

## Changing the World: Entrepreneurship:

How Innovation and Entrepreneurship Changes the World

-Jack M. Wilson

## Chapter 7 Lean Launchpad and Business Model Canvas

*Master Yoda: "The greatest teacher failure is,"  
in Star Wars-The Last Jedi*

***Entrepreneurship is always a work in progress –from business plan competitions to the lean launch pad.***

Entrepreneurship today is in a state of flux as the field has recoiled from the prescriptive approach of the last few decades in which the business plan, and business plan competitions, defined the science of entrepreneurship. We will refer to this model of entrepreneurship, which tends to be a bit more linear and serial as the "causal" or "traditional" model. The annoying fact that many, if not most, new businesses simply did not use business plans was viewed as something undesirable and needing to be corrected. That was then and this is now.

As scholars looked at start-ups in a systematic fashion, they observed that even those that did have business plans rarely executed those business plans in a linear fashion. In fact, most successful new businesses ended up on a trajectory that was not envisioned in the original plan. The ability of a new venture to change its business model dramatically in mid-course has come to be known as a pivot. This has led to many scholars abandoning the idea of the business plan altogether.

### ***An Alternative Viewpoint-Effectual Entrepreneurship<sup>1</sup>***

Earlier, we introduced the concept of effectual entrepreneurship as developed by Saras Sarasvathy, a Professor in the Darden School of Business at the University of Virginia.<sup>2</sup> She studied entrepreneurship carefully by interviewing successful entrepreneurs and has criticized the causal or traditional process as much too deterministic.<sup>3</sup> Life is simply not that orderly! She has proposed an alternative formulation that she terms "the effectual entrepreneur." Some have criticized her results since the total number of interviewees was not very large. She started her work as a graduate student at Carnegie Mellon University advised by the Nobel laureate Herbert Simon. She interviewed 27 successful entrepreneurs out of the 45 who responded to her 225 requests to interview about their approach to business. Each had at least 15 years of experience, had started several companies, and had taken one or more public.

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<sup>1</sup> Effectual Entrepreneurship", by Stuart Read, Saras Sarasvathy, Nick Dew, Robert Wiltbank and Anne-Valérie Ohlsson Routledge Publishing; NY, NT (2010).

<sup>2</sup> <http://www.effectuation.org/sites/default/files/documents/what-makes-entrepreneurs-entrepreneurial-sarasvathy.pdf>

<sup>3</sup> <http://www.effectuation.org/sites/default/files/documents/effectuation-3-pager.pdf>

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In her formulation there are five major principles:

### Effectual Entrepreneurship Principles:

- **Bird in Hand** – Who are you? What do you know? Who do you know? What do you have?
- **Affordable Loss** – Limit risk by focusing on the downside and knowing what you can afford to lose when you go after the upside.
- **Lemonade** – Use your lemons to make lemonade. Use the bad news as a clue to what might work in new markets.
- **Patchwork Quilt** – Form partnerships. Working together can increase the probability of success through co-creation of new markets.
- **Pilot in the Plane** – Control rather than predict. The future is created rather than found or predicted.

### *The Lean Launchpad*

In this chapter we will introduce the concept of the Lean Launchpad, as it is used in the National Science Foundation iCorps Program to encourage scientists and engineers to move their research into the market place through entrepreneurship.<sup>4</sup> The originator of this model, Stanford University's Steve Blank, bills his model as the *"evidence based model of entrepreneurship."*<sup>5</sup>

You will no doubt notice the similarities to the approach of Effectual Entrepreneurship and the conclusions that Steve Blank reached in the development of the lean launchpad.

Sarasvathy is a scholar who has done a careful study and published her work in peer reviewed journals to be evaluated and perhaps substantiated (or refuted) by her peers. She refers to her model as "Effectual Entrepreneurship."

Blank is a serial entrepreneur of some success who draws on his personal experiences and is primarily a consumer of research rather than a producer. His formidable marketing skills have made the lean launchpad a hot topic around the world.<sup>6</sup>

Steve Blank became the leading apostle of business plan rejection several years ago<sup>7, 8, 9</sup>. In 2009 he wrote that *"In the real world, most business plans don't survive the first few months of customer contact. And even if they did – customers don't ask to see your business plan"*<sup>10</sup>.

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<sup>4</sup> [http://www.nsf.gov/news/special\\_reports/i-corps/resources.jsp](http://www.nsf.gov/news/special_reports/i-corps/resources.jsp)

<sup>5</sup> <http://www.forbes.com/sites/steveblank/2013/06/18/the-lean-launchpad-educators-course/#df15d0d43a74>

<sup>6</sup> <http://steveblank.com/about/>

<sup>7</sup> <http://www.businessinsider.com/the-lean-launchpad--teaching-entrepreneurship-as-a-management-science-2011-3>

<sup>8</sup> <https://www.udacity.com/course/how-to-build-a-startup--ep245>

<sup>9</sup> <http://www.entrepreneur.com/article/219772>

<sup>10</sup> <http://steveblank.com/2009/05/07/business-plan-competitions-2/>

Steve advocated for the supremacy of business models and he enshrined the concept of the pivot as part of his mantra of the “Customer Development Process” with the concepts of

- “minimum viable product (MVP),”
- “iterate and pivot”,
- “get out of the building,” and
- “no business plan survives first contact with customers.”

Blank claims that<sup>11</sup>

*“after decades of watching thousands of startups follow this standard regimen, we’ve now learned at least three things:*

- *As business plans are full of untested assumptions, they rarely survive first contact with customers.*
- *As the boxer Mike Tyson once said about his opponents’ prefight strategies: “Everybody has a plan until they get punched in the mouth.”*
- *No one, aside from venture capitalists and the former Soviet Union, requires five-year plans to forecast a series of unknowns. These plans are generally fiction, and conceiving them is almost always a waste of time.*

Startups are not smaller versions of large companies. They do not unfold in accordance with master plans. Those that ultimately succeed go quickly from failure to failure, all the while adapting, pivoting, testing new iterations, and improving their initial ideas as they continually learn from customers.

Existing companies execute a business model, startups search for one. This distinction is at the heart of the Lean Startup approach. It shapes the lean definition of a startup: **a temporary organization designed to search for a repeatable and scalable business model.**

Blank sees new ventures as something entirely different than existing ventures.

- Existing ventures EXECUTE a business model.
- New ventures SEARCH FOR a scalable and sustainable business model.

According to Steve Blank:

- A startup is a temporary organization
- It either goes out of business or finds a solution that customers are willing to pay for.
- It is created to search, explore, and validate an unmet need
- The search requires making and testing assumptions and **pivoting** as you learn. Cycling through the assumptions and the testing is known as **iterating**.

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<sup>11</sup> <http://nciia.org/sites/default/files/u7/Educators%20Guide%20Jan%202014.pdf>

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- for a repeatable and scalable business model
- Once a sustainable business model is found, the venture is not a startup.

To be fair to many others in the field, his insights into the shortcomings of the business plan were not entirely new, and were probably more a reaction to the way the business plan had become unexamined and enshrined dogma that hampered development rather than helped. The problem was not that doing a business plan was bad, but that too many people actually believed that the business plan was an actual “plan” in the sense that large companies create plans. Most of those who taught entrepreneurship already knew that the business plan was something that required regular testing and revision.

I often told my students that the last step in the development of ANY plan was to step back and ask yourself what you were going to do when the plan did not go as planned.

Blank made the significant contribution of pulling together the alternate approaches, rebranding it, and then marketing it into key constituencies –working with one of his students, Eric Reis. Their Lean-Launchpad model of entrepreneurship now bills itself as the “*evidence based entrepreneurship*” model and Blank has even trademarked the latter term.

Blank was trying to take a more scientific approach to entrepreneurship –one that was based upon the traditional “scientific method.” Karl Popper claimed that only an assumption that could be falsified could be claimed to be scientific.<sup>12</sup> This means that an assumption should be stated clearly and in writing. It must be possible to prove that assumption wrong. If it is not, then it is not scientific. No assumption can be proven “correct.” You can only say that you have not been able to prove it wrong after lots of effort. In other words it must be a “testable” assumption. These testable assumptions can be part of the business model.

As Blank puts it the business model contains “*a series of hypotheses about all the pieces of the business model: Who are the customers/users? What’s the distribution channel? How do we price and position the product? How do we create end user demand? Who are our partners? Where/how do we build the product? How do we finance the company, etc.?*”<sup>13</sup>

If you were Steve jobs in contemplating creating the iTunes store you might offer this assumption: People really want to carry their music around with them on their phone and would buy inexpensive recordings online. This is a testable hypothesis. He built the store and the hypothesis was not falsified. (I may claim in the future that a hypothesis is “proven,” but you will know that I mean it has not been falsified!)

Motorola, in 1998, made an assumption that a large number of the general public would want to own a phone that would communicate by satellite to and from anywhere in the

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<sup>12</sup> [https://en.wikipedia.org/wiki/Karl\\_Popper](https://en.wikipedia.org/wiki/Karl_Popper)

<sup>13</sup> <https://steveblank.com/2010/01/25/whats-a-startup-first-principles/>

world. Under that assumption, they launched a company called Iridium that launched satellite to allow communication anywhere in the world. That assumption was tested and found to be FALSE.<sup>14</sup> They went bankrupt but were eventually relaunched after a pivot to a smaller and richer market.

The enormously successful New Hampshire entrepreneur, Dean Kamen, made the assumption that many people would want to have a two wheel personal transporter and that cities and building owners would embrace this as a major breakthrough. He built and launched the Segway and proved that the assumption was FALSE. He then pivoted to use the Segway for certain special purposes, often security, in small markets.

The keys to the Lean Launchpad are to listen to the customers, to make assumptions, build a **minimum viable product** to test those assumptions, minimize the risk, learn from the market reaction, pivot based upon what you learn, and then repeat the process –**iterate!**

Or as Master Yoda explains to a depressed Luke Skywalker in the *Star Wars –Last Jedi* film: *“Heeded my words not, did you? Pass on what you have learned. Strength, mastery. But weakness, folly, failure also. Yes, failure most of all. **The greatest teacher, failure is.**”*

### ***NSF and the iCore Program***

The National Science Foundation embraced Blank’s and Reis’ formulation of new venture development when they launched their iCore program a several years ago.<sup>15</sup> In many ways they viewed it as a more scientific approach to venture creation that used the method of hypothesis formation, quick testing, revision, further testing, and continuous refinement. Fields as disparate as science and creative writing would perceive this process as the continuous refinement of drafts while writing. It is indeed the way the world works. We build new models of anything we study as we find out more and more detail through research. And so it is with entrepreneurship.

In the new model, the business model canvas, originally proposed by Alexander Osterwalder becomes the starting point.<sup>16</sup> (See an example below)

This transition continues to play out in entrepreneurship education programs across the country –as well as at UMass. The most used textbooks are built under the old paradigm. Business plan competitions continue to be held in spite of Steve Blank’s pronouncement that “I hate business plan competitions.”

Just as physicists teach Newton’s Laws and the Einstein Theory of Relativity –which extends and alters Newton’s laws, entrepreneurship education needs to introduce students to the

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<sup>14</sup> [https://en.wikipedia.org/wiki/Iridium\\_Communications](https://en.wikipedia.org/wiki/Iridium_Communications)

<sup>15</sup> [http://www.nsf.gov/news/special\\_reports/i-corps/](http://www.nsf.gov/news/special_reports/i-corps/)

<sup>16</sup> <http://businessmodelgeneration.com/canvas>

process of business planning as well as the limitations and the alternative formulations, like Blank's, that have emerged.

We also need to alert students to the danger of allowing any model (including Blank's) to morph into a dogma that could constrain innovation.

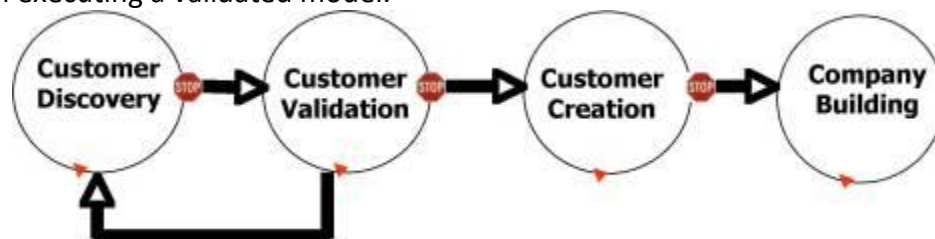
### ***Customer Discovery -Customer versus Product Development***

Steve Blank articulated a detailed customer discovery process<sup>17</sup>:

- Get out of the building (physically or virtually)
- Talk to customers, ask them questions, and listen.
- Sales calls aren't your IQ test or PhD defense
- Stop talking and listen to the customers problem
- Hire a sales team at the Customer Validation step
- Match the sales team to market type

The process then extends from customer discovery into building a viable venture in a few distinct steps.

- **Customer Discovery** first captures the founders' vision and turns it into a series of business model hypotheses. Then it develops a plan to test customer reactions to those hypotheses and turn them into facts.
- **Customer Validation** tests whether the resulting business model is repeatable and scalable. If not, the team returns to Customer Discovery.
- **Customer Creation** is the beginning of execution. It builds end-user demand and drives it into the sales channel to scale the business.
- **Company-building** transitions the organization from a startup to a company focused on executing a validated model.



### ***MVP- Minimum Viable Product***<sup>18</sup>

In product development, the minimum viable product (MVP) is the product with the highest return on investment versus risk. The term was coined and defined by Frank Robinson, and popularized by Steve Blank, and Eric Ries.

<sup>17</sup> <http://steveblank.com/tag/customer-discovery>

<sup>18</sup> <http://steveblank.com/2013/07/22/an-mvp-is-not-a-cheaper-product-its-about-smart-learning/>

An MVP is not a minimal product; it is a strategy and process directed toward making and selling a product to customers. It is an iterative process of idea generation, prototyping, presentation, data collection, analysis and learning. One seeks to minimize the total time spent on iteration.

The process is iterated until a desirable product/market fit is obtained, or until the product is deemed to be non-viable.

### ***The Pivot***

What you learn in the customer development process or in the build-measure-learn process will OFTEN cause you to change direction. This change of direction is termed The Pivot. It is not a sign of failure. It is a sign of success through learning something new.

Many teams, particularly technology based teams, believe “a company is all about my invention.” Steve Blank’s goal and the ICore goal is to teach them “it’s all about the business model.”

The three components (MVP, Pivots, and Customer Development) conserve cash during the time that they are searching for a viable business model. It can also accelerate the process and reduce the time it takes to discover a viable product-market fit.

### ***Relationship between Effectual Entrepreneurship, Causal Entrepreneurship, and the Lean Launchpad***

Professor Li Sun and others have studied the relationship between Causal Entrepreneurship and Effectual Entrepreneurship and the Lean Launchpad. Sun focuses particularly on the differences between the search and execution phases of a ventures development.

He suggests that

*“According to the practice wisdom of the lean startup, a startup is defined as a temporary organization designed to search for a repeatable, sustainable, and scalable business model (Blank 2013). Existing companies have developed successful business models while new ventures can only struggle with a series of untested hypotheses. By testing these hypotheses within markets and with customers, new ventures continuously revise or pivot into new hypotheses. Once all of the hypotheses are tested and verified, new ventures start to build a complete business model and formal organization. From this point on, the startup starts to make predictions and devise a plan accordingly<sup>19</sup>.”*

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<sup>19</sup> Yang, X., Sun, S. L., & Zhao, X. 2017; “Search and execution: Examining the entrepreneurial cognitions behind the lean startup model;” Small Business Economics; Forthcoming (doi: 10.1007/s11187-017-9978-z).

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He summarized the differences between search and execution in Table 1.

Table 1:

A comparison of entrepreneurial activities between search and execution adapter from the work of Li Sun<sup>20</sup>:

	Search	Execution
Main activities	Experimentation, risk taking, variation, discovery, survive	Implementation, selection, production, efficiency, refinement, growth
Strategy	Hypothesis driven, exploration	Implementation driven, exploitation
Attitude toward failure	Expected and fail fast	Avoid
Management	team Founders	Professional executives
Product	Minimum variable product, service, interaction with customers	Product for the real product, quality, brand, customer demand
Competition	Avoid	Confront
Pricing policy	Flexible, high, by contingency	Fixed, low, based on cost and profitability
Promotion	Word of mouth, low-cost method	Advertisement, high-cost method
Channels	Wholesale, agency	Direct sale
Customers	Early adopters	Majority users
Market positioning	Niche market	Primary market
Business model	Unknown	Known
Profitability	Survive	Profitable
Stage in firm growth	More in early stage	More in late stage

What are the differences between causation and effectuation? There are mainly five differences between effectual and causal logics in terms of views of the future, bases for taking action, predisposition toward risk and resources, attitudes toward outsiders, and attitudes toward unexpected contingencies.

Causal logic (adapted from Li Sun):

1. *views the future as a continuation of the past, while effectual logic views the future as shaped by people.*

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<sup>20</sup> Yang, X., Sun, S. L., & Zhao, X. 2017. "Search and execution: Examining the entrepreneurial cognitions behind the lean startup model;" Small Business Economics; Forthcoming (doi: 10.1007/s11187-017-9978-z).



2. *is goal-oriented and actions are determined by goals, while effectual logic is means-oriented, and goals come into being based on given means.*
3. *focuses on the upside potential (expected return) while effectual logic focuses on limiting the downside potential (affordable loss).*
4. *poses a competitive attitude toward outsiders while effectual logic advocates a partnership view of other players.*
5. *avoids contingencies by accurate predictions and careful planning while effectual logic leverages contingencies by eschewing predictions.*

Li Sun suggests that entrepreneurs could follow effectual logic to engage in search activities<sup>21</sup>.

1. *When entrepreneurs have a creative view toward the future, their search activities will be more productive. Under effectual logic, entrepreneurs frame the future as a result of co-creation by different stakeholders who are “stitched together”. Effectual logic assumes that entrepreneurs have particular means available, which is a starting point to take action under uncertainty. Since entrepreneurs are less likely to predict the future and more inclined to modify their initial goals and visions of the future, they engage in more search activities that result in more serendipity.*
2. *Effectual logic increases the depth and breadth of search. Effectual logic focuses on affordable loss and encourages entrepreneurs to experiment with different strategies with all the means given. Rather than maximizing present returns, the effectuation mindset prefers options that can create more options for the future. Such a preference for additional future options leads to more explorative activities such as experimentation, trial attempts, risk taking, testing, and searching..... According to effectual logic, the affordable loss principle will make firms keep searching for a certain option rather than stop at any point if the return reaches the expected level. Similarly, to create more options for the future, firms following effectual logic need to search extensively rather than focusing on a few options.*
3. *Effectual logic leads entrepreneurs to configure different resources in search activities. An effectuation mindset emphasizes strategic alliances and a pre-commitment by stakeholders in order to reduce uncertainty and build entry barriers. During such an alliance and pre-commitment process, entrepreneurs commit the physical resources (who they are), human resources (what they know), and organizational resources (whom they know) to search for a repeatable, scalable, and profitable business model. Under the affordable loss principle, they take uncertainty, risk, and failure for granted and make small bets to ensure that their failure is not catastrophic.*

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<sup>21</sup> Yang, X., Sun, S. L., & Zhao, X. ;. “Search and execution: Examining the entrepreneurial cognitions behind the lean startup model;” Small Business Economics; Forthcoming (2017).

4. *Effectual logic leads entrepreneurs to leverage a partner's advantage. Effectual logic emphasizes strategic alliances and the pre-commitments of stakeholders rather than competitive analyses. Under effectual logic, entrepreneurs tend to proactively look for partners such as suppliers, customers, or even competitors with complementary skills or assets to create opportunities with them.*
5. *Effectual logic leads entrepreneurs to leverage the opportunity in contingency. Effectual logic is also in favor of unexpected events, using contingencies as opportunities for novel creation and leveraging these events by shifting action to take advantage of them. Search literature shows that firms conduct two types of search activities: problem-driven search and opportunity motivated search. .... When contingencies arise unexpectedly, effectual logic will enable entrepreneurs to better exploit such opportunities by conducting an opportunity-motivated search.*

The above has been adapted from Sun. The references may be found in the original footnoted article.

**Business Model Canvas**

Let's look at the Business model canvas as it is used in the LeanLaunchpad.

<b>Key Partners</b> Who are our Key partners? Who are our key suppliers? Which Key Resources are we getting from suppliers? What key activities do partners perform?	<b>Key Activities</b> What key activities are required by 1. our value propositions? 2. our distribution channels? 3. our customer relationships? 4. our <b>revenue streams</b> ?	<b>Value Proposition</b> What value do we deliver to the customer? What problem(s) are we solving for our customers? What bundles of products and services are we offering to each customer segment? What customer needs are we satisfying?	<b>Customer Relationships</b> What type of relationships do customers expect? Which ones are already established? How do those relationships fit with our business model? What is the cost of maintaining those relationships?	<b>Customer Segments</b> What customers do we create value for? Who are our most important customers?
	<b>Key Resources</b> What key resources do we need for: 1. our value propositions? 2. our distribution channels? 3. our customer relationships? 4. our <b>revenue streams</b> ?		<b>Channels</b> Through which channels do our customers wish to be reached? How do we reach them now? How do those channels fit together? Which work best? Which are most cost efficient? How do we fit them into customer routines	
<b>Cost Structure</b> What are the most important costs in our business model? What key resources are most expensive? What key activities are most expensive? Is this business more cost driven or value driven? Fixed versus variable expenses? Are there economies of scale?			<b>Revenue Streams</b> What value are our customers ready to pay for? For what do they currently pay? How are they currently paying? How would they prefer to pay? How much does each revenue stream contribute to the overall revenue?	

The business model canvas has nine sections<sup>22</sup>:

- Value Proposition – What value does the company bring to the customers?
- Customer Segments – What market segment(s) are being targeted by the company?
- Channels – How do they reach the customers –go to market (market, deliver, support)?

<sup>22</sup> [http://en.wikipedia.org/wiki/Business\\_Model\\_Canvas](http://en.wikipedia.org/wiki/Business_Model_Canvas)

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- Customer Relationships – How does the business develop and retain the customer relationships?
- Key Activities – What activities need to occur to make the company successful?
- Key Resources – How does the company get its resources?
- Key Partners – Who are the key partners?
- Revenue Streams – How does the company generate its revenues?
- Cost Structure – What costs does the business incur?


Here are a few examples of Business Model Canvases

The first is from Zynga.<sup>23</sup>

### *The Business Model Canvas*

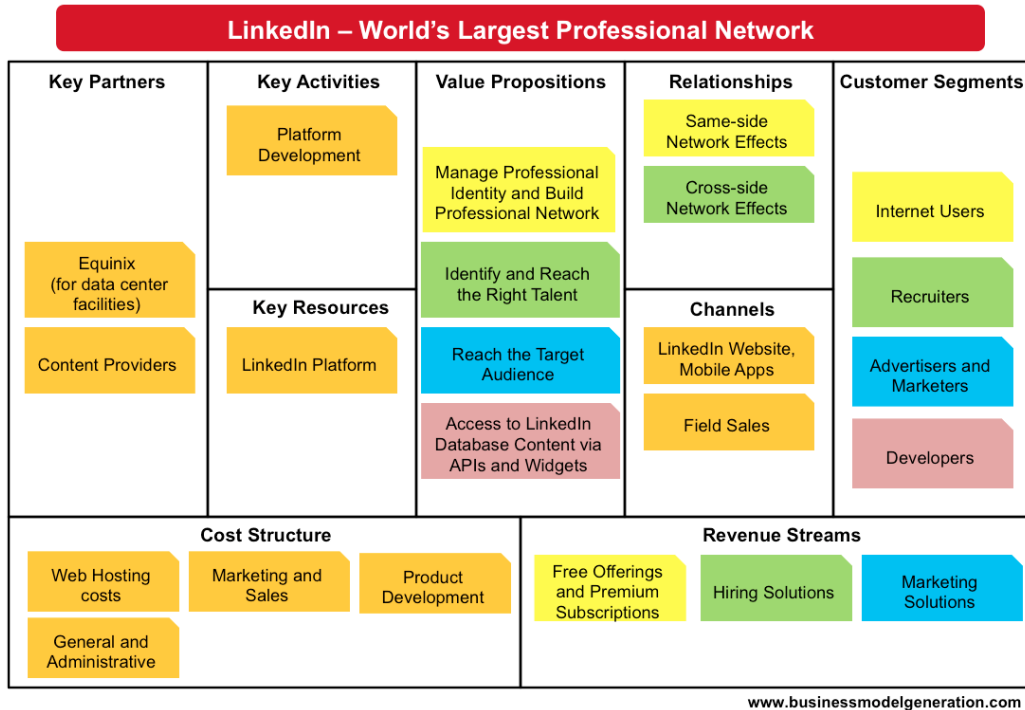


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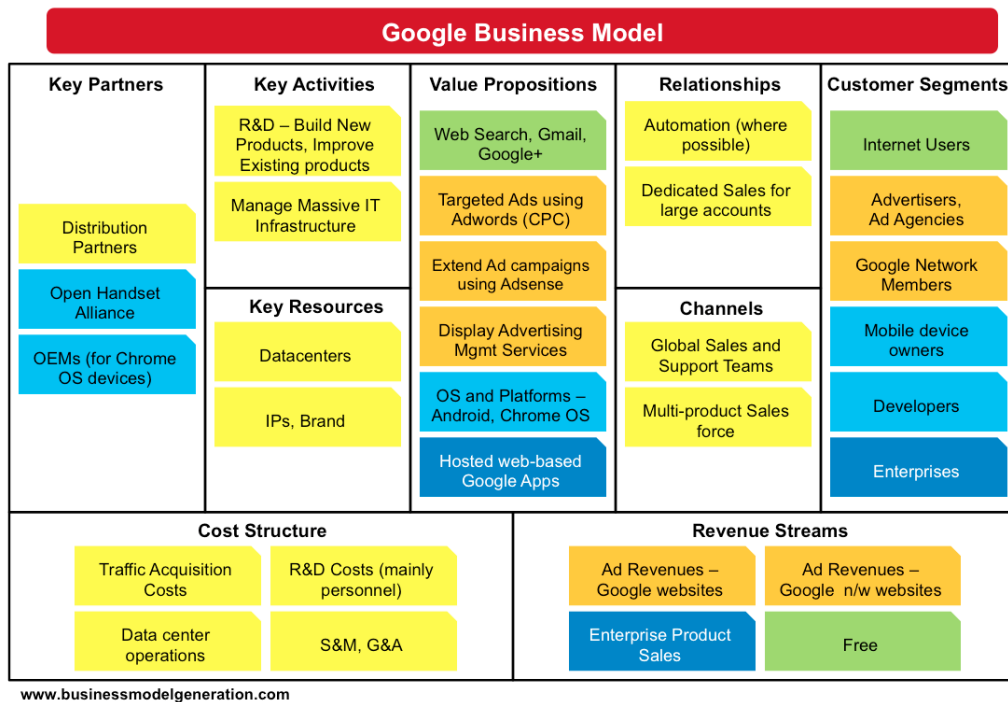
This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. 

<sup>23</sup> [http://freethinkingbrian.files.wordpress.com/2013/09/zynga\\_business\\_model\\_canvas.jpg](http://freethinkingbrian.files.wordpress.com/2013/09/zynga_business_model_canvas.jpg)

The next example is LinkedIn<sup>24</sup>



Google Business Model Canvas<sup>25</sup>



<sup>24</sup> <http://bmimatters.com/>

<sup>25</sup> <http://bmimatters.com/>

**Privo Technologies**

Privo Technologies provides an example of a new startup co-founded by an UMass Lowell Graduate and an MIT Professor.<sup>26</sup> Now let us take a look at a company that was founded and is led by Manijeh Nazari Goldberg, who took two degrees (engineering and computer science) from UMass Lowell and then one each from Harvard and MIT. She then returned to UMass Lowell and obtained her PhD.

Privo Technologies was formed to commercialize a discovery made in Robert Langer's laboratory at MIT that allowed the delivery of various drugs through encapsulation of the drug using nano-technology. Privo was a winner of the MIT 100 K Business Plan Competition. Their original idea was Nano delivery of insulin by chewing gum

They are working in very tough area of raising money to commercialize -Biotechnology. It can take a billion dollars to bring a new drug to market.

The original Privo Technologies Business Model Canvas:

<b>Key Partners</b> <ul style="list-style-type: none"> <li>• NSF and NIH</li> <li>• Mass Life Sciences</li> <li>• Universities (MIT, Harvard, UML, etc)</li> <li>• Academic Centers</li> <li>• Venture Capital</li> <li>• Philanthropy</li> </ul>	<b>Key Activities</b> <ul style="list-style-type: none"> <li>• Diabetes Research</li> <li>• Trans-Mucosal Delivery development</li> <li>• Fund raising</li> <li>• Grant Writing</li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>• Oral Mucosal Drug Delivery</li> <li>• Improve patient quality of life.</li> <li>• Improve compliance relative to injections</li> <li>• Minimize side effects</li> <li>• Reduce Hospital Stay</li> <li>• -Reduce overall cost of healthcare.</li> </ul>	<b>Customer Relationships</b> <ul style="list-style-type: none"> <li>• Endocrinologists as advisors</li> </ul>	<b>Customer Segments</b> <p>Type II diabetic patients who need to inject insulin</p>
	<b>Key Resources</b> <p>Scientists Mass Life Science Center</p>		<b>Channels</b> <p>Large Pharma as partners or purchasers</p>	
<b>Cost Structure</b> <ul style="list-style-type: none"> <li>• Salaries</li> <li>• Lab space</li> <li>• Lab equipment</li> <li>• Materials and supplies</li> <li>• Fund raising</li> <li>• IP license and development</li> <li>• Legal</li> </ul>			<b>Revenue Streams</b> <ul style="list-style-type: none"> <li>• Commercial Licensing</li> <li>• Sale of the company</li> <li>• Royalties</li> </ul>	

Steve Blank likes to say that the entrepreneur needs to “get out of the office and speak with customers.” Privo took this advice very seriously. As they moved forward they learned both from their successes and their mistakes –and got lots of advice along the way. They

<sup>26</sup> <https://www.jackmwilson.com/Entrepreneurship/Cases/Case-Privo.pdf>

interviewed 20 Physicians, 40 Scientists, 12 Attorneys, and 6 Multinational Pharmaceutical Co.

They wrote many Grants (that were peer reviewed) for

- NCI (National Cancer Institute)
- NIH (National Institute of Health)
- MLSC (Mass Life Science Center)
- NSF (National Science Foundation)
- Next (Rare Disease services)
- NCL (Nano Characterization)
- Deshpande Center –MIT

They met with the governments of 7 other countries. From these experiences they **learned** and **pivoted**.

When an entrepreneurial venture learns from their customers, experience, mistakes, and other sources that they need to take a significantly new direction it is critical that they listen to that learning. At that point we say they Pivot. Research shows that this is very typical of a new venture and is not actually either rare or a fatal flaw. You have learned something new about the market -from the market. If you are walking down a hall looking for the exit door and you open a door and find that it is a closet, what would you do? Close the closet door and open another door!

When we compared Effectual Entrepreneurship (EE) to Causal Entrepreneurship (CE) we saw that they (EE) rejected set goals in favor of constant iteration. This is also an element of the Lean Launchpad.

This led to a new Business Model Canvas by 2014:

<b>Key Partners</b> <ul style="list-style-type: none"> <li>• NSF and NIH and NCI</li> <li>• Mass Life Sciences</li> <li>• Universities (MIT, Harvard, UML, etc)</li> <li>• Academic Centers</li> <li>• Venture Capital</li> <li>• Philanthropy</li> <li>• New England Hospitals</li> <li>• Global Hospitals</li> <li>•</li> </ul>	<b>Key Activities</b> <ul style="list-style-type: none"> <li>• <del>Diabetes Research</del></li> <li>• <del>Trans Mucosal</del> Delivery development</li> <li>• Fund raising</li> <li>• Grant Writing</li> <li>• <i>Optimize Formulation</i></li> <li>• <i>Build partnerships</i></li> <li>• <i>Manufacturing nanoparticles (NP's)</i></li> <li>• <i>Pre-clinical trials</i></li> <li>• <i>Phase 1 clinical trials</i></li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>• Oral Mucosal Drug Delivery for oral cancer chemotherapy</li> <li>• Improve patient quality of life.</li> <li>• <del>Improve compliance relative to injections</del></li> <li>• Minimize side effects</li> <li>• Vastly lower toxicity</li> <li>• Ease of use</li> <li>• <del>Reduce Hospital Stay</del></li> <li>• Reduce overall cost of healthcare.</li> </ul>	<b>Customer Relationships</b> <ul style="list-style-type: none"> <li>• <del>Endocrinologists as advisors</del></li> <li>• Oncologists as advisors</li> <li>• Pharma as advisors/mentors</li> <li>• Oncology radiologists</li> </ul>	<b>Customer Segments</b> <ul style="list-style-type: none"> <li>• <del>Type II diabetic patients who need to inject insulin</del></li> <li>• Chemo-wafer cancer patients</li> <li>• Age 62+ at diagnosis</li> <li>• Early stage oral cancer (OC) patients.</li> <li>• Later stage OC patients.</li> <li>• HPV patients (male 40-59)</li> <li>• Oncology surgery patients</li> <li>• Head and neck oncologists and surgeons</li> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• Chief Research Officers (CRO) for manufacturing and pre-clinical.</li> </ul>	<b>Key Resources</b> <ul style="list-style-type: none"> <li>• Scientists</li> <li>• Mass Life Science Center</li> </ul>	<ul style="list-style-type: none"> <li>• other applications</li> <li>• Deliver other drugs through buccal tissue using NP permeation</li> <li>• Using NP loaded chemo-wafer to deliver drugs to other targets.</li> </ul>	<b>Channels</b> <ul style="list-style-type: none"> <li>• Large Pharma as partners or purchasers for Global Marketing Sales and Distribution</li> </ul>	<ul style="list-style-type: none"> <li>• Maxillofacial and oral surgeons</li> <li>• General oncology surgeons</li> <li>• Larger pharma – licensing</li> </ul>
<b>Cost Structure</b> <ul style="list-style-type: none"> <li>• Salaries</li> <li>• Lab space</li> <li>• Lab equipment</li> <li>• Materials and supplies</li> <li>• Fund raising</li> <li>• IP license and development</li> <li>• Legal</li> </ul>		<b>Revenue Streams</b> <ul style="list-style-type: none"> <li>• Commercial Licensing</li> <li>• Sale of the company</li> <li>• Royalties</li> </ul>		

Now that is quite a pivot. When they won the MIT Business Plan contest, their value proposition was to provide oral delivery of insulin for the treatment of diabetes. After an extensive customer discovery process, they realized that the market for diabetes treatments was much too crowded and there did not seem to be customers ready to purchase such a product. After that discovery they decided to use the drug delivery platform that they developed through nano-encapsulation and use it to deliver drugs to fight oral cancer instead.



You can now see why effectual entrepreneurship focuses on the iterative relationship between means, goals, interactions, and commitments.

EE is far less goal-oriented and far more interested in how one can use the resources at hand to create something of value.

The Lean Launchpad de-emphasizes detailed planning and emphasizes speed, flexibility, responsiveness (to the market), learning, and pivoting when you learn something important. They want you to “iterate and pivot.” The Privo Technology experience is an excellent example of the process of “**Customer Discovery**” and of the “**Pivot**.”

Many investors will still ask entrepreneurs to see their business plan, but the work of Sarasvathy, Blank, and many others has led to a better model and a realization that an inflexible approach to business planning is not appropriate for new ventures. A new venture is a fundamentally different creature than an established venture. The new venture is devoted to a search for a viable and sustainable business model and does that through a relentless focus on the customer and finding the right market-fit. Once a viable business model is found, then the more established venture begins to focus on executing that model efficiently.