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Editorial

Chris McPhee

The editorial theme for this issue of the OSBR is Technology Entrepreneurship. As with our May issue (<http://tinyurl.com/3b6ot5x>), which shares this theme, we have invited entrepreneurs associated with the Technology Innovation Management (TIM; <http://www.carleton.ca>) program at Carleton University to share their lessons and insights about growing a technology company during its early stages.

Robert Poole, CEO of FreebirdConnect.com, describes the benefits of starting a business that leverages an existing platform and outlines three key business models that are relevant to entrepreneurs taking this approach: multi-sided platforms, long-tail markets, and freemium business models. He describes his own platform-based business and the steps that an entrepreneur can follow to start a business on this platform without substantial startup capital. He argues that entrepreneurs receive the following benefits when starting a business on an existing platform: lower risk of failure, low start-up costs, decreased time to market, rapid scaling, continual customer feedback, and simplicity.

Daniel Crenna was the CEO of Lunarbits, a technology startup company from the Lead to Win (<http://leadtowin.ca>) ecosystem. Lunarbits has recently closed its doors due to a variety of factors, which Daniel describes in his article. He argues that we have as much to learn by analyzing the causes of failure as we do from celebrating success stories. He describes the entrepreneurial pitfalls of relying too much on the validation of an idea from non-customers and of visualizing a software application only using static mockups. He attributes the failure of Lunarbits, in part, to his inability to find a suit-

able co-founder and to an overemphasis on developing a solution to a problem he could identify with, rather than a problem that was generally experienced by others. He analyzes and shares his own experiences to increase the chances that his next venture will succeed, but also so that others can benefit from the lessons he has learned.

Frank Horsfall from Carleton University's Technology Innovation Management program describes a new rapid prototyping environment to help student entrepreneurs in that program. This environment supports a collaborative entrepreneurial community that is building complementary products around a core platform. The entrepreneurs using this environment benefit from access to a flexible, high-performance workspace that is designed to help them rapidly test and evolve their prototypes and then support them through the development of production-quality releases that are ready to bring to market.

Ali Kousari, CTO of Systema Technologies in Geneva, reviews the challenges facing technology startups under traditional funding models, particularly the difficulty in accessing venture capital funds in today's economic climate. He describes new funding approaches, including seed funding and crowd funding, that can provide startups with small investments to help them develop their good ideas into feasible ventures, which may increase the likelihood of larger investment later. He combines these new approaches with an ecosystem perspective to suggest ways of enhancing the current funding situation and moving towards a new model of funding technology startups.

We encourage readers to share articles of interest with their colleagues and to provide their comments either online or directly to the authors.

For the upcoming July issue, we focus on Women Entrepreneurs and welcome submissions that shed light on the particular challenges of increasing the number of women in founding and leadership positions. Please contact me (chris.mcphee@osbr.ca) if you are interested in submitting an article for this theme; the deadline is June 15th. We also welcome general submissions on the topic of open source business or the growth of early-stage technology companies.

Chris McPhee

Editor-in-Chief

Chris McPhee is in the Technology Innovation Management program at Carleton University in Ottawa. Chris received his BScH and MSc degrees in Biology from Queen's University in Kingston, following which he worked in a variety of management, design, and content development roles on science education software projects in Canada and Scotland.

A Money-Making Platform for Entrepreneurs

Robert Poole

"Entrepreneurs are simply those who understand that there is little difference between obstacle and opportunity and are able to turn both to their advantage."

Victor Kiam

New technologies such as cloud computing and platforms are beginning to emerge as simple, practical ways for entrepreneurs to start businesses in a short period of time and with little money. They allow businesses to quickly take a concept to the market to see if it will work. If the business takes off, these same technologies are ready to scale the business to reach global markets and to stay profitable the entire time.

In this article, an outline is provided of key business models that have proliferated as a result of new technologies, namely multi-sided platforms, long-tail markets, and freemium business models. Next, the author describes FreebirdConnect.com, his new platform business that has emerged out of Carleton University's Technology Innovation management (TIM; <http://carleton.ca/tim>) program. This platform can be used by other entrepreneurs to start a new business venture that can reach new markets around the world. Finally, the article describes the steps that an entrepreneur can follow to start a low-risk, global business on the Freebird Connect.com platform without substantial start-up capital.

Introduction

These are truly remarkable times. It is becoming ever easier, faster, and cheaper for anyone to start a business that has global reach. New technologies are emerging that, when combined with a global shift in people's attitudes and behaviour, are creating profitable niche business opportunities. Consider the enthusiasm behind the mass acceptance of platforms such as Facebook, LinkedIn, and Salesforce.com. This enthusiasm has only recently been surpassed by the desire of venture capitalists, investment banks, and the investing public to cash in on this wave of internet-enabled business. While the valuations attrib-

uted to these types of businesses are subject to much debate, many of these businesses generate significant revenue and are operating at a profit.

For more than a decade, researchers have sought to understand and refine the business models that underlie these ventures, including "platform-based", "long-tail", and "freemium" business models. These business models offer interesting and potentially useful perspectives on creating a successful, global business. In this article, a brief introduction to these business models will give a flavour for how these types of businesses work and why they can become so successful in a relatively short period of time.

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The Many Sides of Platforms

A well-known example of a company using a platform-based business model is eBay. On the surface, eBay is a relatively simple platform that brings together two sides: buyers and sellers. These two sides come together on the eBay platform to leverage the services it provides and to receive the value (goods or money) that they seek. Because neither buyer nor seller could achieve the same result without the platform, the company that operates the platform becomes the essential keystone to all those buyers and sellers who need it. The platform allows them to transact and to be successful in their own right. One could argue that there is a third side to the eBay business model: the complementor. The complementor earns a profit by enhancing the value of the platform to the buyers or sellers. PayPal was one such example until it was purchased by eBay and became part of its platform.

Indeed, effective platform-based business models can be relatively simple, or they can be more complex and involve many sides. According to the definition of Osterwalder and Pigneur (2009; <http://tinyurl.com/3nuvf4c>):

"multi-sided platforms bring together two or more distinct but interdependent groups of customers. Such platforms are of value to one group of customers only if the other groups of customers are also present. The platform creates value by facilitating interactions between the different groups. A multi-sided platform grows in value to the extent that it attracts more users, a phenomenon known as the network effect."

Bailetti (2010a: <http://tinyurl.com/2fzpz8w>; 2010b: <http://tinyurl.com/3287e9q>) extends this definition beyond groups of customers to include all stakeholders that receive benefit from the platform even if they would not ordinarily fit the definition of a "customer". In this context, a stakeholder is anyone who has an interest in what the platform creates (e.g., a product or ser-

vice) or in the people who participate in it (e.g., customers or non-paying users). Expanding the definition to all stakeholders increases the number of sides and expands the definition of value beyond that of simply receiving a monetary return to include other points of value, such as enhancing a brand or personal reputation or receiving personal satisfaction from participating in an activity that one enjoys.

Benefits of Leveraging an Existing Platform

From the perspective of an entrepreneur, the benefits of creating a business that leverages someone else's multi-sided platform include:

1. Lower risk of failure. The platform reduces the cost of failure. For relatively little money, a business based on a multi-sided platform can start up and can quickly go through several iterations as the value proposition is tested and refined. If an attempt is not successful, the entrepreneur lives to try another day.

2. Low start-up costs. The goal of an entrepreneur on any given day is to maximize revenues and minimize costs. Multi-sided platforms provide an entrepreneur with access to assets and resources that would be very expensive to create and to maintain on their own.

3. Decreased time to market. Getting to market sooner means generating revenue sooner. Revenue (and the cash flow that follows it) is what will keep an entrepreneur in the game (and is usually the main reason to be in the game). Reaching the market quickly may also bring a first-mover advantage, allowing an entrepreneur to build entry barriers that make the path more difficult for those that follow.

4. Rapid scaling. Once the target audience has been identified and the businesses' value proposition has been tested and refined, success can elude many businesses if they do not have

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sufficient cash to finance the resulting expansion. Because of the inherent economies of scale and low operating costs, a platform-based business can leverage the platform to grow quickly.

5. Continual customer feedback. Many multi-sided platforms provide tools that make it straightforward to engage with customers and gather their feedback. Feedback can be direct, such as engaging in a dialogue with customers through forums or in a monologue with customers through customer surveys. Feedback can also be indirect; either customers pay you for what your selling or they do not. For the astute entrepreneur, not getting paid is a big indicator that your value proposition is not resonating with your potential customers.

6. Simplicity. Particularly for first-time entrepreneurs or those that juggle multiple opportunities, existing platforms reduce the number of decisions the entrepreneur needs to make. For example, many platforms have built-in sales channels, payment processing, technological requirements, and other features. A new entrepreneur can take advantage of a shallower learning curve to focus on a reduced set of new skills and responsibilities.

The disadvantages of creating a business that leverages someone else's multi-sided platform centre around the issue of control. Creating a business that is reliant on a business owned by someone else is necessarily riskier when some of the critical assets and resources are not owned directly. The loss of some elements of control is a compromise one makes when choosing to leverage the benefits of starting a business using someone else's platform. If the platform owner is unable to maintain the health of the platform by enhancing the platforms' capabilities or if the platform cannot maintain reliable access to it, any business venture that relies on that platform will be affected. The entrepreneur is also subject to the platform's terms of use, which may be subject to changes by the platform owner.

Long-Tail Business Models

Long-tail business models are used to offer a wide range of products or services that may be individually low in demand, but collectively represent a significant market. Often, a long-tail market opportunity is a brand new opportunity that could not be, or has not been, served before because it was not possible for a traditional business to sell a large number of items in small quantities profitably. For example, eBay created a new market opportunity on a very large scale by providing an many small-scale opportunities for sellers to reach markets of one customer or relatively small numbers of customers. The value of the long-tail business model as used by eBay has been proven; eBay allows millions of people to sell relatively small quantities of items to relatively few people. As a result of being underserved, demand from customers in tightly-defined markets can be very high.

Freemium Business Models

The freemium business model is based on a simple strategy. First, attract a large numbers of potential customers to a platform by offering some free services. Then, convert a percentage of those non-paying customers into paying customers by offering higher-value, premium services. Entrepreneurs can use this strategy to establish a strong competitive position in new markets. The freemium business model has been used as a successful commercialization strategy by platforms such as Facebook and LinkedIn, enabling them to capture as many potential customers as possible and dominate their market.

The freemium business model has emerged over the past decade as products and services have become digitized and distributed (for money or for free) over the Internet. In the context of a multi-sided platform business, a freemium business model would be used to provide a group of customers with continuous, free access to the

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platform (or parts of it). Additional premium content or services would be offered for a fee. The majority of free users may never become paying customers. The reason why this model works well when based on a platform business model is that the low marginal cost to add new, free users is more than offset by the revenue generated by the paying customers. The trick is to continually explore ways to both increase the number of non-paying users and increase their conversion rate to paying customers.

FreebirdConnect.com

Based on his studies in Carleton University's Technology Innovation Management (TIM; <http://carleton.ca/tim>) program, the author has created a new company called FreebirdConnect.com, which uses a platform-based business model. The FreebirdConnect.com platform, and how it can be used to solve specific economic development challenges faced by municipal governments, was described by the author in the November 2010 issue of the OSBR (<http://tinyurl.com/3t75z4c>).

With its data analytics, knowledge management, and social-media technologies, the FreebirdConnect.com platform enables users to collaborate and create a collective understanding of their data. Users receive value from the platform by being able to understand facts and data and by leveraging the collective intelligence of communities to solve real problems. Furthermore, the platform has broad applicability to entrepreneurs who can use the platform to quickly start a business.

The FreebirdConnect.com platform takes advantage of the three business models discussed earlier: multi-sided platforms, long-tail markets, and freemium business models. As a multi-sided platform, FreebirdConnect.com provides value to specific groups of people with definable problems. The platform provides value to several stakeholders depending on the problems being solved:

1. Paying customers, who receive value by solving a problem.
2. Free users, who gain satisfaction from contributing to a community.
3. Media members, who increase their profile and level of recognition (brand).
4. Academics, who increase their profile and level of recognition (brand).
5. Entrepreneurs, who receive revenue.
6. Associations and non-profit organizations, who receive value by solving a problem.

These distinct groups of people and problems can be viewed as small, niche markets that together, constitute the long-tail market. A long tail business model works best when the costs of purchasing and keeping a stock of inventory are kept low. In the case of the FreebirdConnect.com platform, the inventory costs are zero. Unlike eBay, which sells predominantly physical goods, the FreebirdConnect.com platform sells a highly sought-after intangible good: knowledge. If that knowledge is actionable and helps to solve real problems for people, then people will be willing to pay to gain access to it. From the perspective of an entrepreneur looking to start a business using the FreebirdConnect.com platform, the potential to make money is very large. The fact that there is an unlimited number of important, but tightly definable problems that groups of people need to solve, aligns the FreebirdConnect.com platform with the business potential of long-tail markets.

The freemium business model is important to the platform because it is dependent on creating communities of people who work together to create collective intelligence around specific problems. Free access to the platform is important in helping to attract a critical, self-sustaining mass of participants to the process.

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Starting a Business on FreebirdConnect.com

Many businesses fail, not because the entrepreneur is too ambitious, but because their focus is too scattered. When resources (time, money, talent) are limited, one must have a very specific focus and set realizable goals. The FreebirdConnect.com platform rewards entrepreneurs with a strong focus by helping them to start a business that can pursue many new niche markets with a unique and compelling value proposition. Specifically, the opportunity to earn revenue will come from two sources: selling access (subscriptions) or finding partners who will pay to provide free access to specific groups of people.

The following sections describe the steps that an entrepreneur can follow to build a successful business on the FreebirdConnect.com platform.

Step 1: Identify the problem(s) the business will solve. Start asking questions to identify problems that specific, identifiable groups of people have. Also identify the different types of data needed to solve those problems and whether additional solutions can be generated through a process that creates collective intelligence around the data (i.e., a single version of the truth). The more narrowly the entrepreneur can define the problem that they want their business to be focused on solving and the greater the value of leveraging the platform to generate actionable intelligence to solve the problem, the greater the chance they will succeed.

Step 2: Define the value propositions. Identify each of the stakeholder groups and list the value that each stakeholder would receive from their involvement in the platform. Which groups of people would have an interest in accessing the platform to solve the problem? What problem(s) will be solved for that group? What parts of the platform could be made available for free and what parts could be offered as a premium service for a monthly or annual (subscription) fee?

The data analytic capabilities of the FreebirdConnect.com platform make it easy to offer higher-level aggregations of data or older data for free. The more detailed, lower-level data or more recent data can be offered as a premium service.

It may also be that more money can be made by finding one or two groups who would be willing to pay to provide stakeholders with free access to the premium service. For example, an association or a municipal or regional government may want to provide free access to their members or constituents as a way for them to add value to that group. An added advantage to finding a single sponsor for your business is that the community of contributors is likely to be larger when everyone can access it for free.

Step 3: Source the data. There are several options available to obtain the data. One option is to find free data. Because there is a wealth of freely available, easily downloaded data from various sources, it may be worthwhile to spend some time thinking about the kinds of problems that can be solved with this data. Examples include open data from local, regional, and federal governments (e.g., census, health data, trade data, labour statistics, industrial production, poverty and wealth, environmental data) and large non-profit organizations (e.g., IMF, World Bank, UN). Another way to source free data is to use tools like Web crawlers or Yahoo Pipes (<http://pipes.yahoo.com/>). Yahoo provides a service that allows people to use key words and logic to search the Web for specific content and returns not just links, but the actual content from Web pages. This process, known as crawling, can be a very effective way at gathering data from many different sources, which can be combined to create a unique repository of useful data.

Another option is to buy the data from a data aggregator or from the data owner. Many organizations collect data as part of their operations, but either do not have an interest in monetizing that

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data or do not have an easy path to do so. This presents an excellent business opportunity for the savvy entrepreneur. As an alternative to buying such data, the entrepreneur may consider partnering with the data owner(s) to leverage their data asset. The community or customers of the data owner can receive discounted access to the premium services or the data owner can receive a share of revenue if they help to promote to earn money for both sides.

Step 4: Build a dashboard. Once the entrepreneur has the relevant data, they can leverage the data experts at FreebirdConnect.com to help understand how the platform's analytic tools can be used to create dashboard views of the data for presentation to the community. Dashboards are an effective way to present multiple views of data so that issues can be highlighted and presented in a logical way. They encourage people to contribute their insight to help solve a problem.

Step 5: Seed the platform with expert insight. The best way to encourage people to join a collaborative community is to work with a few selected experts to create discussions and to begin the collaborative process before the platform is made accessible to a larger audience. The goal is to find people who have deep subject-matter expertise in the issues addressed by your business and who would also receive value from having a significant profile on the platform. These stakeholders include academics (e.g., researchers, professors, and graduate students), media (e.g., print journalists, freelance journalists, and journalism students), and consultants (i.e., professionals who are paid to provide their subject-matter knowledge and analysis). Note that these stakeholders are also potential paying customers, so it is best to only recruit as many as are required to adequately seed the platform in its early stages.

Step 6: Spread the word. Make it known to your target customers that a solution to their problem is now available. All stakeholders to the problem have an interest in accessing the platform to see

for themselves if there is sufficient value for them to join the community and to contribute their insight to what the data means and to collaborate with others. A complete understanding of the value received by each group of stakeholders will help the entrepreneur maximize the number of paying customers. For example, consider a community where there are many consultants who earn a living by providing their subject-matter expertise. If you have been successful in recruiting a few of them to contribute their insight to seed the platform, then all other consultants have a strong incentive to pay to join the platform so that they too can maintain or even enhance their profile as a subject-matter expert by contributing their insight to the community. Similarly, the executives of associations or not-for-profit organizations may have an incentive to join the community and to participate in the collaboration to maintain credibility with their membership.

Conclusion

A variety of factors, including the arrival of new technologies, the failure of legacy business practices, and turmoil in global financial systems, are greatly disrupting the business world. However, as usual, history repeats itself and new opportunities abound. In the Earth's not-so-recent past, large lumbering dinosaurs failed to adapt to new environmental realities and were replaced by small, nimble mammals that had the ability to adapt and flourish. Today, entrepreneurs fill the role of the quick and the nimble in the new business climate. While incumbents are unable or unwilling to adapt, entrepreneurs find new opportunities and creative ways to flourish from them. In this article we have discussed how new technologies have enabled new business models that provide entrepreneurs with a way to quickly design, launch and grow a business. By leveraging the business platforms of others to get to market faster while reducing the risk and cost of failure, entrepreneurs remain at the forefront of innovation.

A Money-Making Platform for Entrepreneurs

Robert Poole

Robert Poole is CEO of FreebirdConnect.com. He is also a Chartered Accountant and has 15 years of experience building and deploying business intelligence and social analytic solutions to global enterprises. As a consultant, Robert has provided his expertise to private and public-sector clients including Federal and Regional governments. As an entrepreneur, Robert has created several technology-related companies and has appeared on CNBC's Power Lunch. Robert is also a Master's student in the Technology Innovation Management program at Carleton University.

Learning from Failure: A Case Study in Entrepreneurship

Daniel Crenna

"Success is simply a matter of luck. Ask any failure."

Earl Wilson

Business ventures often fail even when market demand is demonstrated and evaluated by peers, and when the project team is capable of producing the work. In this informal case study based on the author's own experiences, the topics of market size and fit, team size, human dynamics, business validation, and interaction design are explored to form a picture of how a business with seemingly promising prospects could still fail. Specifically, the challenges faced by small or single-person implementation teams are discussed, with suggestions for overcoming these challenges to produce more realistic and viable businesses.

Introduction

Most entrepreneurs enjoy reading the success stories of technology companies and their leaders, both local and global. Depending on the entrepreneur's disposition, these stories can be motivational, such as when the entrepreneur can identify with the hero, or they can add pressure, such as when the hero sounds less capable than the entrepreneur perceives themselves to be. Stories of success are so captivating that we forget that most of what we do as a technology entrepreneurs will be classified as failure.

If an entrepreneur is in this game for the long haul, they will fail so many times that they will no longer differentiate failure from success, because like any human endeavour that improves with practice, the art of business building is a steady march of preparation, timing, execution, and aftermath. And while the current opportunity landscape lets us attempt more experiments than were possible in the past, this only means that we can fail faster and cheaper, ultimately failing more often.

While most of the stories we hear are written like victory speeches, this story is about failing. In this particular case, the story is not about failing particularly fast or cheaply; in fact, the story is perhaps even about failing at failing well. This article is not meant as a means of helping you avoid failure, but instead hopes to serve as a signpost. To quote J.S. Cournoyer, "this is who you're competing with." By sharing failure, we all stand to gain by the perspectives of similar people working towards similar goals. If we have no stories like these to tell, we might think our world is made of shining stars and obvious frauds, rather than the richer landscape of many talented, inspired individuals who are earning success one failure at a time. If we make that mistake, we might not even try.

Background

In the summer of 2009, I was finally coming to terms with a previous failure to build a business in the dating industry. I was a victim of something I like to call the "Frind Paradox", named after Markus Frind, the programmer that

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created the Plenty of Fish (<http://plentyoffish.com>) dating site that, despite its many technical, security, design, and character flaws, and much to the chagrin of a crowded marketplace with demonstrably better solutions, continues to generate more than ten million dollars in advertising revenue annually. The paradox is defined as the mistaken belief that a terribly executed plan plus perfect timing is always defeated by a well-executed plan after the fact. (Hint: it is not). Eager to start another chapter, and with the encouragement of new colleagues in a new city, I began development on Lunarbits, an e-commerce platform for selling digital goods.

I had a vision for a platform that gave absolute control to the content creator, whether they wanted a traditional "one URL equals one download" type of experience, or whether they wanted to stream video content within a browser to a subscriber base. In effect, Lunarbits was meant to possess all of the flexibility of Shopify (<http://shopify.com/>), without the outdated transactional approach to content purchasing of Fetch (<http://fetchapp.com/>) or Pulley (<http://pulleyapp.com/>), or countless other market participants.

Shortly after the initial flurry of excitement and imagination of what Lunarbits could be, I began product development. The Lunarbits brand was a happy stroke of luck, as I had found the logo (Figure 1), complete with its nerd-chic design, on BrandStack (<http://brandstack.com>), an open marketplace for brand identities. In hindsight, the name Lunarbits is not a great brand name. It suffers from not having an obvious relationship with the proposed solution. This issue

Figure 1. The Lunarbits Logo



is especially problematic for products competing in the consumer Internet. I had chosen to focus my first marketing vertical on technical content producers – software developers like me that thrive on teaching others – and wanted to look like PeepCode (<http://peepcode.com>), a popular screen-casting platform, while doing it. Using my own passion about a frustration I had, I replaced my own individual desire to solve the content delivery problem, with the intention of solving it for anyone.

The immediate next step was applying for, and being accepted into, Ottawa's Lead to Win (<http://leadtowin.ca>) program. Lead to Win is a six-day, intensive, business-building exercise put on by successful entrepreneurs in the region who are passionate about growing opportunities. Through a series of keynotes, peer evaluation, and private planning, culminating in a "big pitch" to a small group of successful CEOs and investors, business ideas are put through the ringer to determine if they, and the people behind them, have what it takes to become successful technology businesses. Each business that passes the evaluation is tasked with creating at least six jobs within three years. Lunarbits was put to the test, and came out the other side with the green light: "Go build this!".

Validation is Not Enough

Regardless of the size of the team, we routinely seek out the counsel of others when determining the potential value of a new venture. We support this idea culturally with business incubators, angel and venture capital investments, and strategic partnerships or ecosystem development. In many ways we are seeking permission, from people with experience, from informed business theory, and from ourselves, to invest a significant amount of time, effort, and money developing our vision. The thinking goes: if our plan is validated, it stands a much higher chance of succeeding, and the sacrifice is worth the risk.

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But validation is not enough. In many ways, the act of validation is a brilliant way to postpone the hard work, because it takes you out of the details of delivery and you become engaged in a socially acceptable form of pretending through financial forecasting, customer and market analysis, and partnership development. These are important tasks that I believe fit further down the spectrum, certainly after the initial launch stage, where validation is no longer on the radar. When you are in the thick of it, there is some small solace in knowing that other people approved and believed in your vision, but putting too much stock in others' armchair business development keeps you in your own metaphorical armchair, away from making real progress that can be validated by paying customers, or a lack thereof.

With Lunarbits, validation was never the problem; on paper, Lunarbits is still a viable business and its competitor landscape remains largely unchanged after two years. However, that does not mean it is a good idea. And that does not mean it will not fail for countless other reasons.

Mockups Are Not Enough

We often hear abstract lessons about failure, but there are plenty of concrete reasons for projects to falter. One of them, which applies more specifically to software but has broader applications, is designing without mockups. This approach assumes that the vision of your business has its own natural metaphor that can express itself in software without disciplined work. With Lunarbits, I paid up front for quality graphic design of the website (i.e., the brochure), admin portal (i.e., the back end), and default store theme (i.e., the marketplace). When I met with the designer, I had an idea of how the application should "feel", but I only brought feelings to the table. I thought that my vision was obvious and that the design would be self-evident. It was not. I was surprised to find myself tongue-tied

when asked simple questions, such as: "What happens next?" with respect to customer workflow.

The reality is that front-end work is one of the most challenging details of a business, because it is the most obvious to the customer. It is easy to take great design for granted, and that is half of the trap, believing that it is an afterthought. It is not the pudding, it is the proof. Rather than put the brakes on Lunarbits until I had articulated a complete picture of how the application would work, I had the designer work on a basic concept, and I hoped I could slice and dice and reuse most of the general layout to fill in the blanks for development areas I had not fully imagined. This ended up being the kiss of death, because I spent more time trying to jam an evolving application into the design elements I already paid for, rather than start over. By the time I realized my mistake, I was already too stretched financially and emotionally to turn the corner; I would need to rewrite Lunarbits to fit the metaphors I learned building it, which I could have learned if I had "built it out of paper" first.

The lesson is that you cannot know the generic without attempting the specific. I now recommend to everyone that there are two very specific stages that you should go through before you spend a cent on graphic design. The first is using a mockup tool (or a good pencil and pad of graph paper) to outline every screen of your application, even those that seem obvious to you. Make copies, and then assemble them into "decks" that represent tasks your customers need to perform, such a "sign up for an account" and "upload a new video". When you can see all of these interactions clearly, the next step is to throw them away.

Mockups are not enough. They are a great mental exercise, but they do not go far enough in preparing you to truly know what you need from a

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graphic designer. Instead, you should build a live interaction system, which is essentially the entire application, using an unremarkable, unbranded theme. You can find clean, standards-compliant software application themes from many online stores, though I have the most luck with modern treatments at ThemeForest.net (<http://themeforest.net>); these themes typically cost less than \$20, but they are priceless in that you can reassemble them into any of the screen designs you created at the mockup stage. This live interaction system will allow you to build out your project from back to front. Hire the designer last, but start the design first. This approach will pay off both in terms of the ownership you will have over the vision of your product and in the amount of input you will be able to provide to get the design you need the first time.

Going Alone May Not Be Enough

I have always been an advocate of solo entrepreneurship. I consider myself a "code soloist", someone who has the imagination to solve a problem and the broad base of technical and communication skills needed to build it with their bare hands, with the exception of graphic design, which should never be left to software developers or other mere mortals. Yet, over time, I have learned that certain categories of problems need teams, no matter how ambitious or capable the soloist. It is more a question of simple human dynamics than it is about the character of the person. People are energetic beings, and we cannot sustain a high degree of intensity or capacity for work indefinitely without encouragement and consistent feedback, which are impossible to provide for yourself.

Building a technology business is a grind. Like any stressful, all-consuming journey, you need supporters, both for accountability and momentum. They cannot be the kind of supporters that do not understand the problem space you are trying to tackle, have their own focus and

projects, or are able to separate themselves emotionally and financially from any challenges that come up. Those kinds of supporters are called "friends", and while they are essential for your well-being, they are not enough. Your true supporters need to be in it for the long haul, and take on as much risk as you. These kind of people are called "co-founders", and you need them if the kind of business you are building solves a problem your mother can understand. In other words, if your business is well understood by non-technical people, and it is trying to provide value to "anybody" (which is itself a sign of business planning immaturity), the market you are after is so horizontal that there is little hope of achieving success without a team.

With Lunarbits, I made the mistake of continuing despite an inability to form a team. Left alone long enough with the massive task of architecting a platform that could be used by anyone, I lost interest. I attempted to manufacture a technical support team by extracting components of the underlying infrastructure and offering these components to others under an open source license, hoping that releasing them would attract other developers to my cause. Do not do this. The overhead of extracting takes you far away from shipping anything tangible, and the myth of external contribution coming in a timely fashion, or for areas that really need improving, is a vicious one. Nobody ever built a business with crowdsourcing alone. Open source is an effective strategy for business development in a variety of situations, especially when the core product is a platform used by other developers, or seeded to the general population as well-documented, well-loved hosted platforms like WordPress (<http://wordpress.com>). But I suggest that, for hosted solutions that are charging monthly service fees up front and rely on execution as a key market differentiator, there is simply too much pressure to ship and too many proprietary aspects that must be carefully separated from any potentially sharable infrastructure. The time and effort needed

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to open source before you have shipped your first version will have a direct impact on your momentum, which is the most critical "soft" value you have in the beginning. Save open source for when you have already established a first version and are looking to improve cheaply, rather than gamble that the mere idea of open source's potential, with no concrete examples, will be enough to gain developer confidence and support.

Scratching Your Own Itch May Not Be Enough

A lot of the time, we take colloquialisms at face value because we expect a "truism" to be true. That is why it is easy to read and believe sentiments like "scratch your own itch" – the idea that a virtuous circle is created by the entrepreneur that is simultaneously solving a problem that they themselves need solving, while at the same time being uniquely suited to solve it. There are clear benefits to this strategy beyond capability, especially as an antidote to the mistake of "going it alone", since the creator is intrinsically motivated by a real frustration where they can see a solution and are capable of producing it. A lot of effort normally destined for user stories and usability testing is liberated by the entrepreneur's ability to use themselves for feedback.

Often what we want for ourselves is not generally useful to others, at least not in numbers high enough to justify the time and cost necessary to see an idea through. As entrepreneurs tend towards a narrow and focused view so that they can find underserved markets, we also have unique needs. With Lunarbits, my initial frustration was that there were no turn-key options for remixing and selling digital content (specifically instructional videos); existing solutions did not have the flexibility of a hosted storefront or the ability to restrict purchased content to download versus online consumption, or they required multiple integrations between shopping cart, storefront, and back-end delivery systems. The frustration of realizing that I would have to

create my own platform to solve the problem of selling my digital content was replaced by the idea that there was a real need for this in the general public, rather than the idea that this might be useful for a small group of people who demanded major publisher quality for their indie video commerce projects. In hindsight, I should have realized that the needs of this niche group are clearly different from the needs of the general public.

A compounding problem of "scratching your own itch" is that wanting something for yourself is not the same as wanting something for everyone. While it is easy to make imaginative justifications for how others will benefit from the solution to a problem you have, and while you may even represent a large market of solution seekers, it is a mistake to think that a solution that solves your problem is generally useful as-is. Entrepreneurs grossly underestimate the amount of time and effort it takes to take a working concept and make it widely available, stable, scalable, and supported. From a design perspective, interactions that make sense for a prototype are rarely well received by the general population without refinement. An additional problem is that once the solution works, the entrepreneur's problem is solved. This takes away the motivational leverage, but leaves a large body of work that seldom resembles the original problem and has more to do with maintenance than creation.

Big Ideas May Not Be Enough

As indicated earlier, Lunarbits as a business idea is still just as viable and just as validated today as it was when I began two years ago. What many entrepreneurs will pay lip service to, but generally fail to recognize in any of their own ideas, is this: "if it's broke, it could be because it ain't worth fixing." Similar to the Frind Paradox, sometimes bad solutions exist because better solutions are not worth the effort. This is a real phenomenon. It could be a function of the mar-

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ket's expectations, or the secret, real truth behind the profitability of some seemingly attractive segments, but I believe that if I launched Lunarbits tomorrow, chances are I would have a very real problem attracting a sufficient number of subscriptions to sustain a business. I come to this conclusion based on the number of competitors that have launched in two years (two) and by the number of those competitors that are deviating from the existing entrenched and uninspired business metaphors (zero). This does not mean there is no room for disruption in the digital goods market, but it does mean that I am skeptical that anyone "going it alone" could crack it, at least without burning out ten feet from the finish line. The idea is simply too big.

Sometimes the big vision we have cannot be solved well for all of the people, all of the time. This is a curious property of big ideas: they all start with an optimistic burst of energy that seeks to topple the status quo, but their proponents forget that the existing solutions did not spring up out of a lazy person's mind, and it is a mistake to take any of them lightly, no matter the apparent gap between a new idea and their reality. To maximize your chance of success, when faced with a big vision that cannot be solved well for all of the people, all of the time, the correct response is to shrink the vision, or get a new one.

Conclusion

In the end, Lunarbits failed not because it was a bad idea, because nobody believed it would work, or because its team was not capable of creating it. It failed for regular, human reasons. I simply could not sustain the effort long enough. I did not spend enough time up front getting the experience nailed down before spending my budget on a designer. I did not find a co-founder even though the scope and effort required to execute a full-scale platform clearly demanded it. I

spent too much time generalizing infrastructure details hoping for external collaboration through open source efforts. I kept pursuing a huge problem I could not solve alone in an acceptable amount of time, for the widest possible audience. I did not interpret the lack of market movement as a possible warning sign that there was not a strong market to begin with. I mistook my own problem of needing a flexible content commerce application to warrant a common and widely desired solution. I scratched my itch for so long I forgot what I was scratching. After two years of hard work, I could not access any of the original inspiration I used to feel. The problem was, and is, "dead to me".

I do not have a success story to tell today, but I will in the future. I will because I recognize that success and failure are identical experiences of effort and learning, but have different outcomes depending on whether a lesson is truly learned, rather than merely witnessed. It would be easy for me to postpone telling my failure stories, choosing instead to reminisce on them fondly and cite them in victory speeches, but the truth is that these painful experiences are most of what we do every day as technology entrepreneurs. These stories are important. The more we share them, and the data behind failing, the better chance we all have of understanding where we fit, and learning what we need to take the next step.

Daniel Crenna is a software developer from Ottawa, Canada. Daniel has delivered software for the web's biggest brands and has created open source software for millions of users. He is currently the lead developer for Postmark (<http://postmarkapp.com>), a hosted email service provider, and writes on technical entrepreneurship at danielcrenna.com. He is currently at the design stage of his next tech venture.

A Rapid Prototyping Environment for Student Entrepreneurs

Frank Horsfall

“Developing a prototype early is the number one goal for our designers, or anyone else who has an idea, for that matter. We don't trust it until we can see it and feel it.”

Win Ng

This article describes a project initiated in the Technology Innovation Management (TIM; <http://carleton.ca/tim>) program at Carleton University to develop a common development and test environment for entrepreneurs associated with the program. This environment will support a collaborative entrepreneurial community that is building complementary products around a core platform; the goal is to accelerate the quick delivery of projects to market while acknowledging that the community's resources are limited. As described in this article, the solution that was developed is called the TIM Rapid Prototyping Environment (TIMRPE).

The TIMRPE provides a competitive advantage for entrepreneurs in the TIM program. A TIM entrepreneur can quickly jump into the development of their prototype, knowing that timely assistance and support is available. This environment now hosts several entrepreneurial projects, some of which have been described in recent issues of the OSBR, including this one. This article introduces the rapid prototyping approach, provides an overview of the TIMRPE, shares lessons learned from the early experiences with the environment, and outlines the project's next steps.

Introduction

Rapid product development and prototyping methodologies have been topics of academic study and have been implemented in industry since the early 1980s. The purpose of rapid prototyping is to provide a time-compressed cycle of iterative development, feedback, and design adjustment. By introducing changes early in the design process, the adopters of this process may greatly reduce time to market and avoid costly mistakes. As a result, many large corporations have adapted the methodology to produce their

products, associations have been created, journal articles and books have been written, and industry organizations have developed baseline standards requirements.

In recent issues of the OSBR, including this one, there has been an emphasis on ecosystem creation, communities creating complementary products on a common platform, and the sharing of lessons learned by entrepreneurs starting technology businesses. This article complements these efforts by describing the TIM Rapid Prototyping Environment (TIMRPE), an environ-

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ment that leverages rapid prototyping methods to provide an ecosystem community of entrepreneurs with the ability to quickly develop and go to market with their product offerings.

Overview of the TIMRPE

In early 2011, the TIMRPE was created at Carleton University as a prototype framework to provide a common platform for projects, many of which have been described in recent OSBR articles, such as the BigBlueButton web conferencing system (<http://tinyurl.com/3q6otvn>), the Make-a-Deal platform for deal development (<http://tinyurl.com/3gdmxny>), the Carleton Entrepreneurs program (<http://tinyurl.com/3elhz bq>), and Cornerportal's new platform (<http://tinyurl.com/3ssuh4x>).

For entrepreneurs in the TIM program, this environment is a cost-effective means of creating and testing their prototypes. Without this environment, many entrepreneurs would spend considerable time figuring what resources to purchase and what they could get away with in the short term. In prototyping, there is often uncertainty about what resources may be required. The common approach is to “make do” with whatever resources are cheaply available, which often means older, outdated, and underpowered desktop machines or laptops.

The TIMRPE has been built upon the newest available technologies, which provide high performance levels and flexible configuration options for memory and disk space. The environment provides the prototyping entrepreneur with the ability to try different settings to determine the optimal configuration for their offering. As it evolves, the environment is adapted to accommodate variations in the resource requirements of each project and any improvements are shared by all entrepreneurs as the project evolves. This makes it easier and beneficial for additional projects to join and contribute to the collective.

For projects requiring collaboration within an ecosystem of entrepreneurs, the TIMRPE offers greater flexibility and control than can be achieved by “making do” or even by purchasing a server or an off-the-shelf cloud-based solution. The framework is designed such that additional resources can be added when required by a given entrepreneur, even if they are only needed for a short period of time. Also, workspaces can be reset easily, quickly, and often. If two entrepreneurs are working on complementary prototypes, and they want to integrate their products to test functionality, an additional server can be quickly configured to enable a joint-integration effort. As their prototypes become more mature, entrepreneurs eventually require their own production environment. Having used this environment for their prototyping stage, the entrepreneurs will have an accurate understanding of their requirements and can make informed decisions regarding the purchase of servers or cloud space.

Design of the TIMRPE

The architecture of the TIMRPE has two main areas of focus. One area is designed for stable releases and prototype solutions that are nearly ready for deployment or production. The second area is dedicated purely to prototype development. Each of these areas has plenty of disk space and computing horsepower.

As required, additional hardware is added to keep up with the growing demand from entrepreneurs in the TIM program. At the time of writing, the TIMRPE serves 12 major projects with 36 server resources, and more projects are in the pipeline.

In their initial configuration, individual workspaces are securely segregated. However, each entrepreneur has the option of opening their environment for collaboration. If integrated prototyping is desired, then additional resources can be shared to accommodate everyone's needs. If

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problems arise, their workspace can be easily reset. Also, community members can have separate server instances if they are developing multiple projects that are in varying degrees of product maturity.

Lessons Learned

Through the early stages of the operation of the TIMRPE, the environment has itself been in a prototyping phase; improvements and changes have been made in response to demand and ongoing learning. This section describes three important lessons that were learned based on the author's own observations and interactions with members of the community that has been using the TIMRPE.

1. Project diversity increases the productivity of the environment. The initial prototype of the environment was designed to grow through the development of add-on products or improvements to a base platform. Each new issue provided a learning opportunity for iterative improvement of not only the base platform but the prototyping environment as a whole. Additionally, supporting products emerged which increased overall performance when applied to all project servers. As new projects joined the environment, differences in requirements became a source of lessons that turned into performance improvements to the overall system. So, the positive impact of diversity was twofold. Each new project benefits from solutions to earlier issues, and they each in turn contribute to further improvement of the environment for the present and future.

2. A simplified process makes it easier for new project teams to join. As the TIMRPE increased in popularity, it became clear that the project needed to reduce the barriers to joining the ecosystem. While working with groups that have varying degrees of technical expertise, the process usually began with discussion with the project leads to understand the nature of the

project, how the space will be used, and of any special considerations must be taken into account. Following this discussion, a work environment is configured with user accounts, dedicated server space, and disk storage. Once the environment is set up, the project lead is given access to the workspace and provided with walkthrough of the basic environment.

3. The infrastructure needs ongoing support and maintenance. Members have ongoing collaboration opportunities and technical support is made available to all members. Assistance is made available to the members of TIMRPE to ensure that any issues with the environment, network connectivity, or account access are dealt with quickly. Optimizations that are identified by the community, are assessed, tested, and applied to project workspaces. Ongoing support of the server and network environment is also provided. Software upgrades and security patches not only improve overall performance, but provide necessary protection against possible exploitation of vulnerabilities. The TIMRPE is regularly updated to minimize exposure to these risks. Together, all of these activities provide benefits to individual entrepreneurs and the ecosystem as a whole.

Next Steps

The initial focus has been on the development, configuration, and refinement of the physical environment. Aside from continuously improving and expanding the capabilities of the TIMRPE, the following next steps are being considered:

1. A discussion forum will be added to supplement existing communication channels, which have largely been informal email exchanges and face-to-face conversations. This will not only make it easier for members to share ideas, experiences, and suggestions, but it will provide a record of these exchanges for others and provide a basis for new documentation.

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2. Several projects are beginning to informally share development and testing resources to accomplish similar tasks. A mechanism will be put into place to help members share common test cases, scripts, and other digital resources, but the project also aims to provide a common pool of software developers and testers to share their expertise with TIMRPE members.

3. Several initiatives are currently underway to promote entrepreneurial programs at Carleton University and in the wider Capital Region (i.e., Ottawa, Gatineau, and surrounding communities). Examples include Lead to Win (<http://leadto.win.ca>) and the Carleton Entrepreneurs program (<http://tinyurl.com/3tjjmyt>). The project team is currently assessing how the TIMRPE can be expanded to support these wider groups of entrepreneurs.

4. Monitoring capabilities will be added to gather additional information about how the environment is being used and can be further refined.

Conclusion

Rapid prototyping methodologies have helped projects accelerate their time to market since the 1980s and provide the basis for the TIMRPE. As described in this article, this environment provides a competitive advantage to a collective of entrepreneurs enrolled in the TIM program at Carleton University and future plans are to expand to a larger number of organizations. The TIMRPE helps entrepreneurs overcome the uncertainties that are commonly encountered when turning ideas into products, and it supports their efforts to bring these products to market quickly.

Frank Horsfall is a graduate student in the Technology Innovation Management (TIM) program at Carleton University in Ottawa. He is the Chair of the TIM Entrepreneur Council, the founder/lead of the Bloom data visualization project, the project founder/lead of the TIM Rapid Prototyping Environment (TIMRPE), and a member of the TFN200 architecture team tasked with the design of a next generation web-based communications collaboration platform at Carleton University. Frank is also President of EnTeraSec (<http://www.enterasec.com>), a security & IT professional services company in the Lead to Win business ecosystem.

New Solutions to the Funding Dilemma of Technology Startups

Ali Kousari

"If there were no bad speculations there could be no good investments; if there were no wild ventures there would be no brilliantly successful enterprises."

F. W. Hirst

This article explores the current funding challenges facing technology startups and describes new models based on smaller investments and collective action. First, the advantages and disadvantages of traditional startup funding models are presented, with an emphasis on venture capital and angel investment. Next, an overview of existing seed funds, or seed accelerators, shows how entrepreneurs can leverage this approach to access subsequent rounds of funding and create successful ventures. Then, an overview of crowd funding is provided, including examples of companies that have adopted this approach to funding startups and their founders. Finally, the article presents the basis of a new approach that uses crowd funding as means of attracting investors to collectives. In these business ecosystems, startups are exposed to less risk and investors can benefit from attractive returns by investing in these promising startups.

Introduction

Technology startups can be financed in different ways. These include self-financing using the founder's own money, loans from banks or other sources, government support through grants and entrepreneurial programs, venture capital (VC) investors, and angel investors. In this article, we will explore new alternatives means of investment that are designed to help entrepreneurs overcome the initial investment challenge and prepare their companies for subsequent funding and improved bargaining power. With the advent of crowd funding, new forms of startup financing have emerged that can turn seed companies into successful ventures. The article further proposes that, by leveraging collectives and the business ecosystems they participate in,

it is possible to create a robust environment where startups can access funding, grow rapidly, and generate profits.

Traditional Funding Models for Startups

Today, the wide availability of affordable technology solutions has made it easier to turn ideas into well-developed concepts. These technologies include free/libre open source software and hardware, tools for remote teams, affordable hosting, and cloud facilities. As a result, early-stage technology companies need only small amounts of investments to either create a first version of a product or to create an early prototype in order to attract more investors or subsequent rounds of funding. Although VC money may become available in the early stages of a

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company's lifetime, it usually comes into play when a company is growing and ready to expand its operations. Moreover, VC investment is used more frequently to finance product manufacturing and commercialization or is used to reach an initial public offering (IPO) in which shares can be sold to the public (Lefton, 1998; <http://tinyurl.com/3qfn4cr>).

On one hand, venture capitalists provide strong support to startups. Aside from providing financial backing, executives of such firms have extensive experience of building businesses and usually provide the right level of guidance to put companies on track. On the other hand, VC firms invest in startups in order to get significant returns. Their clients are pension funds, hedge funds, and wealthy individuals who expect high returns. In order to achieve those returns, they want to reach the IPO or buyout stage as quickly as possible (Galbooni and Rouziès, 2010; <http://tinyurl.com/2btrubu>). Founders may lose control over their company and find they are forced to report to a designated CEO. Moreover, all actions and decisions made by the founders must be scrutinized and approved by the company's board, who have a right to veto any decisions (Wadhwa, 2006; <http://tinyurl.com/3guhspn>). In most cases, venture capitalists negotiate aggressive contracts and may specify liquidation terms in which they receive two or three times their original investment along with other preferential terms (Ante, 2009; <http://tinyurl.com/be49ly>). Therefore, in a case where startup liquidation occurs at twice the company value, it is possible that the entrepreneurs do not get anything in return, since they need to respect the liquidation clause of the contract.

In the current climate, it has become very difficult for venture capitalists to find companies in which to invest. Since 1997, the number of deals has decreased significantly to reach its lowest point in 2010 (Galbooni and Rouziès, 2010). VC firms have not been able to adapt their busi-

nesses accordingly and their value proposition to investors and entrepreneurs is being reduced significantly. Investors that back VC firms expect high returns, but regrettably these firms cannot provide the expected return because there are fewer promising startups and reaching the IPO stage takes longer. Because of this increased risk of illiquidity, investor preference may shift to other types of alternative investments that provide a better risk/reward ratio (Galbooni and Rouziès, 2010). For entrepreneurs, the VC value proposition is equally weak. Venture capitalists try to attract promising companies by improving their financing offers, but in the end many startup technologies need guidance and mentorship rather than large investments to get their businesses going (Galbooni and Rouziès, 2010).

Because of these challenges with VC funding, many entrepreneurs turn to angel investors, who offers greater attention and guidance to the business in addition to investment (Liu, 2000; <http://tinyurl.com/3v7rx64>). Angel investors typically fill the gap between the original funding provided by the founders, relatives, or small investors and later VC investment. In other words, they usually finance startups up to \$1 million (Liu, 2000). Angels provides a more flexible alternative to venture capitalists. Angels tend to require less information about the company and it takes them less time to make an investment decision (Champion, 2000; <http://tinyurl.com/3cn9lgq>). According to a survey conducted by the Ottawa Economic Development (OED) in 1998, it usually takes an angel six weeks to close a deal (Liu, 2000). As for the investment expectations, they usually require a 30-40% return on investment, which is much less than what a VC firm expects. Although angel investment looks attractive and more flexible, some due diligence is necessary to make sure that they have the shoulders to support a startup during its journey. The most common problems arises with abusive term sheets and agreements signed between the entrepreneurs and the angel, cash

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shortage when the startup needs it the most, and angels who have no prior experience of investing in startups (Zwilling, 2011; <http://tinyurl.com/3bf4ydv>).

For technology entrepreneurs, it is important to nurture ideas that could turn into successful ventures while keeping a strong customer focus. In order to secure funding, entrepreneurs must have the ability to understand the market in which they are competing and be able to overcome the obstacles of creating a successful venture. Being able to create compelling business plans with a strong focus on cash flow management and time to revenue are essential elements to investors assessing an investment opportunity (Wehrum, 2009; <http://tinyurl.com/88xayd>). According to the OED survey conducted in 1998, over 70% of business plans are rejected because of a poor initial impression of their financial merits and the abilities of the entrepreneurs to succeed (Liu, 2000); clearly many entrepreneurs would benefit from greater preparation when seeking significant investment.

Seed Accelerator Funding Models

To ease the process of startup funding, some companies offer a combination of mentorship and seed funding, which allows entrepreneurs to nurture and refine their ideas before presenting them to potential investors such as angels and venture capitals. This model is based on a lean approach to product development, which is more agile in nature and features shorter development cycles and frequent releases. These investment companies are called "seed accelerators" and they have demonstrated that an investment as low as a few thousand dollars can have a tremendous impact on the ultimate success of a startup company.

YCombinator (<http://ycombinator.com/>) is one example of a seed accelerator company that provides a simpler process than direct VC or angel funding. Initially, a business plan is not re-

quired; applicants need only describe the business opportunity. Applications are reviewed and promising candidates are selected to present their ideas in person. Once the candidate is approved, a round of seed funding and three months of intense development and training is initiated to bring the startup to a stage where they can present their business to a large audience of other investors. YCombinator has provided seed accelerator funding to 300 startups using this approach. An impressive 94.4% of participants received subsequent funding with an average pre-valuation of \$10M (Geron, 2011; <http://tinyurl.com/3qyw7pg>). Notable success stories include Cloudkick (acquired by Rackspace for \$50M), 280North (acquired by Motorola for \$20M), and Heroku (acquired by Salesforce for \$212M).

Crowd Funding Models

In addition to seed accelerators, further innovative solutions are required to help technology startups overcome the funding challenges they face. The crowd funding space is a good place to look for inspiration. Crowd funding (http://wikipedia.org/wiki/Crowd_funding) is a fairly new concept that stems from crowd sourcing, which is the process of delegating tasks or problems to a group of people through an open call. Crowd funding embraces the same concept and puts out a call to the public to invest in ideas in the form of intellectual or monetary support.

An example of a crowd funding initiative is Kickstarter (<http://kickstarter.com>), which provides funding to projects "from the worlds of music, film, art, technology, design, food, publishing and other creative fields." It is based on an all-or-nothing funding model; the invested funds are released to the creator only once a certain threshold has been reached. If creator fails to attract sufficient investment interest to reach the threshold, the funds are returned to the investors. This ensures that creators have the necessary funds to develop their projects.

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Another example is GrowVC (<http://growvc.com>), which relies on a community of startups, investors, and experts to provide investments for startups. The company charges its members a subscription fee, 75% of which is used to build a community fund and the remaining 25% offsets the company's operational expenses. The community fund is managed by GrowVC, but the community decides which startups receive investment. If there is a return on equity, the profits are divided between the "most successful decision makers" and GrowVC. The successful decisions makers are the ones that have first chosen to invest in a successful startup and have allocated a significant portion of their community fund to those startups. Furthermore sophisticated investors have the option of investing directly in the startups of their choice.

Towards a New Funding Model

In this article, a basis for a new approach to startup funding is proposed. This approach uses the force of the community (the crowd) to raise investments for startups and use an ecosystem (the collective) to provide a robust startup selection, mentoring, and investment process. The goal is to increase the chances of success and reduce risk by providing startups with the necessary tools to develop their businesses, access subsequent rounds of funding, and generate profits. At the same time, the intention of this approach is to help investors make informed decisions to satisfy their need for favourable risk/reward ratios.

While these suggestions need refinement and discussion before a comprehensive model can be developed, the purpose here is to stimulate thinking and debate about an alternative approach that builds on the existing crowd funding model and business ecosystem approaches. We propose an approach that has the following characteristics:

1. A trusted decision-making body. In order to provide a more robust crowd funding framework than is currently available in the market, there are numerous points of improvement that need to be considered. One of them is to define the limit of crowd sourcing in investment decisions and the other is to decide what extent crowd involvement is constructive without negatively impacting the startup's mission. Making investment decisions is not easy, even experienced investors get it wrong much of the time. Further complicating matters is that, compared to other types of investment, the crowd's decision-making is hampered by the relative lack of information because startups need to keep strategic information private at an early stage. An investor that does not have this information at hand is more likely to make a poor investment decision. Delegating investment decisions to a trusted body that works closely with the startup and keeps information confidential is a more realistic approach and promotes an environment of trust.

2. A governance structure. The involvement of the crowd can bring in important knowledge that can inform a company's strategic decisions. The idea is that the investors can become active in the venture and provide knowledge to build the business. However, it is important to be realistic; even the simplest project can turn into chaos as the number of stakeholders increase, reminding us of the old proverb: "Too many cooks spoil the broth." Large open source projects typically use a governance structure to ensure that the project does not diverge from its initial vision and mission. At the same time, contributors and committers are encouraged to have their say and, in most cases, if their comments and ideas are constructive there are accepted openly by the governance and community. Therefore, a collective investment model can benefit from this approach by improving products through constructive comments and suggestion, but it is

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important that governance is established to make sure the business evolves in an ideal environment.

A governance body would make the final decisions, but in case investors are not satisfied with the decision-making process, there should be policies in place to ensure they can express their opinions through syndication or voting. Other forms of governance are also possible, through which other parties would have the ability to influence decisions.

3. A board of experts. For this investment process to be viable there is a need for a board of experts who have sovereign status and diverse skill sets. This board is assigned the role of selecting startups for investment and mentoring. Members of the board should represent a diversity of backgrounds, but it is particularly important to have a strong representation on the board from members who have experience owning or operating successful startups or have experience in the financial sector. They can be contractors or permanent employees hired by the company operating the startup investment process.

The board would oversee the startup evaluation process on a regular basis. New startups would be selected from a pool of new candidates by applying predefined selection criteria based on market trends, customer demand, novelty, and growth potential. Startups that are already in the system should be evaluated on a periodic basis as well. This process ensures that investors are informed about progress and that the startups are delivering to agreed product milestones.

As the number of startup grows, a good approach would be to leverage a collective, or business ecosystem, by borrowing expertise from previously launched successful startups. Since these startups are part of a collective, the members of the startup can, in turn, sit on the board to assist other startups. This has the effect of increasing the size of the ecosystem by bringing

new startup businesses that can provide added value to the ecosystem in the form of expertise and complementary products. At the same time, the company operating the investment process reduces its costs by borrowing expertise from the collective and not contracting or hiring new experts.

4. A diversified portfolio. To reduce the level of risk, a certain level of diversification is needed. First of all, the investment amounts are small and one investor alone does not bear the whole risk of investment, but rather the risk is divided among many investors. The potential gains may be reduced if the investment is spread thinly, but it is up to the individual investors to decide how much they want to invest. Secondly, for less experienced investors, there would be an option to invest in a fund pool which provides a natural level of diversification. This is similar to a VC firm's value proposition to its investors, but the difference here is that any investor can participate and there is no lock-in or minimum investment amount. The investment decisions are made by the board of experts according to the need and growth potential of the startup.

Using a fund pool and accepting money from investors implies that the company running the fund should be registered with a financial regulation body or should have the status of an accredited investor. This ensures compliance with the financial laws of the country where the company is registered. In the US, the company must comply with rules and regulations set by the Securities and Exchange Commission; in Canada, the company should comply with the securities legislation of the jurisdiction in which it is registered.

5. An agile approach. It is important to adopt a lean and agile approach both on investments and product development; this ensures that opportunities are meeting market demand and that entrepreneurs are responding to feedback appropriately. Adopting an open business enviro-

New Solutions to the Funding Dilemma of Startups

Ali Kousari

onment where members can freely collaborate and trust each other provides a natural level of agility where products are constantly tested and feedback is provided through the ecosystem. Concerning investments, startups and investors have the advantage of failing cheaply. Investments are provided in small portions, each round of investment serves a specific purpose in the product life cycle.

6. A pathway to further investment. If a startup is unable to attract customers, corrective actions can be taken quickly to cut losses by either deciding on a new strategy or abandoning operations to avoid further losses. If a startup is successful, when the venture has reached a certain level of maturity, it can access larger investment opportunities through venture capitalists or angel investors, or it can be acquired by other players. In either case, seed investors would get their dues based on their percentage of equity participation. Note also that ventures can still be part of the ecosystem while generating revenue. A portion of the revenue would go back to the investors and the ecosystem to nurture other startups. When the company has reached the product commercialization stage and is generating profits, it has the option of remaining in the ecosystem or seeking other investment opportunities. At this stage, the bargaining power of the startup is very high and can reach high valuations to the benefit of the ecosystem and its seed investors.

7. A strong collective. As described in the April issue of the OSBR (<http://tinyurl.com/3emrvxd>), collectives harness diversity to achieve outcomes that participants could not achieve on their own. As part of a business ecosystem focused on refining business opportunities and attracting investment, a collective of technology startups can showcase their successes, build

trust among members, add connections, and learn from each other. By showcasing success stories of startups and the forces of the business ecosystem, it would be much easier to attract individual investors to the collective.

Conclusion

This article reviews the current funding challenges facing technology startups, describes innovative solutions for funding startups, and suggests a new approach to funding that combines crowd funding and collectives to both provide funding and nurture technology businesses in their early stages. The key takeaways from this article are:

1. Accessing VC or angel funding is an increasingly difficult task, especially for an initial round of funding. Alternative funding models such as seed accelerators, crowd funding, and collectives can be more effective in supporting early-stage companies and preparing entrepreneurs for subsequent rounds of funding.
2. Investment opportunities are no longer limited to large-sum transactions; investors and startups can both benefit from new approaches.
3. By leveraging collectives in strong entrepreneurial ecosystems, participants can benefit from diversity, more effective investment, and greater likelihood of success.

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OpenMedia.ca:

Casting an Open Net: A Leading-Edge Approach to Canada's Digital Future

From the Executive Summary:

"This report establishes the need for Internet openness to guide digital policy in Canada. The goal of digital policy should be to increase the openness of communications networks and devices, and expand access to those open networks. An open Internet is one where citizens are empowered to decide what practices, content, services and applications gain popularity, capture imaginations, and proliferate. This means a neutral network (governed by the Internet's founding principle, net neutrality), where connections are affordable, found at internationally comparable speeds, within reach of all Canadians and, ideally, ubiquitous. Internet openness is central to the success of our economy, our culture and our society."

<http://openmedia.ca/plan>

Upcoming Events

June 6 - 10

Net Change Week

Toronto, ON

"Net Change Week (NCW) is Canada's premier event on social tech for social change. The weeklong series of events features training workshops, evening programming with guest speakers, lab sessions and plenty of opportunity for networking. In its third year, Net Change continues to be committed to digital literacy and pushing the boundaries of technology's potential to yield greater impact."

<http://netchangeweek.ca/>

June 13 - 15

Ottawa Linux Symposium

Ottawa, ON

"The Linux Symposium has been an annual gathering of Linux and Free Software developers, professionals, and enthusiasts since 1999. We strive to be good community members and to provide a neutral environment and encourage open discussion."

<http://www.linuxsymposium.org/2011/>

June 14 (Toronto) and June 27 (Vancouver)

Eclipse DemoCamp

Toronto, ON and Vancouver, BC

"From June 1-30, 2011, we are inviting individuals to organize and attend Eclipse DemoCamps around the world to celebrate the Indigo release at the end of June. The Eclipse DemoCamps are an opportunity to showcase all of the cool technology being built by the Eclipse community. They are also an opportunity for you to meet Eclipse enthusiasts in your city.

A DemoCamp is an informal event for a group of Eclipse enthusiasts to meet up and demo what they are doing with Eclipse. The demos can be of research projects, Eclipse open source projects, applications based on Eclipse, commercial products using Eclipse or whatever you think might be of interest to the attendees. The only stipulation is that it must be Eclipse related. We especially want to hear about your work with Indigo projects!"

http://wiki.eclipse.org/Eclipse_DemoCamps_Indigo_2011

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The goal of the Open Source Business Resource is to provide quality and insightful content regarding the issues relevant to the development and commercialization of open source assets. We believe the best way to achieve this goal is through the contributions and feedback from experts within the business and open source communities.

OSBR readers are looking for practical ideas they can apply within their own organizations. They also appreciate a thorough exploration of the issues and emerging trends surrounding the business of open source. If you are considering contributing an article, start by asking yourself:

1. Does my research or experience provide any new insights or perspectives?
2. Do I often find myself having to explain this topic when I meet people as they are unaware of its relevance?
3. Do I believe that I could have saved myself time, money, and frustration if someone had explained to me the issues surrounding this topic?
4. Am I constantly correcting misconceptions regarding this topic?
5. Am I considered to be an expert in this field? For example, do I present my research or experience at conferences?

If your answer to any of these questions is "yes," then your topic is probably of interest to OSBR readers.

When writing your article, keep the following points in mind:

1. Thoroughly examine the topic; don't leave the reader wishing for more.
2. Know your central theme and stick to it.
3. Demonstrate your depth of understanding for the topic, and that you have considered its benefits, possible outcomes, and applicability.
4. Write in third-person formal style. Formal first-person style (we only) may also be acceptable.

These guidelines should assist in the process of translating your expertise into a focused article which adds to the knowledgeable resources available through the OSBR.

Upcoming Editorial Themes

July 2011: Women Entrepreneurs

Formatting Guidelines:

Indicate if your submission has been previously published elsewhere.

Do not send articles shorter than 1500 words or longer than 3000 words.

Begin with a thought-provoking quotation that matches the spirit of the article. Research the source of your quotation in order to provide proper attribution.

Include a 2-3 paragraph abstract that provides the key messages you will be presenting in the article.

Any quotations or references within the article text need attribution. The URL to an online reference is preferred; where no online reference exists, include the name of the person and the full title of the article or book containing the referenced text. If the reference is from a personal communication, ensure that you have permission to use the quote and include a comment to that effect.

Provide a 2-3 paragraph conclusion that summarizes the article's main points and leaves the reader with the most important messages.

If this is your first article, include a 75-150 word biography.

If there are any additional texts that would be of interest to readers, include their full title and location URL.

Include 5 keywords for the article's metadata to assist search engines in finding your article.

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