	-32,784
ESSENTIAL OPERATING DATA (non cash flow information)														
Sales Volume (dollars)					2,756	2,756	2,756	5,511	5,511	8,267	11,022	13,778	16,534	
Accounts Receivable														
Bad Debt (end of month)														
Inventory on hand (eom)														
Accounts Payable (eom)														
Depreciation														

Number of customers:				1	1	1	2	2	3	4	5	6	
Cost per user:	0.5												
Users per utility:	33067												
Cost per month:	2755.58333												
Notes:		Product finalized	Test users	First client	Test users	Add develc	Second clie	Test users	Third client, founders l	Add sales/	Energy disaggregation a		
Founder salary:	1000												
Developer salary:	2000												
Manager/sales salary:	2000												
Engineer salary:	2000												
Office 1 Rent:	700												
Office 2 Rent:	1000												
Office 3 Rent:	1500												

Year 2 Cash Flow

	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total Item EST
Cash on Hand (beginning of month)	-32,784	-40,005	-44,170	-45,580	-49,854	-48,317	-41,269	-32,072	-17,363	2,857	27,587	57,829	57,829
CASH RECEIPTS													
Cash Sales	19,289	22,045	24,800	27,556	33,067	38,578	44,089	49,601	55,112	60,623	66,134	74,401	
Collections fm CR accounts													
Loan/ other cash inj.													
TOTAL CASH RECEIPTS	19,289	22,045	24,800	27,556	33,067	38,578	44,089	49,601	55,112	60,623	66,134	74,401	0
Total Cash Available (before cash out)	-13,495	-17,960	-19,370	-18,024	-16,787	-9,739	2,820	17,529	37,749	63,479	93,721	132,230	57,829
CASH PAID OUT													
Purchases (merchandise)													
Purchases (website, hosting)	1,000	1,000	1,000	1,500	1,500	1,500	2,000	2,000	2,000	2,500	2,500	2,500	
Purchases (application dev tools)	1,000	1,000	1,000	1,500	1,500	1,500	2,000	2,000	2,000	2,500	2,500	2,500	
Gross wages (exact withdrawal)	11,000	11,000	11,000	13,000	13,000	13,000	14,950	14,950	14,950	14,950	14,950	14,950	
Payroll expenses (taxes, etc.)	1,760	1,760	1,760	2,080	2,080	2,080	2,392	2,392	2,392	2,392	2,392	2,392	
Outside services (consultants)													
Supplies (office & oper.)	800	500	500	800	500	500	600	600	600	600	600	600	
Repairs & maintenance													
Advertising	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	
Car, delivery & travel	3,000	3,000	3,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	
Accounting & legal	500	500	500	500	500	500	500	500	500	500	500	500	
Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Telephone	300	300	300	300	300	300	300	300	300	300	300	300	
Utilities	150	150	150	150	150	150	150	150	150	150	150	150	
Insurance													
Taxes (real estate, etc.)													
Interest													
Other expenses (specify)													
Other (specify)													
Other (specify)													
Miscellaneous													
SUBTOTAL	26,510	26,210	26,210	31,830	31,530	31,530	34,892	34,892	34,892	35,892	35,892	35,892	0
Loan principal payment													
Capital purchase (specify)													
Other startup costs													
Reserve and/or Escrow													
Owners' Withdrawal													
TOTAL CASH PAID OUT	26,510	26,210	26,210	31,830	31,530	31,530	34,892	34,892	34,892	35,892	35,892	35,892	0
Cash Position (end of month)	-40,005	-44,170	-45,580	-49,854	-48,317	-41,269	-32,072	-17,363	2,857	27,587	57,829	96,338	57,829
ESSENTIAL OPERATING DATA (non cash flow information)													
Sales Volume (dollars)				27,556	33,067	38,578	44,089	49,601	55,112	60,623	66,134	74,401	
Accounts Receivable													
Bad Debt (end of month)													
Inventory on hand (eom)													
Accounts Payable (eom)													
Depreciation													
Number of customers:	7	8	9	10	12	14	16	18	20	22	24	27	

Year 3 Cash Flow

	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total Item EST
Cash on Hand (beginning of month)	57,829	103,561	143,810	188,122	243,457	308,814	380,047	459,303	549,581	650,882	763,204	886,549	886,549
CASH RECEIPTS													
Cash Sales	85,423	96,445	107,468	118,490	129,512	140,535	151,557	162,579	173,602	184,624	195,646	206,669	
Collections fm CR accounts													
Loan/ other cash inj.													
TOTAL CASH RECEIPTS	85,423	96,445	107,468	118,490	129,512	140,535	151,557	162,579	173,602	184,624	195,646	206,669	0
Total Cash Available (before cash out)	143,253	200,006	251,278	306,612	372,969	449,348	531,604	621,882	723,183	835,506	958,851	1,093,218	886,549
CASH PAID OUT													
Purchases (merchandise)													
Purchases (website, hosting)	3,000	3,000	3,000	3,000	3,500	3,500	5,000	5,000	5,000	5,000	5,000	5,000	
Purchases (application dev tools)	3,000	3,000	3,000	3,000	3,500	3,500	5,000	5,000	5,000	5,000	5,000	5,000	
Gross wages (exact withdrawal)	14,950	21,850	27,850	27,850	27,850	32,027	32,027	32,027	32,027	32,027	32,027	32,027	
Payroll expenses (taxes, etc.)	2,392	3,496	4,456	4,456	4,456	5,124	5,124	5,124	5,124	5,124	5,124	5,124	
Outside services (consultants)													
Supplies (office & oper.)	600	900	900	900	900	1,200	1,200	1,200	1,200	1,200	1,200	1,200	
Repairs & maintenance													
Advertising	8,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	
Car, delivery & travel	5,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	
Accounting & legal	750	750	750	750	750	750	750	750	750	750	750	750	
Rent	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	
Telephone	300	500	500	500	500	500	500	500	500	500	500	500	
Utilities	200	200	200	200	200	200	200	200	200	200	200	200	
Insurance													
Taxes (real estate, etc.)													
Interest													
Other expenses (specify)													
Other (specify)													
Other (specify)													
Miscellaneous													
SUBTOTAL	39,692	56,196	63,155	63,155	64,155	69,301	72,301	72,301	72,301	72,301	72,301	72,301	0
Loan principal payment													
Capital purchase (specify)													
Other startup costs													
Reserve and/or Escrow													
Owners' Withdrawal													
TOTAL CASH PAID OUT	39,692	56,196	63,155	63,155	64,155	69,301	72,301	72,301	72,301	72,301	72,301	72,301	0
Cash Position (end of month)	103,561	143,810	188,122	243,457	308,814	380,047	459,303	549,581	650,882	763,204	886,549	1,020,917	886,549
ESSENTIAL OPERATING DATA (non cash flow information)													
Sales Volume (dollars)				118,490	129,512	140,535	151,557	162,579	173,602	184,624	195,646	206,669	
Accounts Receivable													
Bad Debt (end of month)													
Inventory on hand (eom)													
Accounts Payable (eom)													
Depreciation													
Number of customers:	31	35	39	43	47	51	55	59	63	67	71	75	

Appendix J: Bibliography

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Appendix K – Founder CVs

Graham Mann – Curriculum Vitae

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Montréal, Quebec H2X2B2

+1 (514) 973-0616
graham.mann@mail.mcgill.ca
http://www.linkedin.com/in/manngraham

Born: October 14, 1992
Citizenship: Canadian and British

Education

2010 – 2014 **Bachelor of Engineering – Mechanical**
McGill University, Montreal, Quebec
Prestige Scholar – Greville-Smith Scholarship, 3.90/4.00 GPA
Dean's Honour List

2007 - 2009 **International Baccalaureate Diploma**
Park View Education Centre, Bridgewater, Nova Scotia. Ranked 1st in graduating class.

Academic Honours & Awards

2014 Privateer Graduate Scholarship Award, University of New Orleans (*Declined*, $12,490)
2010 - 2014 Greville-Smith Scholarship: one of approximately 10 scholarships awarded per year, part of the Prestige Scholarships at McGill University (Montreal, $10,000/yr x 4 years)
2011 - Present Member, Golden Key International Honour Society
2010 Chancellor's Scholarship, Queen's University (*Declined*, $9,000/yr x 4 years)
2010 Governor-General Medal, Park View Education Centre: awarded to highest average in graduating class (Bridgewater)
2010 University of Toronto Book Award (Toronto)
2010 Park View International Baccalaureate Society Certificate Scholarship (Bridgewater, $500)
2008 Silver Medal – Engineering, Canada-Wide Science Fair (Ottawa, $700)
2008 Bronze Medal – Automotive, Canada-Wide Science Fair (Ottawa, $300)
2008 Entrance Scholarship, Western University (*Declined*, $2500)

Extracurricular Honours & Awards

2014 Best in Camp, Canadian Coast Guard Inshore Rescue (Halifax)
2014 Nicol Entrepreneurial Award National Finalist (Ottawa)
2014 Nicol Entrepreneurial Award, McGill University (Montreal, $5000)
2013 Sail Canada Recreation Event of the Year (Kingston)
2013 Nova Scotia Yachting Association Community Coach of the Year (Halifax)
2013 Sail Canada Sailor of the Month [June] (Kingston)
2013 Lunenburg Yacht Club Volunteer of the Year (Lunenburg)
2013 South Shore Men's Soccer League Champions (Lunenburg)
2012 Duke of Edinburgh Gold Award: awarded to youth who complete requirements in the areas of activity, service, skill, community project and adventurous journey (Halifax)
2011 Best Rookie in Training, Canadian Coast Guard Inshore Rescue (Halifax)
2011 South Shore Men's Soccer League 2nd Place (Bridgewater)
2010 Ron O'Flaherty Scholar-Athlete Award (Halifax, $750)
2010 Hockey Nova Scotia Colin B. McGillvray Academic-Athletic Award (Halifax, $1000)

2010	Park View Scholar-Athlete Award (Bridgewater, 2010)
2010	Nova Scotia Provincial Soccer U-18 'B' League Champions (Kentville)
2009 - 2010	Captain of South Shore Mustangs in Nova Scotia Major Midget Hockey League (Bridgewater)
2009	Provincial High School Track-and-Field Champion, Pole Vault (Dartmouth)
2009	Provincial High School Division 1 Soccer Runner-Up (Bridgewater)
2008, 2009	Provincial High School Badminton Champion, Men's Doubles

Work Experience

2013 – Present *Founder of Second Pen Sailing*
Sailing instructional video production and retail company registered in Nova Scotia. Supervised all aspects of business organization and registration, as well as production and marketing of videos, and investigation of new product lines.

5/2014 - 9/2014 *Canadian Coast Guard – Inshore Rescue Boat Coxswain*
Responsible for crew of three covering ~100nm coastline in Nova Scotia for all search and rescue operations. Often required coordination with other government resources and presentations to public on our services and boating safety.

5/2013 - 9/2013 *Canadian Coast Guard – Inshore Rescue Boat Coxswain*

5/2012 - 9/2012 *Canadian Coast Guard – Inshore Rescue Boat Coxswain*

5/2011 - 9/2011 *Canadian Coast Guard – Inshore Rescue Boat Deckhand*

6/2010 - 9/2010 *Sailing Instructor at Lunenburg Yacht Club*

6/2009 - 9/2009 *Sailing Instructor at Lunenburg Yacht Club*

Research Experience

9/2007 - 5/2008 Developed novel device which recovered waste heat from the cooling system of an automobile engine and converted to useful electricity using thermoelectric technology. Winner of Bronze and Silver Medals at Canada-Wide Science Fair (Ottawa).

9/2005 - 5/2006 Developed novel device which passively enhanced cell phone signal by concentrating signal strength in one direction, to be used in emergency situations with little or no cell service. Winner of Silver Medal at Canada-Wide Science Fair (Saguenay).

9/2004 - 5/2005 Tested various models of sunglasses for UV filtering and protection. Won spot at Canada-Wide Science Fair & Bell Canada Communication Award (Vancouver, $1500).

Extracurricular Activities

2012 - Present *Founder of Non-Profit Organization 'Sail All'*
Organization seeks to promote and provide opportunities in sailing for youth in Nova Scotia. Has provided free sailing opportunities and lessons for over 250 youth, and has plans to expand in 2014.

2010 - 2014 *Member of McGill SAE Baja Team*
Team builds vehicle from scratch to SAE regulations and competes in SAE Baja events around North America.

2007 - Present *Independent Remote-Control Sailboat Modeling Project*
Project seeks to develop scale prototype of state-of-the-art Open 60 sailboat using modern technologies and materials. Project is nearing completion and has included collaboration with local aerospace and sail making companies, and has used Solidworks Simulation in design.

Other Activities & Qualifications

2010 - 2014 Intramural hockey and soccer player at McGill

2012	PADI Open Water Diver certification
2011	Rigid-Hull Inflatable Operator Training (RHIOT) certification
2011	Small Vessel Operator Proficiency (SVOP) certification
2009 - Present	Sail Canada CANSail 1,2,3,4 teaching qualifications
2009 - Present	NCCP 1 & 2 Coaching certification
2008	Sail Canada Silver Level sailing certification
2002 - Present	Competitive sailor in both dinghy and keelboat classes
1999 - Present	Recreational golfer, sailor, windsurfer

IT & Programming Skills

Systems languages: C
Data analysis: Mathematica, MATLAB
Video editing: Cyberlink Powerdirector
CAD Packages: Solidworks, Solidworks Simulation

Languages

English (native speaker)
French (intermediate)

Mr. Abhishek Gupta

abhishek.gupta2@mail.mcgill.ca ; atg.abhishek@gmail.com ; http://www.linkedin.com/in/abhishekguptamcgill

Career Objectives

- Creative problem-solver and fast learner with interdisciplinary interests looking to pursue a career in the area where technology and business intersect. Excellent leadership and communication skills with a keen interest in expanding intellectual horizons.

Education

– B.Sc. (U3) – **Computer Science** with minor in Economics at McGill University, Montreal, Canada (**CGPA – 3.86/4.0**) **May 2015 (expected graduation)** , Hugh Brock Scholarship (Prestige Scholar) **($10,000/year**), Dean's Honour List, Stuart Dunn Memorial Scholarship **($2787),** George J McManus Scholarship ($225), Entrance Scholarship **($3,000)**

Languages

- English, Hindi and French

Computer Skills

- Java; Exposure to Scala, C, SQL, HTML, CSS, Ruby, SML, Android SDK, Python, Adobe Illustrator, Eclipse, Emacs, JavaScript, Linux systems, Bash scripting, C++, TCP, HTTP, Git, Agile, Wireshark

Technical Projects

-

- **Software Developer, Ericsson** – Worked on the Authentication Federation Gateway solution (implementing test cases, automating test system builds, interpreting requirements from the 3GPP GBA standard) + OpenID Connect solution – implementing core functionality in C++, testing the solution using FitNesse, interpreting the requirements from standard document and linking it with RFC 6749, 6750 (OAuth 2.0) – used Java, C++, Bash – understanding of TCP, HTTP
- **Co-founder of SAVR,** energy monitoring app (savrsystems.com) – awarded $5000 by McGill Dobson Center as the top prize in the Nicol Competition for entrepreneurs, Top 6 out of 17 universities in Canada at National Nicol Competition 2014 – back-end parsing of data being done in Ruby, front-end being built using Javascript and associated frameworks
- **Co-founder** of Stumbl, allows users to share photos and show off exciting locations they've visited using photo geolocation data- used Android SDK – Java and XML
- Participated in HackMIT, a 30 hour hackathon hosted by MIT and Y-Hacks, hackathon hosted by Yale University.
- Built simple Trade simulator in Ruby and web scraper to create a Pokedex database in Ruby and Android SDK as part of team
- **5th in Canada** and **39th in World** in IEEExtreme 7.0 2013 (24 hour programming competition) out of 7500 participants (hosted by IEEE)
- **1st in Canada and 27th in World** in IEEExtreme 8.0 2014 (24 hour programming competition) hosted by IEEE.

Leadership Experience

-

• Editor-in-Chief, WeBeg2Differ	2014-Present
• Managing Editor, code(love)	2014-Present
• Co-founder, SAVR	2014-Present
• Director Curriculum Integration, Team Montreal Solar Decathlon (netMTL)	2013-16
• Competitive Programming Officer, IEEE McGill	2014-Present
• Science Editor, Graphite Publication	2013-Present
• Director, Tribune Publications Society	2013-14
• Captain, University Squash Club McGill	2012-Present
• Social Media Coordinator, Startup Grind Montreal	2013-Present
• Board Member, Committee on Student Standing	2013-Present
• Author, TheNextWeb	2014-Present
• Advisory Board Member, Scholarships and Student Aid	2013-Present
• Junior Journalist, WeBeg2Differ	2014
• VP Communications, MES (McGill Entrepreneurs Society)	2013-14
• Co-founder and Head Coordinator, HackMcGill	2013-14
• Coordinator, Start-up Weekend Montreal	2013
• Coordinator, 'Be a Computer Scientist for a Week'	2013
• VP Communications, FUSS (Freshman Undergraduate Science Society)	2012-13
• Academics Portfolio, First Year Council	2012-13
• Member, EUS (Engineering Undergraduate Society) Website Committee	2012-Present

Publications

Research Articles in the Cornell Economics Society
Spring 2013 edition of 'The Visible Hand' - Title – How the Net is Changing the Economics of Implementing Ideas
Fall 2013 edition of 'The Visible Hand' - Title - Challenging the Economics of Transactions: Bitcoin - A Network Regulated Crypto-currency
http://orgsync.rso.cornell.edu/org/ces/Publication

Contributor, Sci-Tech, McGill Tribune Links to my work - http://mcgilltribune.com/?s=abhishek+gupta

Managing Editor, code(love) Links to my work - http://www.code-love.com/author/abhishekg/

Author, TheNextWeb Links to my work - http://thenextweb.com/author/abhishekgupta/

Awards and Distinctions

- **Euclid Math Medal**, University of Waterloo, Canada
- **GMAT** – 710/800
- SAT 1 – 2210/2400, SAT 2 – 2400/2400
- AP Chemistry – 5/5, AP Calculus BC – 5/5, AP Physics B – 5/5
- All India Senior School Certification Examination (92.6%)
- **KVPY fellowship (awarded by Government of India)**, Honors **Gold Medal**, Scholars **Gold Medal**, Sarah Abidi Memorial Award – Best All Rounder
- All India Secondary School Examination (93.6%)
- **NTSE Scholarship (awarded by Government of India),** Honors All Rounder Award (6 years in a row), Scholar Award (6 years in a row), Scholar Blazer, Honors Blazer
- Secured **National Rank 1** in National Cyber Olympiad (2008) conducted by Science Olympiad Foundation (SOF).
- Awarded Certificate of Merit for being placed in **National Top 1%** in the National Standard Examination in Junior Science conducted by Indian association of Physics Teachers. (2008)
- Secured **National Rank 4** in the FIITJEE Talent Reward Exam (2007) conducted by FIITJEE.
- Secured **National Rank 15** in the National Cyber Olympiad (2007) conducted by SOF.
- Secured **National Rank 15** in Unified Cyber Olympiad (2008) conducted by Unified Council.
- Secured **National Rank 22** in International Maths Olympiad (2008) conducted by SOF.
- Secured **Runner-up** position at the National level in 'Sawaal India Ka' TV Show aired on NDTV (a prominent news channel in India). It was a Technology quiz show which invited participation of about 15000 candidates from across the nation.
- Regional Runner-up in 2008, **Regional Champion** and National 2nd Runner-up in 2009 and Regional Runner-up in 2010 at TCS IT WIZ (national level IT quiz inviting participation of over 30000 students conducted by TCS, an IT giant in India)
- Featured in HT School Times dated July 25, 2005 as a **Student Achiever** (HT School Times is daily newspaper for students).
- Featured in NOIDA Plus dated March 25, 2005 for securing **National Rank 1** in the 4th National Cyber Olympiad (NOIDA Plus is the city supplement of Times of India).
- Selected in **All India Top 10** in Pogo Amazing Kids Awards 2005 in the '**Amazing Kid GENIUS**' category.
- **Bournvita Confidence Champion** was conducted by Cadbury in collaboration with the Derek O' Brien and Associates. He was selected for the interview in which the top students from India were invited.
- Featured in August 2008 issue of Hello NOIDA, a magazine from NOIDA.

Activities and Interests

Squash - McGill USC (University Squash Club) **Squash Team – Captain** (2012-Present)**, Champion** in Quebec Squash Jesters Single Tournament 2013**, Semi-finalist** in Montreal Squash League 2012-13, **Semi-finalist** in Montreal Squash League 2013-14

Music - Play guitar, piano and mandolin: Classical Indian music compositions –

http://www.youtube.com/watch?v=HT4SZT4migo ; http://www.youtube.com/watch?v=WQzel1x-148

Played in School Orchestra for 6 years, Best Solo Instrumentalist (Indian Classical) for 3 consecutive years-DPS NOIDA, Performed at the Poorva Sanskritik Kendra, Delhi, playing the guitar as part of an orchestra, Secured 1st position in the Inter-School Solo Instrumental (Indian Classical) competition held at DPS, R K Puram, Received Certificate of Merit for outstanding performance in Instrumental Music

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EDUCATION

MCGILL UNIVERSITY
Montreal, QC
Computer Science & Economics 2015

Software Systems
Algorithms I & II
Web Design UX | UI
Economic Development I & II
Advanced Statistics

ACADEMIC PROJECTS

SAVR SYSTEMS
Web Developer Summer 2014

• Engineered and implemented interactive features and best practice coding in HTML5, CSS and Javascript for venture-capital backed web application.

MCGILL UNIVERSITY
Wordpress Contractor Fall 2014

•Maintained 6 Wordpress sites by updating plugins, customizing CSS and revising content to meet the needs of a non-profit organization.

SKILLS

English | French | Spanish - fluent
German | Italian - working knowledge
FRONTEND HTML5 | CSS3 | Javascript
Adobe Design Suite | Axure | Bootstrap
Wordpress
PROGRAMMING Java | C/C++ | Python
ENVIRONMENTS Windows | Linux
Unix scripting & Bash | Visio | Excel VBA

PROFESSIONAL EXPERIENCE

GENERAL ELECTRIC (GE) EEDP
Nationwide Canada Incoming 2015

• Incoming participant of GE's Edison Engineering Leadership, Development and Rotational Program at GE Lighting and Renewable Resources (2015).

PRATT & WHITNEY WEB ANALYST
Montreal, QC Fall Semester 2014

• Developed protocol for software testing (HQCA) in new environments by ensuring user requirements, functionality and full integration were met.
• Analyzed industry web portals and conducted business case reviews to assess the future impacts on customer service as well as ePortal adoption within the organization.
• Accelerated the standardization of 30,000 data-elements through development and application of custom Excel scripts.

TEKDOC IT INTERN
Boston, MA Summer 2013, 2014

• Coordinated the acquisition of new and existing clients, deepening relationships by managing the marketing of SAAS and Cloud Computing contracts
•Restructured company branding and identity, with the objective of increasing organic Search Engine Optimization (SEO) feeds and google analytics
www.tekdocsolutions.com/about-us

EPLOYMENT INC. STRATEGY & FISCAL INTERN
Montreal, QC Winter 2013

• Assembled and analyzed sales and business data, including social-media campaigns, delivered data through quarterly analysis reports to upper management.
• Other responsibilities: execution of financial tasks,regression testing, aggregating data and profit projections.