THE LEAN START-UP: AN EXPLANATION OF THE CHALLENGES OF DEVELOPING A SOCIAL MEDIA APP BUSINESS MODEL THROUGH PROTOTYPING

Research in Progress

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Abstract

The "Lean Start-up" Methodology challenges preconceived notions of business model rigidity which have been associated with establishing "brick and mortar" firms, enabling entrepreneurs to adopt a prototyping approach to business model development. This research in progress paper explores the challenges inherent in developing the business model for a social media app; "HuddleMe" through the process of an Action-Case Study Research Method. The study concludes that the challenges associated with developing new IT-enabled business models have not declined, but instead manifest themselves in different forms. Specifically, the key challenges IT-enabled start-up ventures encounter include; (1) understanding the IT fashion and developing an app which is concordant with IT fashion, (2) demonstrating the ability of the app to be "monetised" and (3) mitigating the uncertainty of potential investors through effective communication. From these challenges the research identifies three practical recommendations that practitioners can utilise to overcome the corresponding challenge; (1) Leverage current trends in IT Fashion when developing an IT-enabled product, (2) Use a proof of principle to secure buy-in an initial area before expanding and (3) Reduce uncertainty through corporate story telling. Further insights and recommendations will be determined as the app is developed and released to market.

Keywords: IT Entrepreneurship, Business Models, Social Media, Challenges

1 Introduction

1.1 Traditional business model development

The "Lean Start-up" is an emerging methodology that has been created to overcome the challenges entrepreneurs experience in creating new ventures, enabling entrepreneurs to challenge incumbents through business models developed with minimal investment (Clemons et al., 2013).Traditionally, business development has been sequential and structured, starting with the development of a business plan, the pitching of the business plan to investors and the execution of the business plan (Blank, 2013). This approach to business development has achieved limited success, especially for Information Technology enabled start-ups, with only 24.78% of new IT-enabled ventures surviving the seven year period from 1998 to 2005, the lowest of any type of new venture (Damodaran, 2009, Maurya, 2012).

In the past, it has been acknowledged that the growth of start-up businesses has been restrained by five factors: the high cost of obtaining the "first customer", the long technology development cycle, the limited number of people with the appetite to become an entrepreneur, the structure of the venture capital industry which favoured investing large sums of money in relatively few companies and the limited number of hubs which had expertise in engaging in entrepreneurial activities (Blank, 2013). The

result was that a significant number of business plans did not reflect actual customer needs, many business plans were developed in isolation and did not reflect the reality of the constantly changing business environment and there was a lack of comprehension of the difference between start-up and established firms (Blank, 2013). Many start-up firms were required to spend scarce resources developing master business plans; start-up firms should be developing a business model while established firms should focus on testing a business model (Blank, 2013, Nobel, 2012).

1.2   The Lean IT-enabled start-up

This agile approach to business development, coined the "Lean Start-up" Methodology (Ries, 2011), challenges the existing business model development methodology and argues that business model development can occur iteratively and incrementally. Specifically, the "Lean Start-up" Methodology embodies three concepts, with the first tenet being that the entrepreneur commences the venture with the understanding that they have a set of "untested hypotheses", using the business model canvas to document these hypotheses (Österwalder and Pigneur, 2010). Secondly, the methodology articulates that these hypotheses can only be validated by interacting with the participants in the market, such as customers and suppliers, through the creation of "minimum viable factors", which represent the smallest subset of features or activities required to validate the assumptions. The business plan evolves rapidly in response to the feedback with the entrepreneurs either "pivoting" the business model by changing some elements, abandoning the start-up or preserving the business model for the next test of assumptions (Eisenmann et al., 2012, Maurya, 2012). Finally, it is critical that the entrepreneurs use agile development to develop the product incrementally and iteratively (Blank, 2013, Nobel, 2012).

The concept of the "Lean Start-up" is well suited to the emerging and increasingly diverse types of businesses present in the rapidly changing business environment, particularly with respect to the IT-enabled start-up industry (Maurya, 2012, Ries, 2011). The "Lean Start-up" is important for IT-enabled start-up ventures as it provides the potential for the development of a sound business model and rapid and iterative development of the product; thus reducing the time to market and thereby overcoming the issues associated with traditional business development. The increased adoption of IT by customers and business has enabled entrepreneurs to create IT start-up ventures, where IT is the product, as well as IT-enabled start-up ventures, where IT enables a new product or business model to be created that would not have been able to developed without the facilitating IT. The latter is the focus of this paper, where IT has enabled businesses to develop a new business model or product, and by leveraging the increasingly networked society and the value creation mechanisms associated with e-business initiatives such as ubiquity, interactivity, personalisation, efficiency and lock in (Amit and Zott, 2001, Laudon and Laudon, 2004); challenging the incumbents or developing a new market (Jolly et al., 1992).

1.3   Research focus and rationale

It has been argued that the "Lean Start-up" Methodology is the panacea to the issues surrounding traditional business development, enabling ventures to eliminate uncertainty by "working smarter and not harder", thus delivering a successful product to market rapidly (Ries, 2014). However, while the concept of the "Lean Start-up" Methodology is well explored (Blank, 2013, Ries, 2011), Communities of Practice indicate that the use and effectiveness of it in practice is not well understood (Childs, 2014). There are some academics and practitioners who acknowledge that there are challenges related with the limited amount of planning and the lack of a formal management approach associated with methodologies such as the "Lean Start-up" Methodology (Brinckmann et al., 2010, Loch et al., 2008). The "Lean Start-up" Methodology also contrasts with previously held notions that developing a business is something that takes time and focus, rather than being able to switch between ideas until the right one is developed (McGinn, 2012). Additionally, it has been asserted that many SMEs find it difficult to scale effectively and it is unclear whether the "Lean Start-up" Methodology provides a solution to this issue, commonly known as the "chicken and egg" problem associated with two sided business models

(Sokoler, 2011). Ries (2011) acknowledges that numerous start-up ventures fail but argues that the "Lean Start-up" Methodology still does consist of a management approach built on the concept of "build, measure and learn" and that adopting this approach reduces the risk of start-up ventures failing. There is also practitioner research which identifies that the prevalence and adoption of technology has actually made scaling of the business more effective and less risky than previously used scaling initiatives (EIU, 2013). Thus, this research aims to investigate the challenges associated with the development of an IT-enabled business model using the "Lean Start-up" Methodology.

This paper explores the use of the "Lean Start-up" Methodology for IT-enabled start-up ventures. IT is critical to the conception of disruptive innovations (Christensen and Overdorf, 2000), with social media currently creating significant challenges and changes for incumbents and opportunities for new ventures (Clemons et al., 2013, Qualman, 2012). While there is strong growth in the number of ventures based on disruptions in the market caused by IT, a significant number of these ventures encounter substantial challenges. Also, there has been scant attention paid to the nexus between IT and entrepreneurship and specifically the challenges that entrepreneurs face in the creation of IT-enabled ventures (Del Giudice and Straub, 2011). Through the process of an Action-Case Study Research Method, this paper aims to identify the challenges that are inherent in the use of the "Lean Start-up" Methodology, specifically answering the question; What are the challenges associated with the development of an IT-enabled business model using the "Lean Start-up" Methodology in the case of "HuddleMe"? The research also provides recommendations which enable entrepreneurs to develop an app which is concordant with IT Fashion, demonstrate the ability of the application to be monetised and mitigate the uncertainty of potential investors through effective communication. Specifically, entrepreneurs can (1) Leverage current trends in IT Fashion when developing an IT-enabled product, (2) Use a proof of principle to secure buy-in and (3) Reduce uncertainty through corporate story telling.

The first section introduces the research topic and presents an overview of the literature. The second section discusses the research methodology adopted to explore the challenges in the creation of the IT-enabled start-up venture. The findings are then presented while the final section concludes.

2 Research Methodology and Context

2.1 Research method

The research objective to explore the challenges of developing a business model using the "Lean Start-up" Methodology was investigated through the process of an Action-Case Study Research Method which focused on iteratively diagnosing problems and designing interventions in the case of a social media start-up venture. Canonical Action Research specifies a spiral of five discrete stages that occur in several iterations; diagnosis (identifying or defining a problem), action planning (considering alternative courses of action), action taking (selecting and executing a course of action), evaluation (studying the consequences of the action) and specifying learning (identifying general learning) (Davison et al., 2012), enabling the researcher to be involved in these iterations through collaborative experiments of change and reflecting on the results of these experiments (Mårtensson and Lee, 2004). The "Lean Start-up" Methodology embodies these concepts through the iterations of "build, learn and measure"; operationalising the five discrete steps identified in Canonical Action Research. The research adopted a practice premise style, constructed arguments grounded in evidence from IS practice, used an inductive inference style where the arguments were developed primarily from the actions of problem solving and utilised the case study to make theoretical contributions to IS theory (Mathiassen et al., 2012).

Data was obtained from the CEO of HuddleMe Ventures which included meeting notes and minutes from 35 meetings; comprised of 12 meetings between the founders, 2 focus groups with potential customers and the remainder consisted of meetings between the founders and potential customers, suppliers, mentors, judges, academics and other entrepreneurs. Supporting data was also obtained in the form of 504 emails sent and received by the CEO and 97 completed responses from a customer survey

conducted by the founders. The generic presentation structure of action research results (Mathiassen et al., 2012) was adapted to reflect the categories of the "Lean Start-up" Methodology of "build, measure and learn". Conducting Action Research in the context of a case study enabled the researchers to adopt a "problem solving dominant approach", where the problem solving cycle generated the knowledge required for the research cycle to create the research outcome (Chiasson et al., 2009); assisting in overcoming the challenges associated with Canonical Action Research by the consideration of the complementary nature of focal (the theoretical basis for action orientated change) and instrumental theory (which is used to explain the phenomena) (Davison et al., 2012).

2.2   Overview of the venture

HuddleMe Ventures was formed with the vision of better connecting people by enabling them to more effectively communicate and interact, empowering them to form deeper and more meaningful relationships. The founders, being the CEO, COO and CIO, recognised that there is a disconnect between the missions of social media sites such as Facebook and Twitter, which aim to better connect the world and the outcomes delivered to society through the adoption and use of these platforms. Specifically, despite the rise and use of social media, loneliness has doubled with 40% of adults acknowledging that they are lonely, increasing from 20% in the 1980s (KNIPR, 2010) and a study of Facebook users concluding that the amount of time spent on the social network is inversely proportional to how happy users are throughout the day (Kross et al., 2013). The founders conceptualised the problem as: "Currently, there are so many communication channels (Facebook, Twitter, email and SMS) and so many connections, contacts and friends; however, there is no integrated approach to identifying and staying in touch with the people who matter to you in your personal, social and professional life." The original solution was conceptualised as a web-based portal which integrated all the social media communication channels into a single thread and enabled the user and the system to conduct predictive analysis, through the use of Business Intelligence techniques, of the users' social media interactions to identify the relationships and conversations and other items that matter in the user's life.

The founders entered the idea into a business incubator program located in Australia. The program consisted of a two round competition over three months where entrants developed and then pitched their ideas, with the successful entrants, including HuddleMe Ventures, proceeding through to the final round. During the incubator program, HuddleMe Ventures was allocated a mentor to assist in developing the business, as well as preparing for the pitches in the first and final rounds. As a result of feedback provided by the mentor, judges, researchers, potential customers and suppliers throughout the competition, the original idea significantly changed. The business idea evolved into "HuddleMe", a "social meeting" app that converts your virtual friends back into real world relationships with the added benefit of saving money by redeeming coupons provided by the app." The solution consists of; (1) an app which enables users to login with their Facebook credentials and join their social media friends in redeeming a coupon together at a set location (set by the business) and time (set by the friends), (2) a back-end website where merchants interact with a self-service back-end platform for uploading coupons and (3) a website landing page containing general information about the app.

3   Results and analysis

The "Lean Start-up" Methodology which embodies the stages present in Canonical Action Research through the iterations of "build, learn and measure", was used to investigate the case study and explore the challenges the start-up venture encountered (Davison et al., 2012, Ries, 2011). The results of the changes in the business model through the three iterations of the "Lean Start-up" Methodology are presented below, examining their impact on the relevant segments of Osterwalder's Business Model Canvas and the respective theoretical contribution.

3.1 Iteration 1: Developing the product (offer and customer segments)

Build: The initial business model was centred on the development of a portal which integrated all the social media communication channels (Facebook, Twitter, email and SMS) into one central database, identified matches between these various contacts, connections and friends and displayed all the inter-actions (Facebook messages, Tweets, emails and SMSs) in one single interface. The portal enabled users to identify important and influential contacts by calculating an influence score, displaying and visualising the data in interactive ways and creating suggestions of times and events that enabled users to maintain contact with each other.

Measure: The idea was pitched to the mentors for the business incubator competition who provided the following evaluation of the idea (Table 1). The mentor highlighted that the current idea did not have a strong value proposition which impacted on the strength of the other components of the business model.

Item	Mentor Description	Mentor Evaluation
1. Problem/ Opportunity	*"There is a problem or opportunity you have identified that is real"*	*"I am not yet convinced that there is a real need – missing a message is unlikely as our smartphones buzz every time there's a new notification for almost every app we own. I agree that people may slip out of our network, but how do you determine if that's a good thing, a bad thing, or just a fact of life?"*
2. Solution	*"You have developed an elegant solution to that problem"*	*"Your solution is a concept at this stage"*
3. Market size	*"The market is large and you have been able to secure commitments from a cornerstone customer that confirm your approach is valid"*	*"I agree that the potential market is large – but only if I can be convinced of point 1; Proof of concept is crucial (cornerstone customer)"*
4. Monetisation	*"You are going to be able to make money from executing that solution which will give investors a great financial return"*	*"I am not convinced about monetisation so far. Advertising revenue will only occur at a critical mass; Why will a consumer pay for the premium product? (see point 1)"*

Table 1.   Mentor feedback on initial business idea

Learn: Consideration of the pivoting technique presented HuddleMe Ventures with three options; changing some elements, changing the entire business model or abandoning the start-up. Following a discussion of the three options, the founders decided that a new business needed to be created which focused on the value proposition as the core element of the business. Also considering the theory of IT Fashion (Wang, 2010), the founders determined that the idea needed to be built on the current interest in mobile application development and the theme of a networked society.

Re-Build: A number of alternative business ideas were evaluated using the criteria specified by the mentor above. The result was a new business idea which embodied the original vision of HuddleMe Ventures; "better connecting people by enabling them to more effectively communicate and interact, empowering them to form deeper and more meaningful relationships", but the means by which this vision was achieved had "pivoted". The idea of a mobile app called "HuddleMe" was developed which focused on a two-sided business model which delivered the following value propositions for consumers and businesses:

- Value propositions for consumers:
  - Spending quality time with friends and building real world relationships: Consumers are able to reconnect with existing friends in their online social networks (Facebook, LinkedIn) in the real world and engage in activities together which build long lasting friendships that matter

- o Saving money with coupons: Consumers will be able to find coupons that are easy to redeem (near their current location) and relevant to them and their friends. The coupons enable consumers to save money on their purchases when the coupons are redeemed
- Value propositions for businesses:
  - o Drive incremental traffic, revenue and profits: Huddlers will be attracted to a "Huddle" point by the coupons, increasing traffic at the Huddle point and revenue and store profitability
  - o Sustainable marketing channel locating ready to transact customers for the businesses: The customers who Huddle are ready to transact and the conversion rate will be high. Unlike other coupon sites, this model does not require substantial discounts or force businesses to loss-lead in the hope of repeat traffic
  - o Easy to use, low cost, self-service back-end platform for uploading coupons: The back-end eliminates the need for a large regional sales force. Businesses are given the freedom to upload their coupons to the site and they can offer a variety of discounts and coupons

The target customer was identified as young professionals and university students who have a disposable income, are technologically proficient and have ample spare time.

Recommendation: Leverage current trends in IT Fashion (such as the current interest in mobile application development and the theme of a networked society) when developing an IT-enabled product. This can be achieved through discussion with current practitioners, financiers, academics and pivoting the idea where necessary to develop a strong value proposition which underpins the product.

3.2   Iteration 2: Scaling and monetising the product (finance segment)

Build: The initial revenue model for the business consisted of taking a percentage of the revenue from the merchants and collecting revenue when users upgraded to a premium version of the app, which enabled users to view the identities of the Huddlers who they were meeting and provided users with customised Huddle suggestions.

Measure: The idea was pitched to the judges for the business incubator competition who provided the following evaluation of the idea and the business model. The mentor's responses to the judges' comments are included in Table 2:

Item	Judges' Evaluation	Mentor Evaluation
Target market	*"The application of the app needs to be narrowed down for marketing purposes. It is difficult to market a broad social media app and you need to target a specific application such as coffee"*	*"I don't necessarily agree with narrowing the marketing to just coffee. However I do agree that the message needs to be focused on the "need a quick break" aspect. Narrowing this to a coffee catch up for the proof of principle may be useful, but definitely do not narrow this when expanding after the proof of principle experiment"*
Revenue	*"We don't understand the revenue model of making money from coupons"*	*"I agree that you moved over this quite fast in the pitch. I think that you can use the business case to expand on this more clearly."*
Scaling	*"The business idea is a "chicken and egg" business model which means that with no users there are no businesses and vice versa. We were uncertain of your marketing strategy to both parties"*	*"This reflects my concern that this is a 2-sided business model. However this can be overcome by highlighting that there is no up-front marketing cost for the vendor, just a small amount of time to upload a deal and perhaps minor printing costs associated with creating the in-store QR tag for redemption.*

Table 2.   Judges' and mentor's evaluation of the pitch

Learning: The issue of scaling the business model is one that has not been examined extensively in academic literature but has been discussed in practice as the "Chicken and the egg problem" where without users there is no value for businesses to use the app to advertise, and without businesses there are no locations where people can Huddle. The mechanism to overcome this issue is to conduct exper-

iments using a "proof of principle" to test the concept (this also reconciled the disagreement between the judges and the mentor as the proof of principle would be for coffee initially and then expand once this proved to be successful). Additionally the coupon business model has been established by entities such as Groupon, but there has been limited analysis of these new types of business models for mobile devices which do not conform to the pre-existing taxonomies of business models for the web (Rappa, 2001).

Re-Build: The business plan was re-developed to extensively specify; the revenue sources (coupon revenues, in-application payment and advertisement) and costs (outsourced development and marketing and set up costs) associated with the business, the pilot program which would be undertaken at a university to "prove the concept" and the plans to expand geographically, increasing products and features associated with the app once the proof of principle was successful.

Recommendation: Use a proof of principle to secure buy-in in an initial area before expanding. A proof of principle is an experiment conducted in a small geographic area and for a subset of product features to determine whether the application achieves the desired effect. The data from this initial experiment can then be used to secure cornerstone businesses. Once the cornerstone businesses are secured, the application can then secure additional users through the credibility it has achieved by being affiliated with the cornerstone customer.

3.3 Iteration 3: Communicating the need (infrastructure)

*Build: T*he pitch was developed to further focus on the judging criteria of traction, viability, realism and presentation for the final round of the business incubator program. The pitch was clarified such that the business model and the product were clearly articulated.

Measure: The judges provided the following advice at the completion of the Finals pitch:

- The idea was clearly articulated but compared to the other business plans in the competition, the current idea lacked the supporting infrastructure (such as suppliers indicating that they were interested in marketing through the app) to inspire confidence that this idea would be successful
- The pitch could have used more emotion to persuade and excite the audience. While the business plan was well developed and sound, people are increasingly encouraged to invest in businesses based on emotion, not just economics

Learn: Uncertainty Reduction Theory examines that people rely on the subjective assessment of the person and not just the content of the communication when making value judgements about the person (Berger, 1986). Further, using emotion and the technique of "corporate storytelling" provides people with a much greater impetus to act and invest in start-up ventures than just the economics of the business (Kaye and Jacobson, 1999). In addition, uncertainty can also be reduced by identifying the risk factors inherent in the business (an item not explicitly considered in Osterwalder's Business Model Canvas) and identifying strategies to mitigate these risks such as signing contracts with businesses and conducting "proof of principle" experiments. The judges' feedback highlighted the weakness of the infrastructure component, resulting in the viability of the business model being questioned and, therefore indicating the power of the linkages between the components of the business model.

Re-Build: The re-building for this task is ongoing as the app is still being developed. The pitch has been refined to ensure the story will resonate with people by identifying examples of where the app will make a difference to the lives of the people in the audience and creating a "shared understanding" (Jentsch and Beimborn, 2014) over the power of the app to transform the relationships of the users.

Recommendation: Reduce uncertainty through corporate story telling. Developing a "Noble Selling Purpose", which identifies how the product transforms the user's reality is a tangible tool which entrepreneurs can use when developing their product (McLeod, 2012).

Table 3 provides an overview of the three iterations of the "Lean Start-up" Methodology, the impact of each iteration on the business model canvas and the corresponding theoretical contribution.

Business model canvas element	Build	Measure	Learn	Re-Build	Recommendations
Offer (Value proposition)

Customer (Customer relationship, Target Customer and Distribution Channel) | The initial concept was a portal which enabled users to consolidate their social media streams into a single feed and identify the conversations and people who were important in their lives | The idea's value proposition and revenue model were questioned by the mentor due to the lack of a compelling logic for people to use the service | The business founders considered the three "pivoting" options of abandoning the venture, modifying key features or changing the business model | The new business model kept the same business vision but changes were made to take into account the fashion for apps and the networked nature of society | IT Fashion: Entrepreneurs should leverage current trends in IT Fashion (such as the current interest in mobile application development and the theme of a networked society) when developing their business models |
| Finance (Revenue and Cost Structure) | The initial revenue model consisted of taking a percentage of coupon revenue and charging users for upgrading to a premium version of the app | The revenue model is predicated on the concept of a two sided business model which presents challenges when scaling the business | The issue of scaling the business associated with a two sided business model needed to be addressed through a "proof of principle" | The business plan was re-developed to include the proof of principle experiment and plans to scale the business | "Chicken and egg business model": Use a proof of principle to secure buy-in from cornerstone customers before expanding |
| Infrastructure (Core Capabilities, Partner Network and Value Configuration) | The pitch was refined to meet the criteria of traction, viability, realism and presentation | The final business plan did not clearly articulate the linkages with suppliers and connect with investors on an emotional level | All elements of the business model needed to be strong and link together to inspire investors | The app is currently under development and key suppliers are being located | Uncertainty Reduction Theory: Reducing uncertainty can be achieved through corporate story telling |

Table 3.   Business model development overview

4   Conclusion

This paper explores the challenges that were experienced by HuddleMe Ventures when adopting the "Lean Start-up" Methodology for developing an IT-enabled business model which better connects people by enabling them to more effectively communicate and interact, empowering them to form deeper and more meaningful relationships. The study has identified that significant challenges exist when building a business model and provides recommendations to entrepreneurs with respect to developing an app which is concordant with IT fashion, demonstrating the ability of the app to be "monetised" and mitigating the uncertainty of potential investors through effective communication.

This case study presents significant areas of potential future research as the founders have indicated that they are proceeding with the development of the app and have already engaged a designer to storyboard the app, resulting in further changes. This will enable the researchers to evaluate the impact of the "Lean Start-up" Methodology, enabling future research to develop a comprehensive framework of challenges and associated recommendations to overcome the corresponding challenges when utilising the "Lean Start-Up" Methodology, extending beyond business model development to potentially all aspects of start-up development including agile development, launch and ongoing expansion; thus increasing the success rate of start-up ventures and especially IT-enabled start-up ventures.

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