

Archives of Business Administration and Management

Review Article

York JM. Arch Bus Adm Manag: ABAM-104. DOI: 10.29011/ABAM-104. 100004

Putting Lean Startup into Perspective: A Novel Approach for Discovering and Developing a Successful Business Model

John Michael York*

Orfalea College of Business, California Polytechnic State University, San Luis Obispo, USA

*Corresponding author: John Michael York, Pharm.D., M.B.A., Orfalea College of Business, California Polytechnic State University, San Luis Obispo, USA. Tel: +18052382485; Email: joyork@calpoly.edu

Citation: York JM (2018) Putting Lean Startup into Perspective: A Novel Approach for Discovering and Developing a Successful Business Model. Arch Bus Adm Manag: ABAM-104. DOI: 10.29011/ABAM-104. 100004

Received Date: 16 March, 2018; Accepted Date: 13 April, 2018; Published Date: 24 April, 2018

Abstract

This paper examines the "lean startup" concept and provides an overview of its key components. In examining "lean startup," this review delves into the two core pieces: (1) search and (2) execution. In the search phase, the discussion explores the journey that the entrepreneur needs to take to identify the right target customer and archetype, as well as the most important "jobs to be done" in either addressing a "pain point" or creating a customer gain. These pains and gains are used to create a value proposition of the essential values a solution must offer. From this point, the model moves to the development of a minimum viable product (MVP) and the search for product/market fit. Next, the model transitions to the phase involved with scaling the startup and execution of the business. This review will focus on key components for a startup to create value and deliver the value proposition from an operational vantage to customers. Value creation will start with understanding different markets and how to operate in them with the use of several constructs including the business model canvas. The value creation process involves several critical pieces: (1) identifying a customer-based value proposition; (2) ascertaining an appropriate market size; (3) creating and testing with a MVP; (4) identifying a revenue model; (5) selecting and developing an appropriate channel strategy; and (5) developing key marketing activities using the "marketing funnel." The paper closes by examining the balance of revenue model with cost structure, net present value, and cash burn analysis, all of which are essential for financial viability.

Keywords: Business model canvas, Elements of value, Entrepreneurship, Lean startup, Minimum viable product, Product/ market fit, Value proposition canvas

Understanding Lean Startup

The Basis for Lean Startup

Lean startup is a framework for efficiently developing entrepreneurial ideas. This approach was born out of the lean manufacturing principles, originated with the Toyota Production System, which centered upon identifying and minimization waste [1]. Steve Blank, a technology sector serial entrepreneur, pioneered lean and introduced the concept of customer development through the development, testing, and refinement of hypothesis through direct conversations with the customer, as discussed in his 2006 book, *The Four Steps to Epiphany* [2]. In 2012, he provided a

further and more practical discussion of the concept in *The Startup* Owner's Manual [3]. Lean startup is something that Blank and the National Science Foundation (NSF) has embraced in their efforts with the Innovation Corps (I-CorpsTM) program. Eric Ries, another serial entrepreneur in the technology space and one of Blank's students, popularized the lean framework with his 2008 book *The Lean Startup* and his blogging activities on the topic [4]. Alex Osterwalder and Yves Pigneur contributed this framework through their two books, Business Model Generation and Value Proposition Design [5,6]. Other contributors to the development of this methodology include: (1) Nathan Fur and Paul Ahlstrom of Nail It and Scale It [7]; (2) Brant Cooper and Patrick Vlaskovits of the Entrepreneur's Guide to Customer Development [8]; and (3) Ash Maurya of Running Lean [9]. Blank and Ries have been the most active of all these authors in popularizing this approach. Blank has taught this methodology at the University of California,

Berkeley, Columbia University, and Stanford University. He has worked closely with the NSF to use this framework as an efficient path for academic entrepreneurs to follow in discovering proper product/market fit based upon customer needs.

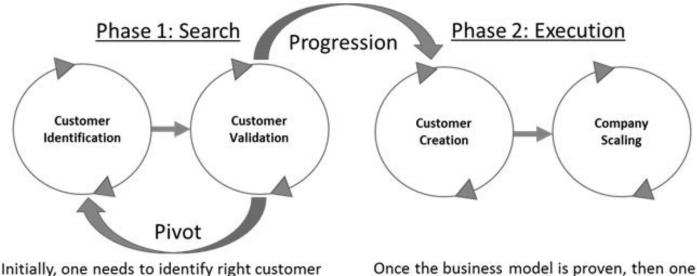
The lean startup offers an innovative process for entrepreneurs to discover and develop business opportunities efficiently. Unfortunately, many do not fully implement (or adequately) this process due to a limited understanding of its fundamental concepts. This paper examines lean startup concepts, the business model and value proposition canvases, market sizing, and relevant financial frameworks.

Lean Startup: Basic Concepts

The lean startup concept consists of four iterative phases.

Blank breaks them down to search for the business model and execution of the business model (Figure 1). Phase 1 first involves searching for the business model. This period focuses on exploring to identify and confirm customer needs, product/market fit, and a repeatable sales model. The entrepreneur starts with the customer discovery/development phase. This piece is critical as it concentrates on understanding customer problems and needs, otherwise referred to as pains, gains, and job to do. Next, the entrepreneur focuses on establishing customer validation based on a minimum viable product and building a replicable sales model. Phase 2 centers on the execution of the business model by creating customers, driving demand, and finally developing the company. At this point, the firm's focus changes from learning to scaling and to growing the business.

Figure 1: Blank's Steps to Lean Startup [3].



Initially, one needs to identify right customer and product to establish product/market fit and to validate the business model Once the business model is proven, then one can progress it along towards a real business by scaling and creating growth.

Central to the learning process is Ries's build-measure-learn feedback-loop (Figure 2). The idea of the feedback loop is that the entrepreneur should start with a minimal viable product into the hands of customer quickly to receive feedback to reject or validate assumptions. Thus, the goal of lean is minimizing the time through the feedback loop, implying that the startups need to build faster, measure faster, and learn more quickly.

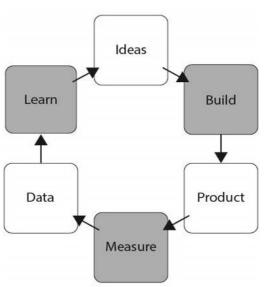


Figure 2: Ries's Build-Measure-Learn Loop [4].

Tied to this learning process is the concept of product/ market fit. Marc Andreessen of Andreessen Horowitz describes it as, "being in a good market with a product that can satisfy that market, or that the startup has built something people want [10]." Blank refines this definition of fit as for whether the startup has found a repeatable and scalable sales model before the venture can proceed to the next phase and scale up the business [3].

One essential concept related to product/market fit is for the entrepreneur to understand what type of market his/her product will engage. As Blank points out, product and market relationships fit one of the several strategies (Table 1) [3].

Table 1: Market Types [3].

Approach	Strategy Details
New Product/ Existing Market	While an existing market approach offers a tremendous market size and opportunity to capture a defined piece quickly, it presents significant challenges to entry. This challenge is because of the number of competitors and entrenched market leaders. To this end, it is considered a "red ocean" strategy. As the focus here on capturing share, the company will have to compete through strong product differentiation and branding efforts.
New Product/ New Market	While a new market, or "blue ocean" strategy, offers the opportunity to the entrepreneur, it involves a lot of work. The company will need to spend much effort in defining, sizing, and cultivating the market. It may not realize the full potential of the market until several years in the market, resulting in a "hockey stick" type of growth over time.
New Product/ Re-segmented in an Existing Market	This strategy involves re-segmenting as either a low-cost participant or niche entrant. It allows the product to capture a defined share of the market and achieve quick growth. It may not let the product to enjoy the full potential of the market. This scenario is what Clayton Christenson proposes with his model of disruptive innovation [11].
Cloning	This approach involves cloning a business model successful in another country.

Thus, it is critical for the entrepreneur to understand the product market scenario he/she will engage to establish the right framework for his/her discovery of customer archetypes, product/ market fit, and revenue model correctly. A useful tool is a product/ market fit canvas (Table 2). This framework is broken up into two principal sections: (1) the customer segment and (2) the product segment. These two sections contain elements from the value side of the business model canvas, the competitive landscape,

customer experience, and key metrics. To the entrepreneur, these pieces are essential in being able to tie together customer needs and experience, competitive factors, product attributes, and critical parameters. According to San Diego investor, Chris Rowan, the product/market fit canvas helps the entrepreneur document, test, and revise its hypotheses as it strives to validate its product and business model [13].

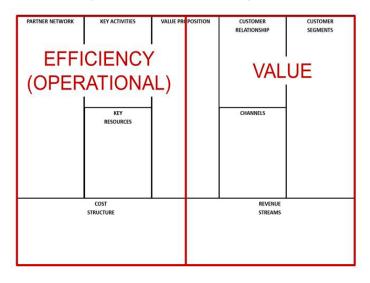
Table 2: Elements of the Product/Market Fit Canvas [12].

Customer Segment	Product or Service
Characteristics and Jobs to Be Done Persona or archetype of a typical customer Job(s) he/she are trying to get done.	Alternatives Approaches (e.g., tools, products, services) your customers are using currently to get their job(s) done.
Problems and Needs Why do your customers need your product or service to get their job(s) done?	Key Features The essential parts of your product or service to meet your customer requirements and their problem.
Channel The route by which your customers will acquire your product or service.	Value for the Channel The channel's value will derive by offering and selling your product or service.
User Experience What does the customer do with the product to realize its value.	Key Metrics The key things to measure to know if your customer is getting actual value and will help you understand if your product or service has achieved Product/ Market Fit.

Business Model Canvas (BMC) Introduction

The NSF uses the lean curricula are part of its I-Corps[™] program. The process begins with the search piece that Steve Blank highlights and builds on Osterwalder and Pigneur's business model canvas or BMC (Figure 4).

Figure 3: Osterwalder's and Pigneur's Business Model Canvas Broken into VALUE (Right) and EFFICIENCY (Left) Segments [5].



Blank defines this model as for how a company creates value for itself while delivering products and services to others. The BMC consists of nine pieces, built around the value proposition. The right-hand side of the canvas focuses on value creation in the marketplace and includes customer segments, customer relationships, channels, and revenue streams. Osterwalder and Pigneur title the side VALUE [5].

The left-hand side focuses on the operational side a firm must have to deliver the value proposition. Osterwalder and Pigneur label this side EFFICIENCY [5]. This piece includes critical partners, resources, activities, and cost structure. Overall, the operational side supports the value side of the canvas, and, most importantly, the value and revenue model must be substantial and sustainable enough to cover a firm's expenses.

BMC Creating the VALUE Side of the Canvas via Customer Discovery/Development

Value Proposition

At the center of the business model canvas is the value proposition. This section is about identifying the customer problem, gain, or job to do. Unfortunately, most entrepreneurs get this part wrong; they focus on ONE's IDEA or PRODUCT, or their "field of dreams."

Gary Pisano in his June 2015 *Harvard Business Review* article titled, "You Need an Innovation Strategy," points out that one must ask how innovation will create value for potential customers [14]. He continues on that unless the product or service induces the customer to pay more, save them money, or provide a more substantial society benefit (e.g., improved health, safety, security, clean water), the innovation does not offer value.

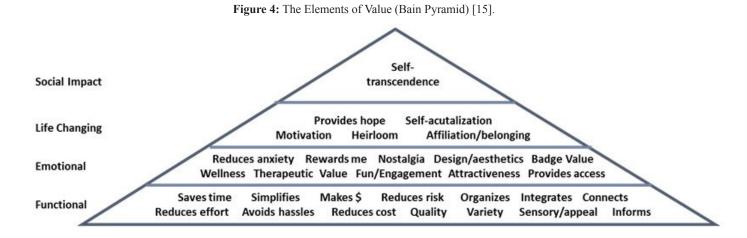
It is about identifying customer's problems and needs, otherwise known as pains and gains, to create value. It is also about satisfying these needs or solving the problem, otherwise known as the job to do. It is about understanding the customer and listening to him/her. It is because so many entrepreneurs in the science space miss these points that the NSF has advanced the lean curriculum.

Pisano characterizes this process as a "demand-pull" strategy [14]. Firms such as Corning and Proctor & Gamble use this approach in creating new products or finding value with present technologies. Thus, a successful discovery process starts with getting the value proposition correct and getting this from talking with the right customers.

One challenge that exists with entrepreneurs is that they fail to characterize what a value proposition is. Many default to product features rather than on the benefits. Eric Almquist and colleagues describe these values in their September 2016 *Harvard*

Business Review article titled, "The Elements of Value." In this paper, they highlight the pyramid of 30 different elements (Figure 5), a framework developed from 30 years of customer research at Bain and Company, as a way to characterize and categorize these values [15]. These elements are organized: (1) "functional"

at the base; (2) "emotional" layered on "functional"; (3) "lifechanging" layered on "emotional"; and (4) "social impact" at the top. Almquist illustrates further (Table 3) how different industries fulfill specific value sets [15].



Auto Insurance	Apparel Retail	Brokerage	Consumer Banking	Credit Cards	Discount Retail	Food and Beverages	Grocery	Smart Phones	TV Service Providers
Provides Access	Avoids Hassles	Heirloom	Avoids Hassles	Avoids Hassles	Quality	Design/ Aesthetics	Quality	Connects	Design/ Aesthetics
Quality	Design/ Aesthetics	Makes Money	Heirloom	Heirloom	Reduces Cost	Quality	Reduces Cost	Organizes	Fun/ Entertainment
Reduces Anxiety	Quality	Provides Access	Provides Access	Provides Access	Rewards Me	Sensory Appeal	Rewards Me	Quality	Quality
Reduces Cost	Saves Time	Quality	Quality	Quality	Saves Time	Therapeutic Value	Sensory Appeal	Reduces Effort	Reduces Cost
Variety	Variety	Variety	Reduces Anxiety	Rewards Me	Variety	Variety	Variety	Variety	Variety

Table 3:	Example of	Value Sets	by I	Industry	[15]].
----------	------------	------------	------	----------	------	----

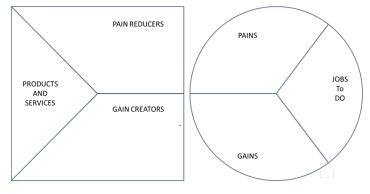
In addition to using the business model canvas, the NSF program uses a value proposition canvas (Figure 5) for the entrepreneur to put his/her hypothesis on these canvases. In the value maps, first, there are pains, which are listed in the circle on the right-hand side. These include the critical problems, disasters, losses that this customer/user needs to fix or hopes never to occur. These include undesired outcomes (e.g., functional, emotional, ancillary), obstacles to prevent a customer from even starting with a job, and risks as to what could go wrong with critical negative consequences. These are addressed with pain relievers (e.g., savings, increased efficiency, making the customer feel better,

reduced risks, elimination of barriers, elimination of worry/stress, or wiping out of fear or self-consciousness) in the square on the left side of the canvas.

Second, there are gains. These are outcomes and benefits your customer wants. These include required gains (i.e., most fundamental thing we need), expected gains (i.e., necessary things we expect), desired gains (i.e., benefits we would love to have), and unexpected gains (i.e., exceed customer desires). These are addressed with gain creators (e.g., savings, meet/exceed expectations, outperform competitors, fill a customer desire or aspiration, or produce a positive outcome). These are how your product/services create customer gains or help them to achieve something that they could not do without it.

The third piece involves the jobs to do. In essence, what your customer is trying to get done, whether it is a job or task, the problem to solve, or a need to satisfy. Examples include functional jobs (i.e., perform or complete a specific task), a social job (e.g., want to look good, gain power or status, or perception by others), or a personal/emotional job (e.g., an emotional state such as feeling good or secure). The value map on the left side then allows one to list what the startup offers to its customer, which is what customers "seen" when they look at the product or service. Examples include physical (e.g., manufactured goods), intangible (e.g., copyrights, customer support), digital (e.g., music downloads, software), and financial (e.g., investments, insurance, and financing).

Figure 5: Osterwalder's and Pigneur's Value Proposition Canvas [6].



Customer Segments

The first part of the customer discovery/development process involves identifying hypotheses, otherwise known as educated guesses on customer types and value propositions. Most critical to the value proposition is identifying the right customers or customer segments. This piece is located in right corner of the business model canvas. A startup needs to understand who its customers are, what roles they play, and why would they buy the product or service from the startup to define the company's or product's value proposition. Blank points out that they do not exist to buy from, but rather that the startup exists for the customer [3]. He adds that in a lean startup, one needs to identify the different customer-types in the buying process. These include the end user or beneficiary, the payer, the influencer, and the saboteur. Additionally, there is one more customer-type, the gatekeeper. The entrepreneur also needs to define a profile, or archetype, for each customer type.

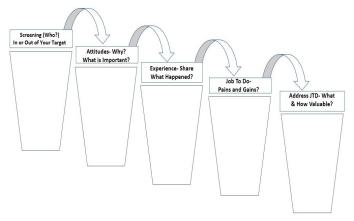
Getting Out of the Building (GOOB) to Understand the Customer and His/Her Needs

To get a better understanding of these pieces, once the entrepreneur makes his/her guesses, "it is time to get out of the

building [3]. It is through the interviewing of potential customers, partners, and vendors that the entrepreneur can gain insight to understand better who the customer is, what his/her pains and gains are, and how significant these problems are. These interviews are about exploring the customer's situation by asking open-ended and rating type of questions. These sessions are not about trying to sell a product or trying to back a prospect into a corner with leading or yes/no kinds of queries (something that many first-timers do). These interviews should not be product-related, as the goal is to gain insights into the customer situation, needs, and job to be done.

Instead, the interview should follow a natural conversational flow that runs through the following funnels (Figure 6). These include: (1) qualification; (2) attitudes; (3) experience; (4) pain points and job to do (and how significant); (5) what the customer may have done to address the issue; and (6) what might comprise an ideal or potential solution (i.e., if he/she had a magic wand). Additionally, the interview might seek to query about various business model assumptions to validate or disprove hypotheses put on the BMC. These involve verifying: (1) customer archetype; (2) customer value propositions; (3) how the customer would ideally be engaged with the product or company; (4) channels by which the customer would purchase the product; and (5) ways the customer might pay for the product to determine an appropriate revenue model.

Figure 6: Flow of an Interview Using Question Funnels to Focus Customer Feedback



This process may proceed several times over until the entrepreneur has identified the real customers and their significant needs to address. The entrepreneur should try to get as many interviews as possible. The NSF encourages at least thirty during Phase 1 and 2 and one hundred during the national phase [16,17].

It is the learnings from these interviews that the entrepreneur gains insight and refines his/her target customers, their profiles, their pains, gains, job to do, and ultimately the value proposition.

For each customer, the entrepreneur needs to recognize that there may be a different value proposition. The workup of these interviews should always relate back to: (1) what did one learn that was significant in the discussion; (2) what changes would you make in the business model canvas; and (3) what attributes might make up an MPV. It is through these learning's that the entrepreneur realizes that he/she may need to pivot to another type of product to deliver value. Better to make these changes during the customer discovery/development stage rather than having a fullscale product in the market with an integrated operation behind a product that misses the mark.

Sizing the Market Opportunity Based on Customer Segments

In identifying the customer segments and value proposition, it is critical to developing a hypothesis regarding the size of the market. Defining the market size is one of the areas that the business model canvas does not address, though Blank does discuss this concept in detail in his book, *The Startup Owner's* *Manual* [3]. Nothing is worse than having to conduct extensive customer research to identify the customer and his/her job to do, and then to discover that the market opportunity might be under a million or perhaps a few million dollars. Angel investors call these opportunities lifestyle businesses, which might not be worthy of their investment [6,16,18,19]. Thus, sizing the market is critical to determine if the new venture is worthy of your time, effort, and money, and whether others will want to back the investment.

Thus, market opportunities involve three key pieces (Table 3) [2]. Total available market (TAM), serviceable available market (SAM), and serviceable obtainable market (SOM) provide a starting point to establish a market size hypothesis [3]. An entrepreneur can estimate these segments in one of the approaches: (1) "top-down" or (2) "bottom-up." Blank notes that a "top-down" approach can serve as an excellent first step [3]. The entrepreneur can use a variety of resources including industry-analyst and market research reports, university libraries, and competitor data. This information can complement discussions with investors and customers to help the entrepreneur size the overall market.

Table 4: Market Size Components	(TAM, SAM, and SOM) [20].
---------------------------------	---------------------------

Segment	Definition	
ТАМ	The universe of potential users or customers.	TAM Total Available Market
SAM	Future-users in a market that presents with rapid and predictable growth that one can serve.	Serviceable Available Market Som Serviceable Obtainable
SOM	The opportunity to attract active users and customers or the "target market."	Market

The metrics to define the market can vary and include customers, eyeballs, users, units, or dollars. The key here is to be consistent in using the same metric when comparing TAM, SAM, and SOM. However, it is essential to be able to translate these data ultimately to some financial number.

However, some of the report data involve past data, which may not be useful in predicting the future. Therefore, as Blank emphasizes, an entrepreneur should try to use a "bottoms up" approach, which may offer a more realistic estimate for a startup and credible to investors [3]. This approach involves looking at population size, then segmenting the population based upon various socioeconomic, demographic, customer characteristics in line with the previously defined customer archetypes (this includes both users and payers), and assumptions about the percentage of customers who would be willing to pay for the product. For example, for a breast cancer drug, first initially look at population estimates of the incidence of new and recurrent disease from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) database [21]. These data would represent the TAM. Then, apply assumptions around disease and socioeconomic characteristics to identify the SAM. Finally, estimate the number of patients who our firm could reach based upon the number patients in the late stages of the disease (usually the first indication for many cancer drugs) and insurance coverage. This figure would become the SOM. Finally, the average dose to use, schedule, and sometimes the treatment would be given can be used to estimate the number of units. Ultimately, applying the average price per unit of current treatments for breast cancer can determine the market size in actual dollars.

Another market sizing approach involves venture capitalist

Fred Wilson's "30/10/10" law for mobile/web markets [3,22]. Wilson observed the law consistently predicted user activity metrics. These include: (1) 30% of registered users and individuals downloading will use the service annually; (2) 10% of the population will use it daily; and (3) concurrent users of the service will seldom exceed 10% of the number of daily users.

Revenue Models

As part of this process of refining the MVP that the startup begins to define and test a reproducible revenue model [3,5]. Again, the entrepreneur starts with hypotheses regarding the type of revenue model and channel for delivery. Blank and Osterwalder describe several different types of revenue models [5]. A direct model involves a direct sales and service relationship with customers, such as a web-based product business (e.g., Dell Computer), and captures the most substantial amount of value from the customer. Another model involves working through a channel or intermediary, such as a product sold through a wholesaler and retail outlet (e.g., beer as a consumable). Most consumer product through outlets moves through distributors, who will take a percentage of the product's price, and some will work directly with the retailer. A two-sided model is one in which users can access a service or product for free. Google is an excellent example in which users use the portal at no charge, with advertising and Google ad words and web placement monetizing the relationship. Facebook is another example of such a relationship. A subscription model is another model that involves the customer paying a recurring membership fee to access the service (e.g., Dollar Shave Club). Many software offerings (e.g., Microsoft Office, Adobe's software suite, and Survey Monkey) are using these models these days. A final model involves the tiered level of membership model. This model offers different levels of customer participation and benefits. At lower levels, customers could access essential service free. For higher service levels, customers pay a monthly subscription. LinkedIn is an excellent example of this model type.

Once again, the entrepreneur develops his/her hypotheses and uses the build-measure-learn process. He/she tests the model directly with customers by "getting out of the office" or on the web using landing pages and A/B tests. The insights gained from these interviews and experiments help to validate and refine the revenue and sales model.

Channels

This testing can also determine whether the sales model should be direct or through a channel [3,5]. Channels are how the product or service gets to the customer. They do not involve a particular sales or marketing tactic. Some individuals might confuse this section with customer relationships, which represents the tactical portion of the canvas that is included in such activities. Channels can be physical to maximize distribution reach of

physical product. Most consumer goods, food products, alcoholic beverages, and pharmaceutical products require such distribution. Intermediaries (e.g., wholesalers), and resellers (e.g., retail outlets), play a significant role in distributing, presenting, and gaining the final sale from the consumer. Sometimes these parties play a significant role in accounting for the product's location along with handling various legal and tax issues. These services are associated with regulated products (e.g., alcohol, firearms, tobacco, and pharmaceuticals). Based upon the type of product, the uniqueness of the brand, the channel, the competitiveness of the category, and regulatory requirements, channel and retail partners can absorb anywhere from 20% to 60% of the retail price, thereby cutting a firm's margins [3]. Additionally, retail partners can require stocking fees and strong pull advertising. Some large retailers (e.g., Walmart) use point of purchase, in which they will stock the product, but credit the sale when the consumer has purchased it [23]. Thus, a startup needs to see the value of the channel and the uniqueness of its product to make a distribution through wholesalers and retailers a feasible that fits well with the enterprise's sales/revenue model and objectives.

As startups need to maximize their margins, many seek direct routes of distribution with their customers. Some may directly distribute their products to local retailers. Others will sell directly from their outlets or ship directly to the consumer. With the advent of e-commerce, some may use digital channels, via the web and mobile routes, as the most common direct route for interacting with the consumer. Thus, these firms will need to have different marketing, warehousing, and delivery capabilities to engage the customer, store inventory, and account for the product within the system.

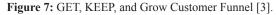
For example, in the wine industry, many boutique wineries or breweries prefer to sell direct through their tasting room, their webpage, and their wine club. Usually, these businesses limit their product and distribution (i.e., generally under 5,000 cases for wine) and sell directly to maximize revenue coming from each unit. Alternatively, some will seek to become a national brand and try to scale (i.e., 100,000 cases for wine). Hence, they will need to work with distributors, retailers, and restaurants to realize that scale; however, they will achieve significantly less revenue per bottle due to the share each distribution segment obtains. The net result of large-scale distribution here is a national brand that might make for an attractive acquisition target. Examples of such have included the Wonderful Company's acquisition of Justin Wine and Duvel Moortgat's investment into Firestone Beer.

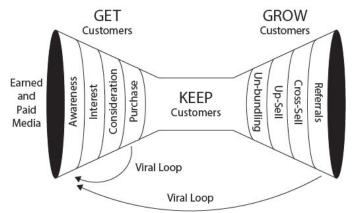
To determine which avenue makes the most sense for a startup, Blank recommends again "getting out of the office" to talk to customers and use web-based A/B testing strategies. Entrepreneurs need to test their hypotheses relative to which channel strategies makes the most sense for their business. They

need to discover what their customer preferences are and what the competition may be doing. Early on, the startup's model may make most sense using a direct physical or web channel. However, as the firm's business grows and it wishes to cross the chasm from the early adopters to the early majority, it may need to employ a new distribution strategy to reach the broader audience in the most efficient way possible [3,25]. Again, such decisions should be tested using the build-measure-learn framework.

Customer Relationships

The final piece in the value creation side of the BMC involves customer relationships. This piece consists of the marketing funnel that entrepreneurs need to become familiar with and use with all their efforts to engaging, maintaining, and growing their customer base and revenues. What the customer relationships piece refers to is how a startup will GET, KEEP, and GROW its customers. Blank points out that the GROW portion ranks as a critical consideration for any startup [3]. This process involves the flow of customers from acquisition to maintenance to the expansion of the relationship with them, as depicted in the dual funnel diagram illustrated in (Figure 7).





Similar to channels, GET, KEEP, and GROW strategies will vary for physical versus web/mobile business. The GET side of customer relationship reflects the "customer journey" in getting to know, trust, try, and buy one's product or service. For physical products, the approach for the GET side of the funnel (left side) involves creating awareness, and then moving the customer through interest, consideration, and finally to the purchase phase of the relationship. AIDA or AEDA can also characterize the GET side in describing the steps involving awareness, interest/engagement, decision, and acquisition.

Firms will need to test to determine which tactics will create the most significant attention or brand awareness to a product. Such programs can be earned or free. Earned media include public relations, news, interviews, blogs, brochures, review, and Twitter posts. For example, a presidential candidate's use of Twitter and the new media through daily ad hoc interviews illustrates how an individual can exploit these tactics. Paid media include ads and promotions in print, radio, television, direct mail, telemarketing, coupons, and online media channels. Much of traditional advertising of national products use these avenues.

For web/mobile channels, the strategy for the GET side involves acquisition and activation. Tactics to support web/mobile strategies include websites, app stores, Search Engine Marketing (SEM) or Search Engine Optimization (SEO), email, blogs, social networks (e.g., Twitter, Facebook, Instagram, Pinterest), reviews, public relations, free trials, and home/landing pages. Firms for both physical and web/mobile products will then leverage purchasing and established customers to generate referrals via a viral loop, either through word-of-mouth or on the net e-recommendations.

Once a startup has engaged and captured the customer, then the customer relationship strategy is to KEEP customers. For both physical and web/mobile channels, the KEEP strategy involves interaction and retention. The secret to KEEP is the continuing of the engagement of the customer and the making the customer feel as a part of the community. Firms with physical products will use loyalty programs, product updates, customer surveys, and customer check-in calls. For mobile/web product firms, marketers utilize a mix of tactics including customization, user's groups, blogs, online help, product tips/bulletins, outreach programs, and affiliates.

The final piece involves how the firm will GROW its relationship with its customers. The second funnel on the right side of Figure 7 illustrates how a firm expands the customer relationship. The strategy for GROW, with both physical and mobile/web products, involves creating new revenue and referrals. For both types of products, key tactics involve upselling, crossselling, and unbundling activities. Firms with physical products may unbundle the product to maximize revenue. Firms with mobile/web may use upgrades, contests, and reorders. Both rely on leveraging relationships and referrals to create a viral loop to engage new customers in the GET funnel.

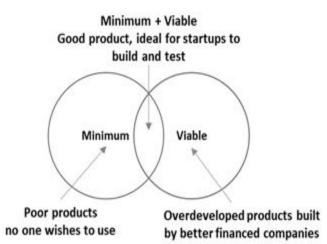
Startups are to develop hypotheses and test all GET, KEEP, and GROW strategies and tactics. Some mobile/web firms will run many experiments (also termed "hacking") to determine the optimal strategy, tactics, and messages visa vie metrics from landing page tests with tracking of click-throughs, Google metrics, A/B testing, and net promoter score assessment. Many physical products are using similar techniques via the web. They also will test the impact of a direct mail campaign or a television ad by tying orders into specific websites, 800 numbers, or coupon codes. For example, Intuit does a masterful job of testing of new versions of its physical, such as Turbo Tax or Quicken, through A/B testing of various campaigns using unique websites and 800 numbers [4,25]. In fact, before the company releases a new version, it may run a

hundred different tests to optimize its promotional mix.

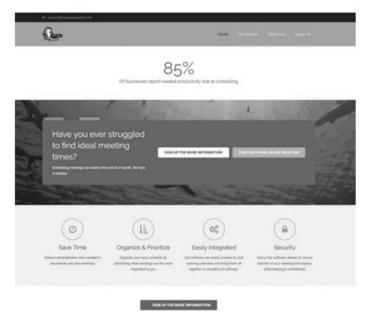
Validating an MVP

Once an entrepreneur has identified his/her customers, their archetypes, and value, he/she can proceed to the next stage, which is validation. This stage involves the development and testing of a minimally viable product or MVP (Figure 8) to see if the customer cares about the solution. In product development, the MVP is the product with the highest return on investment versus risk. Here the entrepreneur creates a prototype. This prototype can take many forms, such as a model, photo, picture, a PowerPoint slide, or a web landing page (Figure 9). It should consider the most minimal features to get the job done. For example, if one were to move from point A to B, evaluate the option of a skateboard rather than a high-end sports car, or for baking a wedding cake, consider a cupcake rather than a full cake.

Figure 8: Depicting What an MVP Seeks to Achieve.



In pulling together an MVP, it is essential to lay out several important considerations. The first involves identifying assumptions about the customer needs, the market, and the product. The second is to map the customer requirements to the product needs. The third is to lay out one or two most minimal products. The fourth is to identify various risks including technical, legal, and market. Finally, one needs to map out a testing plan involving who to target, how to target, what way to test, and relevant metrics. One important metric is a minimum threshold for success. A good example is characterized by how startups set limits for funding with their Kickstarter campaigns. Figure 9: Example of an MVP Landing Page Prototype.



When testing, the entrepreneur then needs "get out of the office" again to obtain customer feedback on the MVP. Also, the entrepreneur can test some MVP types, such as web or products and services, by creating a landing page with a call to action. Based on the feedback gained from interviews and web testing, the entrepreneur can use the insight obtained to proceed with the MVP, refine it, or pivot to another MVP or value proposition. This process is Ries's build-measure-learn loop. The faster the entrepreneur can gain feedback, the better off he/she will be to identify the venture's MVP.

A great example of a product moving quickly through such a process involves the online cloud storage service, Dropbox. The entrepreneurial team initially devised the cloud storage platform as a prototypical landing page, which then captured interest based upon a call to action button. Because of this testing and the data obtained, the firm gained solid direction that it had product/market fit, which led to later-stage funding to bring the concept to reality and, ultimately, to highly successful service.

Creating the EFFICIENCY Side via Operations and Cost Structure of the BMC

Much of lean startup emphasizes the discovery side to identify product/market fit and a reproducible revenue model. A

startup needs to map out its OPERATIONAL or EFFICIENCY side (the left-hand side of the business model canvas) and to discover the most efficient way to deliver its proposed value proposition. It is critical that a startup works on this side of the equation to identify what the company needs, and at what cost, to deliver the value proposition and derive revenue. This side of the canvas consists of the following elements: (1) key resources; (2) key activities; (3) key partners; and (4) cost structure. Again, as the startup develops the right side of its business model, it needs to identify hypotheses and test them to determine which of these guesses fit best to optimize the delivery of the value proposition and at a reasonable cost.

Key Resources

Concerning critical resources (Table 5), an entrepreneur needs to identify what physical, intellectual property, people (i.e., human resources), and capital (i.e., financial) resources (remembered as PIPPC) are essential to the business to operate successfully [5]. Additionally, he/she need to assess how to use them most efficiently.

Physical Assets (P)

The first P represents the physical assets. Included in this category are manufacturing facilities, buildings, vehicles, machines, systems, web platforms, point-of-sales systems, information technology infrastructure, and distribution networks. These are incredibly capital-intensive and generally, represent fixed costs. Most physical product companies (e.g., auto manufacturers, computer equipment), strong distribution companies (e.g., Amazon), and retailers (e.g., Walmart) require such assets [5].

Intellectual Property (IP)

After P, the IP represents those intellectual assets including patents (e.g., utility, design), copyrights, brands, trade and service marks, and trade secrets (e.g., proprietary knowledge, partnerships, and customer databases). In particular, these are critical in the technology and life science business models. While these resources can be difficult, time-consuming, and involve sound investment to develop; they can offer significant value. For example, the strength of a drug's patent is critical to a pharmaceutical or a biotech firm. It allows the firm to move forward its extensive research and development program in order recoup the huge drug development investment over a period of seven to twenty years later. Copyrights are critical in the software, publishing, and entertainment businesses to reward and protect original works.

People (P)

The second P is for people. This category involves personnel and talent, who are critical to a business. In some firms, the essential staff is even more critical. This capability is crucial in knowledgeintensive, research and development, engineering, design, and creative industries. For example, scientists and scientifically trained personnel are essential to pharmaceutical and biotech companies, as these firms predicate their business models upon experienced researchers, clinical development, regulatory, marketing, and sales personnel. Another example involves tech companies, who rely on experienced engineers and web developers to create their intellectual property and to speed their products to market. The entertainment industry relies heavily on its talent. For example, some firms (e.g., Disney) base their value on the hundreds of artists and developers to put out their creative products. In the consulting industry, trained consultants represent the essential power to solve problems. Finally, in health care, licensed professionals such as doctors, nurses, and pharmacists are necessary to deliver proper care to patients.

Capital (C)

The C at the end represents capital, the financial piece. A strong capital position involves cash flow, credit, and stock ownership (and options). These elements are required for an entity to exist. The ability to acquire (and maintain) the physical, intellectual, and human assets cannot occur without cash, credit, working capital, and stock. Thus, a startup will need to money from its founders, non-dilutive sources (e.g., Small Business Innovation Research and Department of Defense Grants), dilutive sources (e.g., Angels, Venture Capital), and credit from banks. These funding streams will ensure that the firm can acquire the necessary assets and manage its cash position efficient. Remember that most firms do not fail because they do not have a great idea, but rather because they cannot financially sustain themselves.

Testing Key Resource Assumptions

It is through the lean startup process that an entrepreneur identifies and tests his/her best guesses around what resources it needs to operationalize its value proposition. He/she will need to "get out of the office" once again to talk with industry experts, intellectual property attorneys, potential employees, investors, and bankers to refine his/her hypotheses in this critical space. Why this space is so critical is that these assets not only establish the foundation for how the company will deliver value, but also require significant financial resources and proper cash and credit management so the firm can move from discovery, to delivery, to execution, and to scaling (and financial success). The ability to articulate the massing of these assets and the proper management of these resources is critical in gaining investment "buy-in," especially as one moves from "seed" stage to later rounds of funding. Unfortunately, advocates of lean do not emphasize the importance of getting this piece correct and apparently making it part of the value story.

Key Activities

Key activities involve the most important actions a firm must

take to be successful. Key activities are those that are requisite to creating the value proposition, customer relationships, market access through channels, and a valid revenue model. Several unique types include sales and marketing, manufacturing/production, problem-solving, platform/network (or SMMPP for short), and manufacturing [5]. The entrepreneur needs to oversee these by developing and monitoring critical success factors to assess the effectiveness and efficiency of the activity and its execution. This element is something that Blank emphasizes in his book, *The Startup Owner's Manual* [3]. Furthermore, the entrepreneur should identify the most critical activities or critical success factors. The need for identification of these elements is because if the firm is not successful in achieving successes with these activities, then it will probably not reach its commercial goals.

Sales and Marketing (SM)

First, there is sales and marketing. These activities allow for the development and execution of Customer Relationship GET, KEEP, and GROW activities [2]. Without these efforts, the firm will not generate the revenue stream to sustain the firm. They also establish the channels for these tactics. To assess success, those responsible for sales and marketing activities evaluate performance based on several critical metrics. These include dollars, units sold, percent of target market achieved, average selling price, reach, impressions, click-through rate, customer conversion efficiency (percentage of prospects who engage and buy the product), and the cost of customer acquisition (evaluates the effectiveness of activities in converting customers). Today, with so much of marketing's activities moving into the digital space, it is easy for marketers to assess impressions, reach, engagements, and conversions in order to track the effectiveness of these various tactical activities that guide a customer through his/her journey to acquiring the product or service.

Manufacturing/Production (M)

Second, there is the manufacturing/production piece, which involves the design, manufacture, and distribution (and delivery) of the product. This activity dominates the business models of firms that manufacture physical products. The entrepreneur's emphasis is on delivering product in substantial quantities at better prices and superior quality. The startup can assess the effectiveness of this piece by using many of the traditional metrics used in lean manufacturing.

Problem-Solving (P)

Third, there is the provision of new solutions to customer problems or problem-solving. While most businesses will use some this activity, it is most common to service businesses. Examples include advertising, consulting firms, and healthcare systems, both of which involve problem-solving initiatives, knowledge management, and continuous training. For measurement, an entrepreneur may measure effectiveness by recommended solutions, time to develop solutions, implementation of the recommendations, and, ultimately, customer retention.

Platform/Networking (P)

The fourth activity highlighted in this paper involves the information technology platform and network. These activities are especially relevant in today's digital and data-driven era. They are critical to business models reliant upon a web-based platform or computer-based system as a central resource. eBay and Amazon, Google, and Facebook exemplify firms that are dependent upon their web platforms and proprietary algorithms. In the software business, the business models of Adobe, Intuit, and Microsoft are reliant upon the interface of their software with the operating systems of the users' devices including Windows, Mac OS, and Android. Firms that manage credit cards (e.g., Amex, Discover, and Visa) require an appropriate platform for customers, merchants, and banks. Relative to platform/network activities, key activities include platform management, service provisioning, and platform promotion. Metrics can vary. They can consist of those identified in sales and marketing and manufacturing. Also, one can assess platforms relative to their effectiveness in: (1) communicating with other platforms; (2) transactions through the system; (3) efficiency in handling traffic; and (4) system uptime/downtime [5].

Testing Key Activity Assumptions

Finally, as to evaluation as to which fit best, the entrepreneur needs to identify best guesses and then test these by "getting out of the office." Through interviews with industry experts, customers, channel partners, marketing and sales staff, manufacturing specialists, and investors, the entrepreneur can identify what activities make the most sense and what metrics he/she will need to monitor success. This process will continue as the entrepreneur moves his/her business from discovery to validation, to execution, and to the scaling of the business model. These inputs are critical to optimize the mix of activities and to establish essential factors of success in each phase of development and execution.

Key Partnerships

This segment involves the network of individuals, firms, and suppliers that make the business model work. Partners often provide capabilities, products, and services a startup cannot or prefer not to develop itself. Firms create such alliances to either optimize their business models by optimizing resource and activity allocation (visa vie outsourcing or sharing infrastructure) to achieve economies of scale and cost reduction, reduce risk in uncertain markets, or acquire specific resources or activities to execute the business model. Examples of partnerships include: (1) key supplier relationships or supply chain; (2) strategic alliances;

(3) cooptition (strategic alliances between competitors); and 4) *Jac* joint ventures to develop new businesses [3,5].

Supplier Relationships (Supply Chain)

First, supplier relationships are critical to a startup. They could mean life or death to a firm, both in its early stages and when it scales. These relationships represent the supply chain necessary to produce the product and value proposition. Examples include the raw materials needed to manufacture a physical product and the source coding services essential to create web or app-based product. An entrepreneur needs to establish a secure supply chain and vendor relationships to ensure a steady supply of product components and services to ensure that the startup can fulfill demand, at a reasonable price, and in a timely fashion. In addition to the physical product, a startup may outsource a variety of "back office" functions including legal, human resources, advertising and marketing, accounting, and benefits.

Strategic Alliances

Second, strategic alliances involve partnerships between noncompetitive firms and function to reduce the inventory of items a startup needs to provide a complete product or service. For a physical product, such alliances may tie in services or peripherals with the product. A classic example involves the inclusion of batteries in an electronic toy or product. Another case consists of the addition of Intel chips inside or Windows inside a laptop computer. An additional one consists of an insurance company structuring sales relationships with independent brokers. Alliances can help to broaden the startups reach into new markets by making the product more available in a country that the startup is not able to support sales. This relationship is common vs. commonplace in the distribution and marketing of new health care products by a startup. For example, Novartis markets and distributes Genentech/Roche's Lucentis[®] product in Europe for age-related macular edema.

Coopetition

Another key partnership is through the practice of coopetition, which should not be confused with competition. In fact, this partnership exists when a firm works with a direct competitor to share costs or market together. This type of alliance exists when firms in a particular trade collaborate via a trade organization or event or by cooperating in the development of industry standards. A good example involves the pharmaceutical trade organization, PhARMA, in which all major ethical companies participate to have a united voice when lobbying the Federal government. Another includes the standards for electronic products that many manufacturers participate in their development and publication. A final includes joint development of Blu-rayTM technology by several leading consumer electronics manufacturers. Hence, one should note that these types of partnerships occur once a startup has become a more mature company.

Joint Venture

The final example of a key partnership is a joint venture. This relationship involves collaborative efforts to develop a new business or product. For example, pharmaceutical companies will establish such ventures with competitors and earlier-stage biotech companies to identify and shepherd a new class of drugs in an uncharted market. Through this approach, companies can share resources, expertise, and risk. Another example is in the computer business. Dell will incorporate products from other companies, as part of an effort to develop out a new market segment or broaden its value offering. In general, such collaborations will occur once a startup has become established or shown extremely promising proof-of-concept. Nevertheless, a startup should include such relationships as something to investigate for longer-term opportunities.

Again, the startup will need to map out its initial guesses around what types of partnerships it will need in the short- and long-term. Thus, the entrepreneur will need to develop hypotheses regarding supplier relationships, support services, and potential strategic alliances. He/she will need to "get out of the office" to meet with industry experts, customers, and potential partners to learn and refine what alliances make the most sense to deliver value. As the startup matures, the entrepreneur (or the firm's management) should continue this process to explore what longerterm partnerships, such as cooperative relationships through trade groups and joint ventures to develop new markets, make the most sense as part of its strategic goals.

Cost Structure

The final piece involves the identification of all expenses involved in executing the business to deliver value. This piece describes the critical import costs involved with operating the business model. In creating its value proposition, a startup will incur expenses. An entrepreneur can calculate these costs as he/ she defines his/her vital resources, key activities, and critical partnerships.

Depending upon the business model and value proposition, the cost structure can be low cost or high cost [5]. It is essential when evaluating the cost structure for a startup to recognize and build out its expenses. It should factor cost structure thinking into its hypotheses, especially for the longer-term growth or cost and volume-based value propositions.

Fixed and Variable Costs

The first two concepts to consider in a cost structure are fixed costs and variable costs. Fixed costs represent the component of the cost structure that remains static despite changes in unit volume. These expenditures usually involve significant upfront investment by the startup. Companies with substantial capital

investment into equipment, IT infrastructure and platforms, manufacturing facilities, and salaried office staff will have significant fixed costs. One can see high fixed costs on the outset with both firms manufacturing a physical product and startups in the tech space that need to develop an extensive platform. Startups typically see upfront marketing programs to GET customers as fixed costs, which is why the firm closely monitors the cost of customer acquisition for such activities. The startup will need to understand the upfront set cost requirements to plan for significant upfront capital investment or to explore other strategic partnership relationships. Notable about fixed costs is that these may decline over time as the size of the business grows. A good example is a company such as Amazon, which invested significantly into fixed infrastructure initially and now is realizing the benefits as the business has grown this past decade enormously.

The other cost component involves variable costs. These expenditures vary proportionally with the volume of product or services that a firm produces and sells. Variable costs can include expenses involved in the production of the product or value so that a firm would factor these into the cost of goods sold. Variable costs could also include marketing, sales, manufacturing, and operational costs, which can increase (e.g., needing to add additional sales people and provide more collateral materials) with increased product demand or with a venture into new markets to expand new customer demand.

Value or Cost-Driven Business

The consideration of fixed and variable costs is essential when considering what type of business model and value proposition of the startup. Is it a value-driven or cost-driven business? Valuedriven companies are less concerned with cost implications and are more concerned with value creation. These companies usually are providing the latest "cutting edge" product, an innovation, or a high degree of personalized service. These firms carry higher personnel costs. Examples of such companies include ethical branded pharmaceutical companies, management consulting firms, luxury hotels, and technology firms.

In contrast, cost-driven businesses seek to minimize cost wherever possible. They usually are low price value propositions (e.g., Southwest Airlines or Walmart). Such companies seek out and maintain the leanest cost structure. These firms typically maximize automation, outsource wherever possible, minimize inventory costs, and maximize turns (or turnarounds in the case of Southwest).

Economies of Scale and Scope

Two other cost structure concepts involve economies of scale and scope. The economy of scale offers a competitive cost advantage in which the firm benefits from as its increases output. It causes the average cost per unit to fall, especially with firms that have high fixed upfront costs. Also, the scale can allow a firm to negotiate considerable volume discounts from suppliers to decrease variable product costs. However, in today's era of 3-D printing and virtually publishing, this advantage may become less of an advantage for firms or a barrier to entry for a startup.

Economics of scope refers to the cost advantage a firm can benefit from due to a broader range of operations. Larger firms can leverage the more comprehensive breadth of products by distributing costs of marketing, sales, services, and distribution across a more extensive range of products. Amazon is an excellent example of how it has expanded its distribution across many goods from its original model that involved books. Another example includes the Wonderful Company's addition of Justin wines to broaden its portfolio and to move this product line through the company's established distribution relationships along with its Fiji Water and POM Wonderful products.

Financial Score Card Concepts

Finally, the startup should not view its cost structure in a silo. The entrepreneur needs to balance his/her startup's revenue model with its cost structure. He/she needs to strike this balance to be able to build a financial story to investors and bankers, as defined by the various economic scorecard concepts helpful to find this balance and present to investors. A financial scorecard will be useful with crucial endpoints: (1) breakeven point; (2) net present value; and (3) short-term cash burn.

Break-even Point

Entrepreneurs need to identify at what point a firm will break-even. This point is critical, as investors will want to know what sales volume and over what time that the firm will start to see profitability. Reaching the break-even point might take years because of high startup expenses (e.g., research and development, platform development, or audience development).

The break-even point describes the relationship between fixed (F) and variable (price (P)/unit (u) minus variable costs (VC)/unit (where VC is variable production [VPC] and sales, marketing, and operational costs [VSMO]) so a firm can identify the number of units to reach the breakeven point. This relationship is represented by the equation: U = F/(P-[VPC+VSMO]).

Net Present Value (NVP)

One approach might include a calculation of an *NVP* as illustrated in Table 5. This benchmark involves the time value of money assessment estimates future revenues and resultant cash flows expectant from the business in the future. It then includes discounted the future cash flow to the present value using present interest rate. Cash flow is the net from revenues and depreciation minus cost of goods minus operating expenses. This approach is one that a corporate entrepreneur might use as part of making his/ her business case to management.

	Ta	able 5: NPV Example	Calculation.					
Category			Year					
		1	2	3	4	5		
Cost Reduction or Income Increase		\$ 550.00	\$ 550.00	\$ 550.00	\$ 550.00	\$ 550.00		
Cost		\$ (1,500.00)	\$ -	\$ -	\$ -	\$ -		
Cash Flow (Net)		\$ 550.00	\$ 550.00	\$ 550.00	\$ 550.00	\$ 550.00		
Cash Flow (Discounted)		\$ (950.00)	\$ 438.46	\$ 391.48	\$ 349.53	\$ 312.08		
Discount Rate	12%		~		*			
Net present value	\$ 179.19							

Short-term Cash Burn

In the startup scene, what matters is the short term. Thus, investors and entrepreneurs will closely monitor a firm's "cash burn" (Table 6). This framework involves evaluation of monthly

(or quarterly) expenditures fewer revenues (burn rate), the end of period cash, and the number of months of cash based on the monthly burn rate that the company that can sustain its operations based on existing cash and burn rate.

Table 6: Short-term Cash Flow Example [3].

Cash	Burn	Sheet	Example
------	------	-------	---------

Catagory		Ammalmaniad			
Category	1	2	3	4	Annual period
Units Solid	10000	15000	20000	35000	80000
Average selling Price	35	35	35	35	35
Revenues Before Discount	\$350,000.00	\$525,000.00	\$700,000.00	\$1,225,000.00	\$2,800,000.00
Channel Discount (40%)	\$(140,000.00)	\$(210,000.00)	\$(280,000.00)	\$(490,000.00)	\$(1,120,000.00)
Other Channel Costs (12%)	\$(42,000.00)	\$(63,000.00)	\$(84,000.00)	\$(147,000.00)	\$(336,000.00)
Net selling Discount	\$(182,000.00)	\$(273,000.00)	\$(364,000.00)	\$(637,000.00)	\$(1,456,000.00)
Cost of Goods Sold (15%)	\$(52,500.00)	\$(78,750.00)	\$(105,000.000)	\$(183,750.00)	\$(420,000.00)
Gross Income	\$115,500.00	\$173,250.00	\$231,000.00	\$404,250.00	\$924,000.00
Sales and Marketing Costs	\$(100,000.00)	\$(125,000.00)	\$(125,000.00)	\$(150,000.00)	\$(500,000.00)
General Administration/ Operational costs	\$(100,000.00)	\$(150,000.00)	\$(160,000.00)	\$(175,000.00)	\$(585,000.00)
EBITA* (Cash Flow)	\$(84,500.00)	\$(101,750.00)	\$(54,000.00)	\$79,250.00	\$(161,000.00)
Monthly CASH Burn	\$(28,166.67)	\$(33,916.67)	\$(18,000.00)	\$26,416.67	\$(13,416.67)
Cash in Bank at End of Period	\$250,000.00	\$148,250.00	\$94,250.00	\$173,500.00	\$173,500.00
Months of Cash Remaining Based on Quarterly Burn (or Last Negative Quarter)	8.88	4.37	5.24	_**	-

* EBITA: Earnings before interest, taxes, and amortization.

**While Quarterly Cash Burn/Flow was positive, it is prudent to consider cash flow (burn rate) associated from the previous quarter in mind.

The Financial Bottom Line for Startups and the BMC

Hence, the reason why the startup needs to use the same diligence in building out its OPERATIONAL or EFFICIENCY capabilities to define its cost structure accurately in order to balance its VALUE side and revenue model. The startup needs to plan and articulate its revenue model and cost structure correctly to garner investor confidence and funding. Furthermore, it is essential for the firm to do such if it is to move from discovery to execution to scaling and success. It is this failure in financial planning that leads to the lack of cash flow and ultimately failure of many startups. Unfortunately, it is also the reason why a firm needs to embrace the lean methodology so that it can be useful in identifying the value proposition, and revenue, operations, and financial models. If not, then the firm needs to "FAIL" and "FAIL FAST" so it could learn and then pivot to a value proposition or model that will realize success. In the end, that is what lean startup is all about!

Conclusion

The lean startup approach can be a useful process when an entrepreneur uses all its components. There are more facets that a startup needs to consider and to understand completely. In particular, the BMC and search process are very important. The lean approach can help entrepreneurs test elements and gain feedback through interviews and their MVPs. Startups can overlook the financial piece, which is of utmost importance because the main reason for failure is that the business runs out of financial resources. The lean startup provides a framework for a new firm to balance its delivery of value with its operations and cost structure. While the lean startup process could still use some work with regards to execution and scale, it is beneficial for finding product/market fit. Future iterations of this concept and improvements in the actual processes can lead to the critical framework to assist startup.

References

- 1. Toyota Production System (2015).
- 2. Blank S (2013) The Four Steps to Epiphany-Successful Strategies for Products That Win. Pescadero, CA: K&S Ranch, Inc.
- 3. Blank S, Dorf B (2012) The Startup Owner's Manual. Pescadero, CA: K&S Ranch, Inc.
- 4. Ries E (2011) The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses. New York, NY. Crown Business (Division of Random House, Inc).
- 5. Osterwalder A, Pigneur Y, Clark T (2010) Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. Hoboken, NJ: Wiley.

- 6. Osterwalder A, Pigneur Y, Bernarda, Smith A, Papdakos T (2015) Value Proposition Design. Hoboken, NJ: Wiley.
- 7. Furr N, Ahlstrom P (2011) Nail it then Scale it: The Entrepreneur's Guide to Creating and Managing Breakthrough Innovation, NISI Institute, USA.
- 8. Cooper B, Vlaskovits P (2013). The Lean Entrepreneur How Visionaries Create Products, Innovate with New Ventures, and Disrupt Markets.
- 9. Maurya A (2015) Running Lean -A systematic process for iterating your web application from Plan A to a plan that works. Hämtatfrån Bubbelcow.co.uk.
- 10. Andreessen M (2015) On product/market fit for startups.
- Christenson C, Raynor ME, McDonald R (2015) What Is Disruptive Innovation? Harvard Business Review. 44-53.
- 12. Product/Market Fit Canvas (2016).
- 13. Personal Communication Chris Rowan, von Liebig I-Corps[™] Mentor and Managing Director Arscientia (2016).
- 14. Pisano G (2015) You Need an Innovation Strategy. Harvard Business Review: 44-54.
- 15. Almquist E (2016) The Elements of Value. Harvard Business Review
- 16. Blank S (2015) Doubling Down on a Good Thing: The National Science Foundation's I-Corps Lite.
- 17. Blank S. Engle G (2015) NSF I-Corps[™] Teaching Handbook.
- 18. Interview with Eric Gasser of Tech Coast Angels San Diego (2015).
- 19. Personal Communication Michael Krupp, Ph.D., von Liebig Biomedical Technology Workshop Lead and von Liebig Mentor (2015).
- 20. TAM SAM SOM what it means and why it matters (2015).
- 21. National Cancer Institute Surveillance, Epidemiology, and Ends Results Program (2015).
- 22. AVC (2015) Fred Wilson Blog 30/10/10 Rule.
- 23. Griggi Example MVP Landing Page Prototype (2015).
- 24. Fisher M (1997) What is the Right Supply Chain for Your Product? Harvard Business Revie 75: 105-117.
- 25. Moore G (1991) Crossing the Chasm. New York, NY. Harpers Business Essentials.
- 26. D'Eon C, Gerson R (2015) Marking and Sales for Companies with Series an Investment. San Diego STARTUP WEEK.
- 27. NPV Example Calculation (2015) NPV Mining Financial Basics. Miningman Blog.