

Combining the notions of “lean startup” and “effectuation” to train future entrepreneurs

Riccardo Bonazzi, Antoine Perruchoud
Institute of Entrepreneurship and Management
University of Applied Science of Western Switzerland

Introduction

The concepts of a “business model” and “business model innovation” are increasingly relevant in the field of entrepreneurship, and yet they have no established theoretical grounding in economics or in business studies. Consequently, there is a lack of sound methodology to teach them to entrepreneurs. Nonetheless, a new notion called “lean entrepreneurship” has been gaining support in the recent years as an approach that “changes everything” (as claimed by Steve Blank in his famous Harvard Business Review article). Nonetheless, the lean approach appears to follow a linear mindset (“causation”) that seems to be in contrast with the attitude of expert entrepreneurs, who start by assessing the available resources and then seek for commitment to finally derive an understanding of the highly uncertain environment.

Therefore, the purpose of this paper is to extend the lean startup methodology by introducing the notion of “effectuation”, as defined by Saras Sarasvathy in her Academy Management Review article. Hence, our research question is: **how to combine the notion of “causation”, “effectuation” and “lean startup” in a coherent model to teach business model innovation to young entrepreneurs?**

The rest of the paper proceeds as it follows. In the next section we review published articles to define four concepts (business model, effectuation, lean entrepreneurship and uncertainty) as our theoretical basis and to underline gaps in the existing literature. Then, in the third section we describe the design research process proposed by (Peffer et al. 2007), which we choose to fill the gaps identified in section two, and it describes a new framework that allows entrepreneurs to combine strategic and tactical thinking to assess their business innovation effort in real-time. Section four illustrates the results of our evaluation done with experts’ interview and data collection from startups, whereas section five provides conclusions and directions for future research.

Theoretical Basis and Literature Review

“Technological innovation often needs to be matched with business model innovation if the innovator is to capture value”. (Teece 2010, p.)

In this paper we define a **business model** as the description of the value that an organization offers to various customers and the portray of (1) the capabilities and partners required for creating, marketing, and delivering this value and (2) the relationship capital with the goal of generating profitable and sustainable revenue streams (Osterwalder et Pigneur 2010).

For sake of clarity, a distinction should be established between the notion of business model, business plan and business strategy. A business model refers to a conceptual, rather than a financial model of business, whereas a business model is more generic than a business strategy (Teece 2010).

This article concerns the process of business model design, which is increasingly important for entrepreneurs and yet “the concept of a business model has no established theoretical grounding in economics or in business studies” (Teece 2010). Hence, there seems to be a gap in the literature with respect to the methodology, which entrepreneurs should follow to develop the conceptual model of their business, before considering the business strategy. Moreover, previous studies inspired by the work of (Sarasvathy 2001) has underlined that a difference between the way entrepreneurship is thought in business school (the so-called “causation” approach) and the way experience entrepreneurs acts in practice (the so-called “effectuation” approach) (Read et Sarasvathy 2005). Thus, we introduce the notion of **teaching** entrepreneurship to young entrepreneurs.

Moreover, we define our third concept (**effectuation**) as “logic of entrepreneurial expertise, a dynamic and interactive process of creating new artifacts in the world” (Sarasvathy 2001). This implies that expert entrepreneurs start by assessing the available resources and then seek for commitment to finally derive an understanding of the environment, when it is perceived as highly uncertain. Despite the interested risen within the academic community, effectuation is still at its infancy as a theory (Perry, Chandler, et Markova 2012). Moreover, its usage to train entrepreneurs is still scarce.

On the one hand, effectuation has been proven to mitigate uncertainty, whereas causation appears to be positively correlated (Chandler et al. 2011) and consequently, effectuation appears to have been more often used in the development of famous startups (Fisher 2012). On the other hand, the use of causal thinking should not be dismissed. Indeed, according to (Brinkmann 2010) the formal representation of a business model (in terms of process and its output) is positively correlated to performance of a startup, under the condition that the startup team does not avoid risk and that the level of details in the business model is kept to the minimum (the level of details in the business plan should increase once the company grows in size).

In our quest to find a reconciliation between “causation” and “effectuation”, we stumble across the notion of “lean entrepreneurship”. **Lean entrepreneurship** is our forth useful concept and it is a methodology that favors experimentation over elaborate planning, customer feedback over intuition, and iterative design over traditional “big design up front” development. (Blank 2013). It is inspired by the work of (Ries 2011), which was later extended by (Blank et Dorf 2012), and it uses an iterative approach to perform business model innovation. The lean entrepreneur is asked to clarify its objectives and resources, in order to derive a set of testable propositions, which are meant to pass a falsification step by means of a minimal viable product. We note that this approach follows a causation mindset, but its quick iteration allows it to reach results similar to those achieved with an effectuation attitude. Therefore, the lean startup seems to be merge the two approaches by implementing speed of iteration, and we believe that to explain why this is important, we need introduce our final concept: uncertainty management.

Uncertainty is usually defined using the Keynesian definition (the “unknown unknown”) in opposition to risk, which is the “known unknown”. In recent years some authors has introduce the notion of near-Keynesian uncertainty (the “almost unknown unknown”) and they have declared that the purpose of entrepreneurs is to shift from near-Keynesian uncertainty to risk. In that sense, the framework proposed by Warthon university for business model innovation (Thompson et MacMillan 2010), presents a wider set of elements to take into consideration, in order to move from near-Keynesian uncertainty to risk management.

By searching the five key concepts (“business model”, teaching, effectuation, “lean startup” and “uncertainty”) we did not find any academic article that really addressed our questions - with the exception of a master thesis, who partially approached this topic (Patz 2013). Thus, we aim at filling this gap in the literature by developing a framework that combines our five concepts.

Method

In order to develop an artefact that fills the gap in the literature, we implement the design research methodology proposed by (Peffer et al. 2007), which has seven steps. The first step is “identify a problem and motivate”, which we what we did in the introduction: there is a not an existing framework to teach entrepreneurs a methodology that combines both causation and effectuation approaches. The second step is “define objectives of the solution”, which we defined in the second section: we seek for a framework that combines our five concepts.

The third step is “design and development”, which we shall describe more in details in this section. In our search for a way to combine the different concepts, we found a recent framework designed to manage uncertainty in projects by performing conversation among project stakeholders (Mastrogiacom, Missonier and Bonazzi 2014). The framework is inspired from the theory of common ground from the psycholinguistic Herbert Clark, and it has four constructs (common understanding, common resources, common commitment and common risk). Hence, we took a wider perspective, and we stated that the entrepreneur performs conversation with its internal and external stakeholders in order to address uncertainty. In that sense, one could map all the elements seen so far by mean of an extended version of this new framework, which is our artefact.

Table 1: The six concepts of our model and the link to existing theories

Concept	Link with Causation	Link with Effectuation	Link with Lean startup
Common understanding	Opportunity identification; Goals established	What can I do?	Hypotheses
Common commitment	Plan devised to achieve the goals	Effectual stakeholder commitment	Co-creation
Common resources	Resources	Who I am? What do I know? Whom do I know?	Resources
Uncertainty management	Development of a solution for a perceived need	Interact with people	Minimal Viable Product
Change in understanding	Market feedback leads to adaptation	New goals	Pivoting
Change in resources	Entrepreneur seeks to raise resource to pursue opportunity	New means	Waste management

The fifth step of (Peffer et al. 2007) is demonstration, and to do so we developed an image that shows

how the six concepts are linked with each-others.

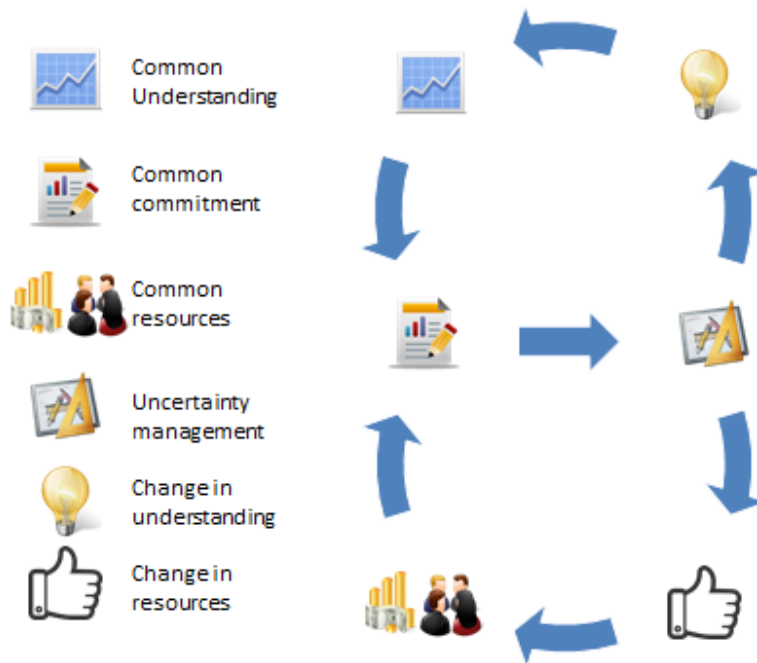


Figure 1: Relationships among our six concepts

The sixth step of (Peffer et al. 2007) is evaluation, and we tested the model by (a) collecting experts' opinions and (b) bytesting the model with three startups at a startup weekend event. On the one hand, we have presented the framework to an audience composed of serial entrepreneurs, coaches of entrepreneurs and investors as part of a two-day training conference. On the other hand, longitudinal data from three teams was collected with an online survey. Friday night each team was introduced to our model. Team participants were asked to fill in the online survey (composed of 5 questions) in four moments: (1) Saturday morning, when the teams started working; (2) Saturday afternoon, after the meeting with coaches; (3) Saturday evening, when the startup concepts were expected to be almost ready and (4) Sunday morning, when the presentations had to be finalized. In parallel, we collected impressions from the coaches during the event. After the presentations, we collected the impressions of the jury and the feedback of the coaches with respect to the three teams, by using open ended questions.

The seventh step of (Peffer et al. 2007) is communication, which is the purpose of this article.

Results

Experts opinions. We have presented the framework to an audience composed of serial entrepreneurs, coaches of entrepreneurs and investors. The presentation was part of a two-day conference. We collected the opinions of 30 participants about our framework, and we obtained an average of 4.5 out of 6 as score. Then we analyzed the other workshops that participants have attended, to induce the effect

of their interests over their perception of usefulness of our proposed model. It turned out that participants, who attended workshops on (1) lean startup, (2) product innovation, (3) leadership and (4) finance tended to give us a greater score than those who attended seminars on (1) business plan and (2) sales management. According to this feedback, we are working on a new version of the model that takes these elements into account.

Assessment of three startups. The three startups were selected since they provided an example of (a) successful startup with good idea and good team, (b) startup with good team but average idea and (c) startup with good idea and average team. Quantitative data has been analyzed using statistical software for multilevel modeling. Due to time pressure, the total number of participants answers dropped from 19 for phase one to 7 for phase three. To compensate for the low amount of data collected, we focused only on joint objectives, commitment and resources. Collected evidences confirm that our four questions are sufficient to detect patterns of deviation of a team, which would eventually endanger the final outcome. Causal effects among our dimensions, measured by using instrumental variables and two-stage least squares for panel-data models, appear to be statistically significant ($p < 0.01$), with good explanatory power (R^2 overall model = 0.39). Nonetheless, tests at a larger scale are required. Nonetheless, for illustrative purpose, we present the trends we have identified by using the example of team a (successful startup with good idea and good team).

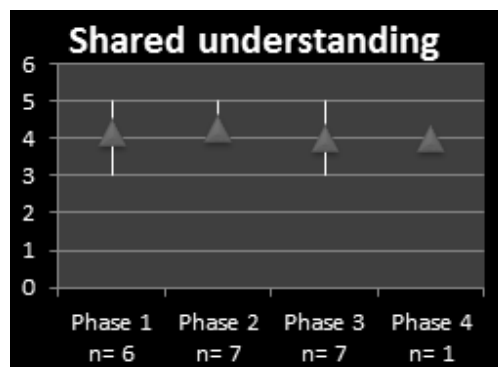


Figure 2: Evolution of shared understanding

Figure 2 shows the evolution of shared understanding over time. The X axis shows the four moments when we collected data, whereas the Y axis shows the average value of the answers of team members (the triangle), and the distance between the maximum score and the minimum score. Figure 2 shows a normal trend, which illustrates a growth in optimism among team members in phase 2, a drop in phase 3 and an possible stabilization in phase 4, recalling the shape of a Gartner Hype cycle.

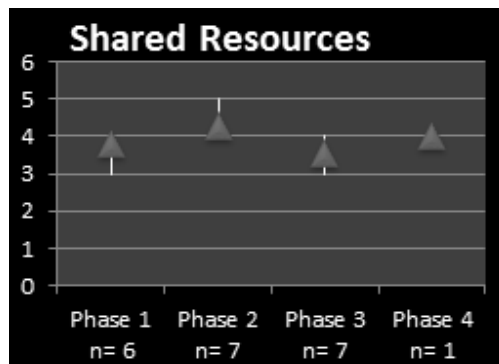


Figure 3: Evolution of shared resources

Figure 3 shows the same trend for the perception of shared resources. A quote for a team member during phase 2 confirms our intuition that resources and understanding are correlated: “A low peak around 10h30 but we changed business model and now we feel more confident”.

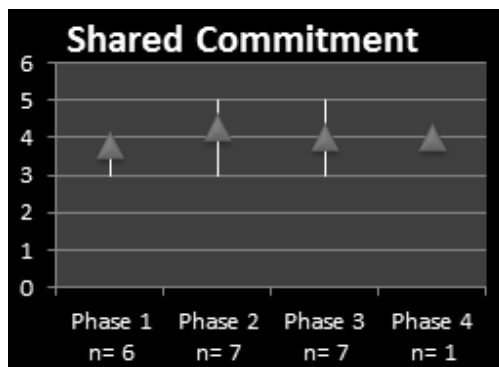


Figure 4: Evolution of shared commitment

Figure 4 shows how the shared commitment at the phase “t” is the result of shared understanding at the phase “t” and shared resources at the phase “t-1”. This supports our intuition that there is a loopback effect among the six concepts.

Beside the paths shown in figure 2, figure 3 and figure 4, the analysis of the the other two startup has allowed us to indentify so-called “deviant paths”, which allow us to detect (a) whether a team is refusing to acknowledge feedback from reality due to fear of failure and (b) whether a team is avoiding internal discussions and start splitting resources due to fear of conflicts. Nonetheless, for sake of brevity we will not address these deviant paths in this paper.

Discussion and Implications

In this paper we have presented a new framework that combines four concepts: business model innovation, effectuation, lean startup and uncertainty.

The purpose of our framework is to improve the process of teaching entrepreneurship to new entrepreneurs. By allowing your entrepreneurs to assess in real-time the evolution of the common ground among team members, the framework allows to perform reflective learning and to detect soon

so-called deviant paths.

The framework has been initially validated by collecting experts' opinions and by collecting data from three startups at a startup weekend challenge.

Experts' opinions underlined that this framework seems to be more appropriate to teach (1) lean startup, (2) product innovation, (3) leadership and (4) finance, whereas it appears to not add value for courses on (1) business plan and (2) sales management.

Collected evidences from the three startups confirm that our questions are sufficient to detect patterns of deviation of a team, which would eventually endanger the final outcome.

As future studies, we intend to link our framework to other existing theories and test it with a larger set of startups and a larger sets of measures.

Bibliography

Blank, Steve. 2013. « Why the Lean Start-Up Changes Everything ». *HARVARD BUSINESS REVIEW* 91 (5): 64–71.

Blank, Steven Gary, Bob Dorf. 2012. *The startup owner's manual: the step-by-step guide for building a great company*. K&S Ranch, Incorporated.

Brinkmann. 2010.

Chandler, Gaylen N., Dawn R. DeTienne, Alexander McKelvie, Troy V. Mumford. 2011. « Causation and effectuation processes: A validation study ». *Journal of Business Venturing* 26 (3): 375–390.

Fisher, Greg. 2012. « Effectuation, causation, and bricolage: A behavioral comparison of emerging theories in entrepreneurship research ». *Entrepreneurship Theory and Practice* 36 (5): 1019–1051.

Mastrogiacomo, Stefano, Stéphanie Missonier, Riccardo Bonazzi. 2014. « Talk before it's too late: a real-time coordination support model for managers. » *Journal of management information systems*

Osterwalder, Alexander, Yves Pigneur. 2010. *Business model generation: a handbook for visionaries, game changers, and challengers*. Wiley. com.

<http://books.google.com/books?hl=en&lr=&id=fkITInjiPQAC&oi=fnd&pg=PT14&dq=business+model+generation&ots=95Qmk5YDNM&sig=pGtYbamYixt3OUpDWeKGMZsEyww>.

Patz, Matthias. 2013. « Lean Startup: adding an experimental learning perspective to the entrepreneurial process ». <http://essay.utwente.nl/62938/>.

Peffer, Ken, Tuure Tuunanen, Marcus A. Rothenberger, et Samir Chatterjee. 2007. « A design science research methodology for information systems research ». *Journal of management information systems* 24 (3): 45–77.

Perry, John T., Gaylen N. Chandler, Gergana Markova. 2012. « Entrepreneurial effectuation: a review and suggestions for future research ». *Entrepreneurship Theory and Practice* 36 (4): 837–861.

Read, et Sarasvathy. 2005.

Ries, Eric. 2011. *The Lean Startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Random House Digital, Inc.

Sarasvathy, Saras D. 2001. « Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency ». *Academy of management Review* 26 (2): 243–263.

Teece, David J. 2010. « Business models, business strategy and innovation ». *Long range planning* 43 (2): 172–194.

Thompson, James D., Ian C. MacMillan. 2010. « Business models: Creating new markets and societal wealth ». *Long Range Planning* 43 (2): 291–307.