Ideas and methods of lean and agile startup in the VUCA Era

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Abstract
In today’s volatile, uncertain, complex and ambiguous (VUCA) era, entrepreneurs face highly uncertain startup environments. Thus, traditional methods for launching startup businesses must address the challenges associated with uncertain environments. Based on the definition of startup as “the practical activity of starting a business in an uncertain environment”, the greatest challenge in startup is reducing uncertainty. Thus, this paper defines the lean and agile startup (LAS) method by using the business model canvas (BMC) as an iterative tool and combining the customer development (CD) method and agile method (AM). LAS is an upgraded version of lean startup (LS) that provides entrepreneurs with a “0-to-1” startup exploration method. It allows entrepreneurs to promote startup exploration activities through the “hypothesis-exploration-test-cognition” iterative model, thereby evolving their ideas into sustainable business models. Moreover, this paper articulates a developmental approach for building iterative startup software based on LAS. It therefore offers entrepreneurs a convenient and visual iterative tool for startup to improve the effectiveness of startup exploration.

Keywords Lean and agile startup (LAS) · Lean startup (LS) · Business model canvas (BMC) · Startup iterative software

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Introduction

In the 1990s, the American military first used the acronym “VUCA” to both describe the complex, ambiguous, unpredictable and ever-changing global political situation and analyze the associated complexities of its ever-changing military operations. Rapidly evolving internet technologies have caused economic environments to change just as rapidly; a technological innovation can instantly subvert an industry, forcing subversive innovations in business models, while cross-border competitions are normalized. A VUCA environment is volatile, uncertain, complex and ambiguous and these factors are widely used in judgments and analyses of economic and social environments (Bennett, and Le Moine, 2011; Millar et al., 2018).

The VUCA era also entails rapid shifts and great uncertainties in startup environments; therefore, it is critical to provide entrepreneurs with startup theories and methods on how to effectively deal with an uncertain environment, control uncertainty in startup activities and reduce startup risks. Timmons (1999)’ startup process model, which has opportunities, resources and teams at its core (Timmons, 1999), must confront numerous challenges, given that it is based on an environment that is relatively stable and can be rationally predicted. For a highly uncertain startup environment, Blank put forward the “customer development (CD) method” (Blank, 2003), which provides entrepreneurs with four steps for agile development. Ries (2012) defined the agile development method (Ries, 2011), which provides entrepreneurs with an exploration tool for scientific evaluation. Blank (2013) organically combined the business model canvas (BMC) with CD and the agile method (AM) to create the lean startup (LS) method (Blank, 2013; Euchner and Blank, 2021). Aulet (2013) also proposed the “disciplined entrepreneurship (DE)” method based on LS (Aulet, 2013). Finally, Zeng Ming articulated a “smart strategy” based on Alibaba’s business experiment and shed light on operational paths and methods of continuous innovation for mature companies (Zeng, 2018).

Lean startup (LS) advocates testing entrepreneurial assumptions through business experiments (Blank and Dorf, 2012; Bocken and Snihur, 2020) as well as build lean startup (LS) capability (Harms and Schwery, 2020), which contributes to early entrepreneurial exploration (Leatherbee and Katila, 2020) and academic entrepreneurship (Guindalini et al., 2021). However, there is a huge gap between the attribution of lean entrepreneurship theory and the exploration of entrepreneurial practice (Shepherd and Gruber, 2020).

Based on an analysis of uncertainty in startup environments, this paper proposes the “lean and agile startup” (LAS) model by combining BMC, CD and LS. LAS allows entrepreneurs to promote startup exploration through an iterative cycle of “hypothesis-exploration-experiment-cognition”. Thus, this paper also puts forward the idea of “software-based” LAS to improve the effectiveness of startup exploration by developing iterative startup software. Finally, the applicability and application value of LAS methods are further discussed by comparing them with traditional startup methods.

The structure of the article is as follows: First, the paper reviews traditional startup modern startup theories, focusing on CD, agile development, and LS methods, and
their contributions. Second, the environmental dimension is introduced into startup theory, whereby entrepreneurial activities are redefined based on an understanding of the VUCA environment. Third, the paper systematically proposes an intelligent entrepreneurial method and refines the entrepreneurial exploration process into five steps: creative sourcing, creative clarification, visualization, iterative exploration, and company operation. Finally, the applicability of LAS is discussed by comparing it to traditional entrepreneurial and LS methods.

The main innovations of this paper are as follows: First, environmental variables are introduced into entrepreneurial activities. In the VUCA era, entrepreneurs need to pay full attention to their environment and its changes. Second, it puts forward an intelligent entrepreneurial method, primarily to facilitate iterative exploration. On this basis, developers can create iterative software to provide entrepreneurs with more convenient entrepreneurial exploration tools and improve the efficiency of entrepreneurial exploration.

Literature review

The core of startup comprises practices, and the rich and vivid startup practices of entrepreneurs generate practically and theoretically rich startup achievements and drive the evolution of startup theory. A startup environment is divided into a static and a dynamic environment. Thus, we refer to the startup theories and methods put forward in static environments as traditional startup theory and those defined in dynamic environments as modern startup theory.

The traditional startup theory

The basic assumption regarding an environment in traditional entrepreneurial theory is that it is static and predictable. Influential entrepreneurial theories and methods include the entrepreneurial process model and the product development method.

The business process model

Professor Timmons of Beson College proposed that the startup process model is a classic startup theory that describes the dynamic balancing of startup opportunities, startup resources and startup teams (Timmons, 1999). Startup opportunities are the core, and the essence of the startup process is discovering and developing startup opportunities. Startup resources are the necessary supports for and the bases of seeking profits from startup opportunities. A startup team is the key element, the main body that develops opportunities and integrates resources, and the fulcrum for realizing the dynamic balance of these three phenomena.

Beson College is in a leading provider of global startup education, and startup opportunities, startup resources and startup teams comprise the core of its traditional knowledge system of startup education. However, the startup process model is applicable to the evaluation of startup projects, but it does not elaborate the paths and methods of how startup ideas evolve into business models. Thus, there is a “black
box” regarding startup exploration, which cannot effectively guide entrepreneurs’ “from 0 to 1” in their startup practices.

**Product development methods**

At the beginning of the 20th century, with the development of manufacturing industries, entrepreneurs relied on a product development method centered on product development, which was widely used in startup activities in consumer good and high-tech fields. It mainly includes four stages: startup ideas/vision, product development, internal/public testing, and official product release. Using this method to start a business often entails the following three aspects:

First, a great startup idea; A startup idea is an important initiating force for startup activities.

Second, a sufficient market; it is necessary to estimate the market capacity that startup projects can meet.

Third, fast implementation; after accurately confirming the above two preconditions, entrepreneurs quickly organize resources and rapidly advance and implement startup projects.

This method is suitable for launching new products in mature and standardized markets (Blank, 2003) and is highly praised by Silicon Valley entrepreneurs.

However, because this method pays too much attention to product development and a static process, it ignores fatal defects among customers, markets, or financing; there is a great risk in starting a business. For example, Webvan Company was founded in December 1996, when it began supplying fresh food in the O2O (online to offline) mode and promoting its startup activities according to the product development method. Daily customer orders reached less than 1/4 of the planned number, whereby Webvan filed for bankruptcy in July 2001, becoming one of the worst failures in the internet age (Blank, 2003).

**The modern entrepreneurial theory**

Amid the ongoing rapid application and popularization of internet technologies, startup environments have and continue to change rapidly and are difficult to predict. This has led to the emergence of modern startup theory. Influential modern startup theories and methods include BMC, CD, AM, LS and disciplined entrepreneurship (DE).

**Business model canvas (BMC)**

BMC is an easy-to-use business model design tool jointly developed by Osterwalder and Pigneur and entrepreneurs. BMC includes customer segmentation (CS), value proposition (VP), channel (CH), customer relationship (CR), revenue source (RS), key resource (KR), key assignment (KA), key partnership (KP) and cost structure (CS). BMC therefore comprises the basic business logic of new ventures, i.e., value creation, value transfer and value distribution. It also provides creative visualization tools for entrepreneurs that are helpful for promoting startup ideas, reducing specula-
tion, and aiding entrepreneurs to identify target users and reasonably solve problems (Osterwalder and Pigneur, 2010).

**Customer development (CD) methods**

The wide application of internet technologies have generated destructive innovations within traditional business models to meet diverse customer needs. CD methods divide customer-related activities in the initial stage of a new venture into two stages and four processes according to the target market:

Stage one, the investigation stage, includes two processes, i.e., customer exploration and customer inspection.

Stage two, the implementation stage, includes two processes: customer training and company formation. Every process follows a circle with recursive arrows that needs to be repeated (Blank, 2003; Blank and Dorf, 2013). This method builds a scientific trial-and-error and cost-saving startup model for entrepreneurs, which is suitable for startup exploration in an uncertain environment.

**Agile method (AM)**

The AM originates in the concept of “lean production” and advocates “confirmatory learning” for new ventures. By establishing a “development-measurement-cognition” cycle, entrepreneurs always center on customers, assess their minimum viable product (MVP) to obtain user feedback and test assumptions, acquire knowledge of customers and markets at the lowest cost and fastest speed, iteratively develop products, services and business models, and promote startup activities quickly, at low cost and with high efficiency (Ries, 2011). This method is suitable for startup exploration activities in uncertain environments.

**Lean startup (LS) method**

Blank combines BMC, CD and AM to create the LS method (Blank and Dorf, 2012; Blank, 2013). LS favors experimentation over business planning, customer feedback over intuition and an iterative design over a traditional business plan (Rasmussen, 2016). The National Science Foundation (2011) has commercialized LS and launched a lean movement in the United States (Blank and Euchner, 2018). Today, hundreds of universities around the world teach LS, and it has been broadly accepted by entrepreneurs worldwide, changing how entrepreneurs engage in startup activities (Ladd and Kendall, 2017; Mansoori and Lackéus, 2019; Yang et al., 2019). LS is by far the most extensive and pragmatic way to support the development of a startup (Frederiksen and Brem, 2017; Ghezzi, 2018; De Aguiar et al., 2019; De Cock et al., 2019; Mollick, 2019).

**Disciplined entrepreneurship (DE)**

While starting a business, entrepreneurs have to face many uncontrollable risks. DE is comprehensive and long-term effectiveness has been proven. DE proposes a 24-step
exploration method for starting a business to guide entrepreneurs to optimal and ideal solutions through continuous iterations and developments of innovative and successful products, thus effectively reducing the risk of starting a business (Aulet, 2013). This method is not only suitable for entrepreneurs who make products and provide services but also for specific startup activities, such as delivering information.

In summary, startup process models and product development methods are suitable for startup activities in deterministic environments, while CD, AD, LS and DE methods are suitable for startup exploration activities in uncertain environments. Moreover, BMC is an important tool for describing, visualizing and iteratively changing business models.

In the VUCA era, entrepreneurs are faced with highly uncertain startup environments. From a theoretical perspective, a convenient and systematic theoretical framework for startup exploration that provides useful guidance for startup practice has not yet been articulated. Furthermore, innovative, combined applications of the above methods need to be deeply explored in and put into practice.

The VUCA era and startup activities

The VUCA era

VUCA has been widely used by the US military since the 1990s. With the rapid application of internet technologies, disruptive innovations have been integrated into traditional business models, cross-industry competitions have become the norm, and some enterprises have begun to be unable to determine who their potential competitors are. Therefore, VUCA has gradually become popular and is used in the strategic designs and planning of organizations, compelling target companies to benchmark first-class enterprises, continue to learn quickly, and cope with VUCA environments.

The concept of VUCA

VUCA refers to the volatility, uncertainty, complexity and ambiguity of an environment (Bennett and Lemoine, 2014). “Volatility” means that things change very quickly. “Uncertainty” entails that we do not know what the next step is. “Complexity” means that everything will affect everything else. “Ambiguity” entails that relationship are not clear.

The VUCA era refers to the unpredictable times of the current era. Taking the COVID-19 pandemic as an example, COVID-19 spread at the end of 2019 and ravaged the world in just a few months, becoming an unprecedented and sudden global public health event. The global economy and society thus faced a high degree of uncertainty. On March 9, 12, 16 and 18, 2020, there were four consecutive fuse events in the US stock market. On April 21, the US crude oil 05 contract closed at -37.63 US dollars/barrel, the first “negative oil price” in history.
Four elements of VUCA

VUCA contains the following four elements, which interact with and influence each other (see Fig. 1):

(1) V: Volatility, which is characterized by instability and drives and catalyzes rapid changes.

(2) U: Uncertainty, which has unpredictable characteristics due to a lack of accurate understanding or an awareness of things.

(3) C: Complexity, which reflects that various forces and factors are superimposed and cross-influenced.

(4) A: Ambiguity, which stems from a mixture of various conditions and causalities.

The strategic significance of each element of VUCA is its ability to improve an organization’s foresight of and insight into its environment, aiding the formulation of actionable forces to quickly respond to changes in that environment.

Redefining startup

The VUCA era has brought about highly uncertain startup environments, and the contexts for startup activities have essentially changed from traditional deterministic environments to uncertain environments. Therefore, we need to redefine startup accurately, and entrepreneurs need to simultaneously adjust and update their ideas of startup activities.

The uncertainty of entrepreneurial environments

In the VUCA era, entrepreneurs face highly uncertain startup environments that offer great challenges to startup activities. An uncertainty is mainly reflected in a venture’s target market, customer segmentation, product service and business model (Blank, 2013).

(1) The uncertainty of a target market. With the rapid development and maturation of e-commerce, consumers can easily purchase many products and services through networked platforms. Consumption continues to evolve, which is reflected in personalized and customized needs and pursuits of consumer experience. Thus, the uncer-
tainty of a target market is reflected in the following three aspects: First, in an existing market, competition in the industry becomes increasingly fierce, entry opportunities for entrepreneurs are reduced, entry costs rise and startup risks increase. Second, in a segmentation market, the degree of segmentation is increasing, entailing shrinking market capacity. Here, if entrepreneurs put forward dynamic value propositions that lack sufficient differentiation, it is difficult to succeed. Third, in a brand-new market, entrepreneurs face the pressures and risks of long-term cultivation of target customers.

(2) The uncertainty of customer segmentation. Entrepreneurs experience confusion regarding customer segmentation and dynamic management. Entrepreneurs need to identify the most important customers, and in terms of customer segmentation, important jobs, extreme pain points and necessary benefits.

(3) The uncertainty of products and services. An ambiguity of customer segmentation and cognition leads to an uncertainty in value proposition design. Only by accurately determining the extreme pain points and expected benefits of customers can we design products and services that customers are satisfied with. In existing markets, customers are clear about their own needs. However, in most cases, especially in a brand-new market, customers’ demands for themselves are vague, which offers additional challenges to entrepreneurs developing products and services.

(4) The uncertainty of business model. Due to uncertainties in target market, customer segmentation and product service, it can be difficult for entrepreneurs to design a successful business model using great ideas.

The VUCA era has created great challenges to traditional ideas and methods of startup, and it is difficult for product development methods and startup process models to play direct startup roles.

Redefining startup and startup activities

Due to the high uncertainties of today’s startup environments, we need to redefine startup and startup activities so that entrepreneurs can correctly grasp the correct startup ideas and methods to scientifically address their uncertain environments.

(1) The definition of startup in LS. According to LS, startup is a process of identifying and developing startup opportunities driven by the spirit of innovation and entrepreneurship. Startup activities involve “developing new products or services under extremely uncertain conditions, highly integrated and uncertain management activities led by entrepreneurs” (Ries, 2011).

(2) The definition of startup in this paper. We believe that startup is “the practical activity of starting a business in an uncertain environment”, and thus the core of startup lies in uncertainty management. Through scientific trial and error, continuous exploration and iteration, entrepreneurs gain knowledge and insights, transform the unknown into the known and uncertainty into certainty, and establish reproducible and sustainable business models.

A startup activity includes the following three aspects: first, identifying and developing startup opportunities; second, the practical activities driven by startup spirit; and third, complex and uncertain management activities (Ries, 2011).
The design of lean and agile startup (LAS)

Based on redefining and recognizing startup and the startup process, LAS focuses on the path and method of how an idea is created and evolves into a business model.

The core concept

The core of LAS is its use of BMC as an iterative tool for idea generation. Entrepreneurs need to flexibly combine and use CD and LS, continuously carry out startup exploration and business experiments, gain knowledge and insights, continuously iterate business models, and facilitate the evolution of ideas into business models. Accordingly, through software, the ease of use and operability of LAS can be improved.

Basic process

Idea sourcing

Entrepreneurs have great ideas they are passionately invested in, which typically drive their startup activities. Ries calls these leaps of faith (Ries, 2011). From the perspective of creative idea sourcing, this generally includes technology-driven and market-driven sources (Osterwalder et al., 2014).

1. Technology push. Entrepreneurs start with their own inventions, innovations or (technical) resources, triggering their leaps of faith and value creation for specific customer groups by developing products or services.

2. Market pull. Entrepreneurs identify unsatisfied customer needs based on deep insights into their specific customers’ work, pain points and benefits, which trigger leaps of faith. Thus, by designing specific products and services, we can better help customers finish their work and overcome their extreme pain points to create the benefits of customer satisfaction. Changes in a market environment often open a window

![Flow chart of Lean and Agile Startup exploration](image-url)
to market opportunities, and entrepreneurs need to quickly capture ideas to enter into startup exploration.

**Idea clarification**

Whether an idea comes from technology push or market pull, entrepreneurs need to make bold assumptions in terms of their products, customers, markets and competitive advantages after capturing the idea, clarifying it together with their startup team to reach a consensus on exploration (Blank, 2003).

1. **Product or service hypothesis.** A startup team creates preliminary designs for “to-be-developed” products or services by estimating the main uses, functions and advantages of these products or services, customer use costs, customer evaluations of the products or services, intellectual property rights of the products or services, etc.

2. **Customer assumptions.** The startup team focuses on target customer groups and their needs, including by answering the following: Who are the potential customers and angel customers? How will the angel customers be identified? How does a customer accomplish his or her job? What are the urgent problems for customers? What benefits do customers expect?

3. **Market hypothesis.** The startup team makes a preliminary judgment on the types of markets to be involved in based on its selection of existing markets, segmented markets and brand-new markets and puts forward the basic assumptions of market operation from the perspective of competition.

4. **Hypothesis of competitive advantage.** Startup teams elaborate assumptions about competitive advantages, i.e., comparative analyses of products and the main competitive advantages and estimations of why customers will choose these products.

**Idea visualization**

With the help of BMC, the clarified ideas are further expressed structurally, and a mature business model is obtained through continuous iteration on a canvas.

1. **According to customer segmentation, explore a canvas.** Customer segmentation is the starting point for canvas exploration, and different canvases are made according to different customer segmentation needs. Initially, it is not recommended to explore canvases of multiple customer groups at the same time. This will easily confuse business model exploration.

2. **Use canvas tools to clarify business logic.** There are nine sections in the canvas that contain the following three business logic factors: First, based on knowledge of customer segmentation and design value proposition, transfer value through channels and enhance value through customer relationships to obtain revenue sources. Second, to realize a value proposition, carry out key tasks, invest core resources, seek important cooperation to form the cost structure. Third, determine whether an income source can cover the cost structure and then test the sustainability of the business model (Osterwalder, 2010).
Iterative exploration

A canvas is a basic tool for an iterative exploration of startup. For each section of a canvas, it is necessary to fully explore the corresponding items and sort them according to their importance. Each item exploration includes four steps: hypothesis, exploration, testing, and cognition (see Fig. 3).

(1) Hypothesis. Preliminary assumption of entrepreneurs’ knowledge of related sectors. Taking their channels as an example, entrepreneurs should list the available online and offline channels according to the characteristics of customer segmentation and products and services and rank them according to their importance.

(2) Exploration. Entrepreneurs verify whether each item hypothesis is appropriate individually through in-person interviews and exchanges with target customers and partners to constantly revise the early assumptions of entrepreneurs. Exploration can produce three results. First, a hypothesis is sufficient for entering the next section of discovery. Once all creative business logic is clarified, it can then enter the testing stage. Second, there are new discoveries. During discovery, we obtain a new view of a hypothesis, revise each item hypothesis, and continue to explore. Third, a hypothesis is not sufficient; hence, we should continue to search for objects and carry out exploration activities.

(3) Test: Designing commercial experiments to test, verify the hypotheses of items, and make these hypotheses concrete. For example, channel access often entails
“keyword drainage”, whereby keywords need to be screened and combined to test them and their potential combinations and when to deliver them with the best cost performance. Some items imply that it may take hundreds of commercial experiments to find satisfactory answers. In the testing process, it is necessary to manage test cards and learning cards to improve the effectiveness of commercial experiments. Testing requires financial support, and entrepreneurs need to plan budget for business experiments. A minimum viable product (MVP) needs to be fully used in the testing process to verify the business model. Different stages of testing have different requirements for MVP. With ongoing testing, an MVP becomes increasingly mature. The test results include the following:

First: invalid, return to canvas, adjust customer segmentation and value proposition, start over, and explore the business model again.

Second: extended testing is necessary to clarify the directions of further commercial experiments and to continue to carry out continuous testing experiments.

Third: pass the item test to move into the next section. When all canvas plates pass, they enter the execution stage (Osterwalder et al., 2014).

(4) Cognition. Combined with the results of exploration and testing, cognition can be obtained for each item hypothesis. Updating each cognition based on each section of the canvas can generate a brand-new canvas, and entrepreneurs can obtain a brand-new business model by reorganizing each of these.

Iterative exploration can effectively help entrepreneurs carry out startup activities efficiently and orderly by designing iterative startup software. Iterative startup software requires a collaborative development of mobile, PC and cloud functions, helping entrepreneurs carry out exploration activities in real time.

Company operation

At this stage, entrepreneurs have made breakthrough progress in their iterative process of starting a business. When entering the implementation stage of their company’s operation, they solved the difficulties they faced during the initial stage of creativity, changing “uncertain” to “certain” and “unknown” to “known”, thereby obtaining a clear and sustainable business model (Ries, 2011).

(1) Making a business plan. Structurally express the business model, put forward the steps and arrangements for comprehensively promoting the implementation of the business plan, and clarify the needs of and financing paths for various resources.

(2) Establish an operation team. Transform the startup exploration team into a startup operation team, expand the team size, set up relevant functional departments, enhance departmental cooperation and improve the execution of project promotion.

Comparative analysis of LAS

By comparing LAS with traditional and modern startup theories, we can analyze the innovation of the LAS method.
Comparison with traditional startup theory

The differences between LAS and traditional startup theory are reflected in the premise assumptions, basic concepts, iterative carriers and guiding methods (see Table 1).

Premise assumptions

The basic premise of traditional startup theory is that an environment is certain; thus, entrepreneurs can effectively predict customer demand and market capacity through full investigation.

LAS holds that the premise of startup is that it occurs in the VUCA era in a highly uncertain environment. This is reflected in the uncertainties of customer demand and target market, which lead to the uncertainties of product services and business models. Entrepreneurs cannot predict market and demand, and therefore only scientific exploration can reduce uncertainty.

Basic concepts

Based on the certainty of an environment, traditional startup theory forms basic judgments on demand and market through rational prediction and makes detailed plans for startup activities to quickly promote startup activities.

Based on the uncertainty of an environment, LAS advocates the combination of CD and LS, establishes a scientific trial-and-error model, and increases knowledge through a large number of practical explorations; hence, it changes “uncertainty” into “certainty” and reduces startup risks (Ries, 2011).

Iterative carriers

Traditional startup theory requires entrepreneurs to always focus on their startup plans, constantly optimize and improve them, and better execute startup projects.

LAS requires entrepreneurs to use BMC as the basic iterative tool, to acquire cognition for each section of their canvas through exploration and testing, and to dynamically iterate each canvas to promote the continuous optimization of their business model.

| Table 1  | Comparison between LAS and traditional startup theory |
|----------|--------------------------------------------------------|
|          | Startup method                                         |
|          | Premise hypothesis                                    |
|          | Basic concepts                                         |
|          | Iterative carriers                                     |
|          | Guidance methods                                       |
| Tradition- | Deterministic environment                            |
| al startup | Rational predictions                                  |
| theory     | Business plans                                         |
| LAS        | Uncertainty environment                               |
|            | Scientific trials                                     |
|            | Business model canvases                               |
|            | Proper methods                                         |
Guidance method

Traditional startup theory places higher requirements on startup instructors, who need to express unique opinions for each startup project and provide useful business guidance for entrepreneurs.

LAS entails that as long as entrepreneurs carry out startup exploration correctly, entrepreneurs should become the information priority in this field. The only role that startup tutors can play is as judges of whether entrepreneurs’ startup exploration methods are appropriate, sharing the skills, methods and experiences of startup exploration in every step to improve entrepreneurs’ exploration skills.

The comparison with modern startup theory

LAS combines modern startup theory and methods to enable entrepreneurs to face highly uncertain environments and quickly explore startup. The following sections compare LAS to the modern theories of BMC, CD, and LS.

The comparison with canvas theory

LAS uses a canvas as an iterative tool to carry out startup exploration with the following expansions:

(1) From static exploration to dynamic exploration. Canvas theory constructs nine sections and expresses the business logic of creativity in a structured way. In terms of expression, a business model is described statically in a certain section of time. On the basis of canvas theory, LAS establishes the iterative function of “hypothesis-exploration-test-cognition” to transform a canvas from a static exploration to a dynamic one.

(2) From on-site discussions to real-time updates. In the traditional canvas usage scenario, a startup team explores all the items in each section through on-site brainstorming and reaches a consensus on creativity. LAS is software-based, whereby startup team members can carry out mobile exploration activities in real time and quickly update their knowledge; thus, LAS is a platform for a startup team to dynamically focus on collective wisdom and improve its exploration efficiency.

Comparison with CD

LAS fully absorbs the customer exploration and customer inspection proposed by CD and expands on it in the following ways:

(1) Expanding the exploration objects. CD focuses on customers to explore effective startup. Since entrepreneurs’ value propositions involve related partners, LAS has added new partners as exploration objects, which fosters iterative explorations of business models.

(2) Visualization of exploration process. LAS builds an iterative process of “hypothesis-exploration-test-cognition”, which further visualizes the exploration process of CD. With the aid of a software platform, LAS can therefore provide more convenient startup assistance to entrepreneurs.
Comparison with AD

LAS fully absorbs the exploration process of “development-measurement cognition” proposed by AD and expands on it as follows:

1. Expand the scope of exploration. AD focuses on exploring the fit between value proposition and customer segmentation, but LAS covers all sectors of a business model.

2. Collecting exploration cognition efficiently. LAS is based on canvas theory and carries out creative iterations. The knowledge gained by entrepreneurs in exploration and testing can be updated on a canvas in real time, and the results of startup exploration can be collected efficiently and conveniently.

Comparison with LS

LAS can be regarded as an iterative version of LS with the following innovations:

1. Combines BMC with CD and AM methods. By creating the software for BMC, we can record how the software of CD and AM record exploration in real time, gain new knowledge and insights, and update the corresponding sections of BMC in real time.

2. Promotes the cooperation of entrepreneurial teams. Entrepreneurial teams are required to cooperate in the development of BMCs. By sharing LS information, effective information communications and exchanges among entrepreneurial groups are maintained, which are helpful for eliminating team barriers.

The practical application

LAS is the optimization and improvement of LS method, which is helpful to guide entrepreneurship practice scientifically. It can be used in the following aspects:

Develop iterative startup software

LAS provides the basic framework of iterative business model, on the basis of which we can further form the idea of entrepreneurial software development. By checking the adequacy of customer explorations, LAS summarizes the results of customer explorations in a timely manner, and iteratively acquires knowledge and insights. Through testing the adequacy of commercial experiments, the verification of commercial hypotheses can be obtained and project maturity can be improved.

Scientific guidance for entrepreneurial activities

LAS can be widely used in entrepreneurial exploration and is a beneficial supplement to LS practice. By documenting the customer exploration process, shared information can be formed to help break down team barriers. The business coach can improve the service ability of business by using the iterative coach service.
Conclusions

The VUCA era has brought about a highly uncertain startup environment. This paper proposes to innovate and combine Business Model Canvas, Customer Development methods and Agile Development methods, and then to make Lean and Agile startup software, improve the convenience of new ventures in using startup methods, and provide entrepreneurs with startup methods facing the uncertain environment. Lean and Agile startup can be regarded as a beneficial pre-supplement to traditional startup theory and method, and it is an upgraded version of Lean Startup method, which provides entrepreneurs with a “0 to 1” startup exploration method, decrypts the “black box of startup exploration”, and enables entrepreneurs to have rules to follow and evolve ideas into business models through full exploration.

The construction of the knowledge system of Lean and Agile startup method, the softwareization of Lean and Agile startup method, is very important. At present, the development team has completed the design of software logic and is cooperating with the engineer team to develop “iterative startup software”. The application of Lean and Agile startup practice is more important, and a large number of entrepreneurs need to use Lean and Agile startup method to carry out startup exploration, thus forming a feedback loop to Lean and Agile startup method, and then iteratively optimizing Lean and Agile startup method.

Precise & Agile Startup method comes from lean startup method, after communication and iteration with some entrepreneurs. This method has the following limitations: First, it needs to be tested by more extensive practice, and it needs to establish an iterative closed-loop with new ventures in different industries, in order to continuously improve and enrich the theoretical connotation of Precise & Agile Startup. Second, iterative startup software needs further iteration. At present, the author has successfully developed the “iterative startup software” for campus startup training activities so as to preliminarily verify the feasibility of software-based startup activities. More new ventures need to try out the software to form a software iterative closed-loop and improve the usability.

Research Outlook: In the VUCA era, the high uncertainty of the entrepreneurial environment forces the iteration and innovation of entrepreneurial methods. Measures such as building an iterative closed-loop with entrepreneurs, and trying to explore the process and software of startup, will continue to enrich lean startup methods and practices.

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