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ENT 624
Entrepreneurial Strategy

Lecture 03



Lean Startup Methodology

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“Challenges are gifts that force us to search for a new center of gravity. Don’t fight them. Just find a new way to stand.”

– *Oprah Winfrey*

Entrepreneur Quotes to Inspire Your Own Success



7. “You may be disappointed if you fail, but you are doomed if you don’t try.” – **Beverly Sills**

8. “Success is not the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful.” – **Albert Schweitzer, Writer, Humanitarian, Philosopher, and Physician**

9. “The key to success is action, and the essential in action is perseverance.” – **Sun Yat-Sen, Chinese Statesman, Physician, and Political Philosopher**



Learning Objectives

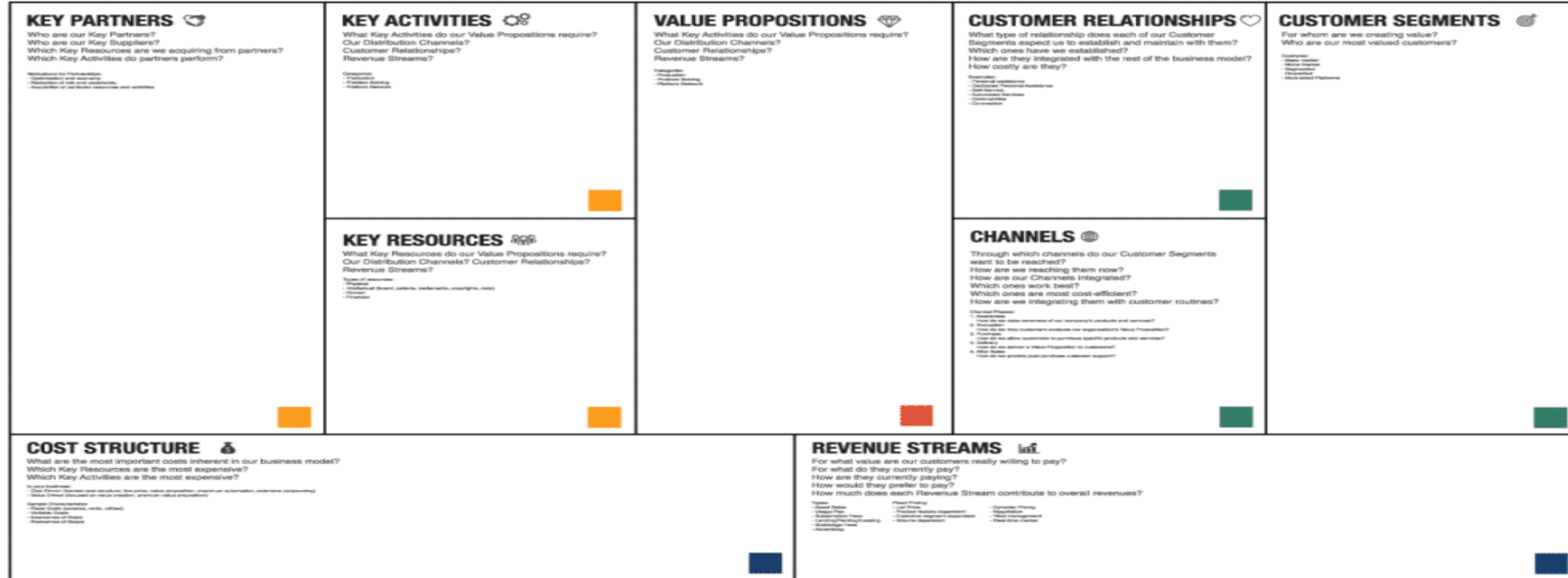
1. **Discuss the Lean Startup Framework: Its Origins, Core Ideas, and Building Blocks of the Lean Startup Framework.**
2. **How to conduct a Business Model Canvas (BMC).**
3. **Explore an Overarching Perspective on the Lean Startup Framework.**

The Lean Startup Framework: Its Origins, and Core Ideas

- **Steve Blank** started the notion of the lean startup framework.
- Blank was a successful serial entrepreneur and investor who focused on reducing the risk associated with the new venture—startup process. Blank was highly critical of the many startups that begin the startup process with an already well-established product idea. He was also critical of entrepreneurs' inward-looking approach, in which they focus their time, effort, and other resources on perfecting a product idea without knowing whether customers need the product or would be willing to pay for it or whether the newly created venture could make sufficient revenues.
- Therefore, he proposed that entrepreneurs should adopt an outward looking mindset to learn and adapt. He argued that entrepreneurs should develop opportunity conjectures about their startups' key elements with an outward-looking learning mindset, move out of their offices, test these conjectures, and then adapt their potential opportunities until the process yielded a viable business model.
- Blank offered the first set of tools (customer development, agile engineering, and minimum viable product) to help entrepreneurs accomplish their search, learning, and validation activities.

Osterwalder and Pigneur also contributed to the lean startup framework. Specifically, they positioned the startup process in a design science framework based on the scientific method. This approach led to the “**Business Model Canvas.**” This tool aims to help entrepreneurs design a business model and formulate and test hypotheses about that business model. The Business Model Canvas assumes that every business model can be broken down into nine different building blocks that founders must define for their ventures. These building blocks capture:

- (1) the venture’s **value proposition**,
- (2) the **customer segments** the venture aims to target,
- (3) the **customers relationships** the venture has to build **with its customers**,
- (4) the **channels** through which the venture reaches its customers,
- (5) the **revenue streams** the venture expects from customers,
- (6) the **key activities** the venture has to perform,
- (7) the **key resources** the venture needs to perform these activities,
- (8) the **key partnerships** required for performing the activities, and
- (9) the **cost structure** arising from the venture’s activities.



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- **Business Model Canvas** arranges these building blocks in a graphical illustration, in the form of a tool that founders can use to:
 - a) gain a comprehensive overview of their ventures' business models and
 - b) adapt these building blocks based on feedback from (potential) customers, investors, or other stakeholders.
- Eric Ries made the next significant contribution to the lean startup framework. Ries was an entrepreneur and student of Steve Blank. He identified critical similarities between the startup process's goals (as proposed by Blank and Osterwalder and Pigneur) and the lean manufacturing approach. Ries dubbed the **combination of customer development and the iterative agile techniques** as the "**Lean Startup.**" Specifically, he argued that:
- **Lean Startup method** [allows for] continuous adjustments with a steering wheel called the **Build-Measure-Learn feedback loop.**
- Through this process of steering, we can learn when and if it's time to make a sharp turn called a **pivot** or whether we should persevere along our current path.
- Once we have an engine that's revved up, the **Lean Startup offers methods to scale and grow the business with maximum acceleration.**

- Finally, the most recent addition to the lean startup framework is the “**Market Opportunity Navigator**” developed by **Marc Gruber and Sharon Tal**.
- **Market Opportunity Navigator** tells you how to rapidly find product/market fit inside a market, and how to pivot when your hypotheses are incorrect. However, they don't help you figure out where to start the search for your new business.
- It provides a wide-lens perspective to find different potential market domains for your innovation, before you zoom in and design the business model or test your minimal viable products.
- This tool enables entrepreneurs to identify and choose the most promising starting position for the startup process.

Building Blocks of the Lean Startup Framework

- The lean startup framework has **five** primary building blocks:
 - (1) identifying and evaluating market opportunities in startups,
 - (2) designing business models,
 - (3) engaging in validated learning (including customer development),
 - (4) building **minimum viable products (MVPs)**, and
 - (5) learning whether to persevere with or pivot from the current course of action.
- In Fig. 2, we illustrate the connection between the various building blocks and how they work together as a framework to help entrepreneurs reduce some of the uncertainty and risks associated with the startup process.

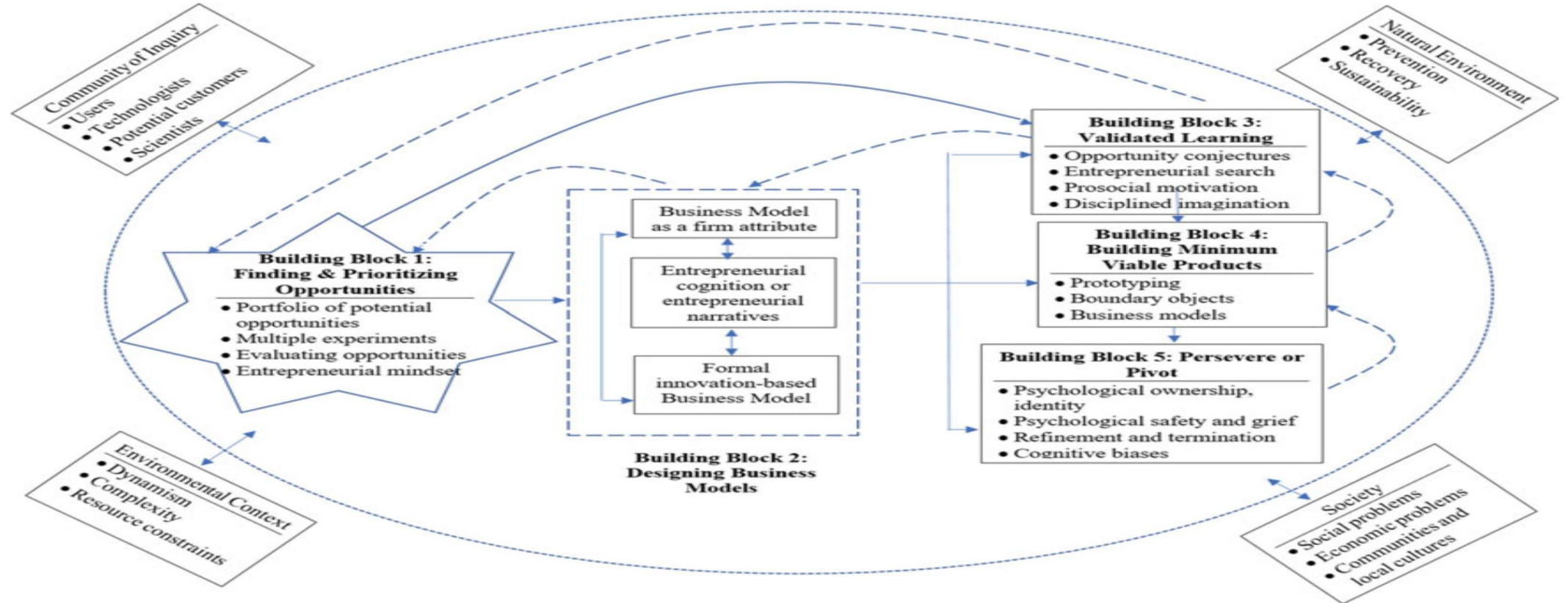


Fig. 2 Building a startup model by combining practitioner knowledge with current and future academic research (Shepherd & Gruber, 2020)

Building Block 1: Identifying and Evaluating Market Opportunities

- Entrepreneurs are often too optimistic and confident about the attractiveness of the potential opportunity at the center of the startup process. This overoptimism and overconfidence often lead entrepreneurs to make mistakes that require a challenging “restart” in an alternative market domain.
- Indeed, one estimation is that 70% of all new ventures have to perform such a pivot. This emphasis on the importance of finding and prioritizing opportunities reflects how many startups explore multiple market opportunities before deciding on their target market. Those startups that identify many potential opportunities before choosing to exploit one tend to perform better than those that identify fewer potential opportunities.
- **The Market Opportunity Navigator** provides an important contribution to the initial stage of the lean startup process by enabling an entrepreneur to generate a portfolio of potential opportunities. The entrepreneur then chooses the most promising potential opportunity upon which he or she designs a business mode.
- Furthermore, identifying a portfolio of opportunities allows entrepreneurs to engage in multiple experiments simultaneously. Indeed, in highly uncertain contexts, entrepreneurs need to generate multiple opportunities to probe the future.

- An essential step in the Market Opportunity Navigator is to evaluate the focal consideration set's potential opportunities and choose the most promising one. This choice depends on entrepreneurs' assessments of opportunity attractiveness, and entrepreneurs' assessments of opportunity attractiveness **depend on their experience**. Therefore, entrepreneurs with different backgrounds are likely to conduct different types of experiments to test their portfolios of potential opportunities.
- In particular, after identifying multiple opportunities, entrepreneurs may seek to understand the relative attractiveness of these opportunities and consider the different levels of uncertainty associated with each opportunity. When entrepreneurs exploit multiple market opportunities, their early decisions can enhance their ventures' agility later. The early decisions that can enhance agility include picking a brand name that could fit several markets, hiring employees with more flexible human capital, and so on.
- Therefore, by understanding how startups use the Market Opportunity Navigator to engage in lean learning cycles, we gain a deeper understanding of the entrepreneurial mindset and strategic entrepreneurship and how entrepreneurs can develop their cognitive flexibility to adapt their startups to external environmental changes.

Building Block 2: Designing Business Models

- While the **Market Opportunity Navigator** helps entrepreneurs determine *where to play*, to develop viable new ventures, entrepreneurs also need to understand *how to play* in their current context.
- Designing a business model is a crucial steppingstone in the startup process. A business model **makes explicit assumptions about the respective startup in the form of a framework.** This framework provides the basis for entrepreneurs to form venture-creation hypotheses that they can then test.
- Indeed, the design of a business model presents a “leap of faith,” a leap of faith that the respective startup can solve the focal customer problem by offering a product or service that delivers value to customers and other stakeholders, including the startup’s owners.
- From this leap of faith, entrepreneurs employ the lean startup framework’s validated-learning process to rapidly and cheaply test hypotheses and use the information from these tests to refine or substantially change their business models.

- **Business-model innovation** refers to innovating “a company’s system of interconnected and interdependent activities that determines the way the company ‘does business’ with its customers, partners and vendors”.
- From a cognitive perspective, analogical reasoning and conceptual combinations can lead to business-model innovation.
- **Analogical reasoning** involves applying existing knowledge structures from a familiar domain to a new domain, which can enhance business-model innovation by reconceptualizing the familiar so that new relationships and interdependencies between the elements of a business model emerge.
- Entrepreneurs can also use combinations of existing business-model concepts to alter the focal concept’s attributes, which can lead to business model innovation through “incorporating attributes or structures from a wide range of concepts to modify a target concept, so that fundamentally new attributes, unavailable in either preexisting concept, can emerge”.

Third, it is important to consider a narrative perspective of business models. ***Narratives*** are stories that offer “temporally sequenced accounts of interrelated events or actions undertaken by characters”. ***Narratives help entrepreneurs acquire resources, make sense of failure, and influence potential customers’ narratives.*** Understanding business models’ narratives provides insights into the sensemaking process, the identification of potential stakeholders, and the development of potential opportunities tied to business-model co-construction by entrepreneurs and potential stakeholders.

Building Block 3: Engaging in Validated Learning

A startup's initial business model represents a series of hypotheses that the focal entrepreneur needs to test and validate. Entrepreneurs can apply the validated-learning approach to nine key elements of startups. The **validated-learning approach** is “the process of demonstrating empirically that a team has discovered valuable truths about a startup's present and future prospects”. Therefore, entrepreneurs need to follow the scientific method by explicitly stating their hypotheses about their business models and then use experiments to test these hypotheses as part of the validated-learning process. The scientific method requires that entrepreneurs to be open to the possibility that their experiments will disconfirm their hypotheses. Entrepreneurs can then use the information from disconfirmed hypotheses to develop new hypotheses for subsequent testing. Building on the importance of an opportunity's market attractiveness, **learning involves testing the assumptions about a new venture's value proposition, customer segments, and channels to reach customers.**

- Specifically, entrepreneurs engage in testing to primarily address the following **four** questions: “**(1)** Do customers recognize that they have a problem you are trying to solve? **(2)** If there was a solution, would they buy it? **(3)** Would they buy it [the solution] from us? **(4)** Can we build a solution for that problem”.
- **The validated-learning approach** ensures that entrepreneurs do not skip **Questions 1–3** to focus solely on building a solution (**Question 4**).

Building Block 4: Building Minimum Viable Products

As detailed above, experiments are central to the lean startup framework. An experiment is “more than just a theoretical inquiry; it is also a first product”. That is, for hypothesis testing, an entrepreneur may need to develop and present his or her startup’s first product. An important question for entrepreneurs is how between an emerging startup and its stakeholder groups (e.g., potential customers).

- A ***boundary object*** is an artifact that provides a bridge connecting facilitating the flow of information to enhance learning. Boundary objects can take many different forms but include software programs, strategy tools, and narratives.
- Boundary objects likely facilitate validated learning when they :
 - (1) provide a shared language for two parties to exchange information with each other,
 - (2) help both parties learn about their differences, and
 - (3) provide a means for the parties to work together to transform knowledge.
- That is, entrepreneurs can use boundary objects across the borders between startups and their various community of inquiry members (e.g., potential stakeholders).

- Specifically, entrepreneurs need to build **minimum viable products (MVPs)**.
- An **MVP** is a “**version of the product that enables a full turn of the build-measure-learn loop with a minimum amount of effort and the least amount of development time**”.
- Therefore, an entrepreneur should build and present a first product that has only what he or she hypothesizes to be the critical features of the envisioned product and is sufficient to test that hypothesis quickly. This minimalist approach to experimenting is appropriate because under conditions of high uncertainty, “no amount of design can anticipate the many complexities of bringing a product to life in the real world”.
- **With an MVP, an entrepreneur aims to learn and use that learning to improve his or her startup’s business model.**
- Therefore, adding features to an MVP (**that do not facilitate learning**) is a waste of resources.
- Although there are some challenges with building an MVP—for example, legal issues, fears about competitors, branding risks, and impact on morale—**MVPs are critical to reducing the risks associated with starting a new venture.**

The notion of prototyping can provide insights into the *minimum* element of MVPs.

- **Prototyping** refers to “designers’ visualization and materialization skills, which they use to make intangible insights, ideas, and concepts tangible, sharable and understandable”.
- A **prototype** is below the minimum of an MVP when it fails to make intangible insights, ideas, and concepts tangible, sharable, and understandable to hypothesized stakeholders.
- In contrast, when a prototype makes a potential opportunity tangible, sharable, and understandable to stakeholders, then the prototype is an MVP and has served its purpose as a vehicle for learning.
- Although we often think of MVPs as three-dimensional objects, they can include sketches, simulations, and thought experiments. However, entrepreneurs need to recognize that what is sharable and understandable to one stakeholder group may not be so for a different stakeholder group. Therefore, entrepreneurs may need to create different versions of their MVPs for different target audiences.
- **MVPs are boundary objects.** Recognizing MVPs’ role as boundary objects can help entrepreneurs formulate and make the most of their MVPs. This role as a boundary object is important because it can be difficult to transfer knowledge across boundaries, such as the boundary between an emerging startup and its stakeholder groups (e.g., potential customers).

Building Block 5: Learning Whether to Persevere with or Pivot from the Current Course of Action

- While an entrepreneur can persevere with his or her startup's current business model by making incremental changes to improve it, the entrepreneur may learn (or come to suspect) that these incremental changes are not sufficient to advance the startup.
- **When incremental changes do not seem to be providing adequate progress, the entrepreneur may decide to pivot.**
- A successful pivot allows a startup to head in a new direction to reach a sustainable, repeatable business model that will enable the new venture to grow.
- To determine whether to persevere or pivot, an entrepreneur can set learning milestones as triggers for accumulating information to inform this decision.
- These milestones test the assumptions the entrepreneur made explicit at the beginning of the startup process (e.g., feedback on a first prototype).
- **The persevere-or-pivot decision is not easy because the greater the entrepreneur's investment of creative energy and other resources into a particular business model for his or her startup, the greater the entrepreneur's sunk costs.**
- **Sunk costs make perseverance more likely and make deciding to pivot more difficult.**
- Indeed, the lean startup framework emphasizes that entrepreneurs need courage to decide to pivot.

An Overarching Perspective on the Lean Startup Framework

- From an **overarching perspective**, there is more for us to understand about the lean startup framework, such as the **performance implications of using the lean startup framework** and the **contingencies** (including external context) **that may condition the lean startup framework's applicability and performance**.
- However, there is some evidence on the **performance benefits** of the lean startup framework and its contingencies.
- Specifically, one study found that **a scientific approach to venture startup—consistent with the lean startup framework—leads to more successful ventures than an approach that relies on unguided activities and entrepreneurs' intuition**.
- The **lean startup framework's effectiveness appears to come from its ability to decrease the likelihood that entrepreneurs will pursue unviable business models**.
- Indeed, a study of web-based startups found that **a learning-focused, agile approach to startup creation** —consistent with the lean startup framework— **leads to relatively more successful ventures**.

- Furthermore, it is important to understand when applying the lean startup framework may lead to **worse outcomes**. Several internal and external contingency factors seem relevant.
- **An ample funding for a startup may decrease the need for the lean startup framework.** Specifically, “when capital for startups is readily available at scale, it makes more sense to go big, fast and make mistakes than it does to search for product/market fit”.
- If the availability of financial resources **dampens** the relationship between the lean startup approach and performance, perhaps entrepreneurs can better apply the “***traditional innovation approach***” to their startups.
- The major point is that **the lean startup approach may not be highly effective for startups with high resource slack.**
- Still, given that most startups of independent ventures (vis-à-vis corporate ventures) occur in the face of resource scarcity (and even adversity), **the lean startup approach is likely to be appropriate for a large number of independent ventures.**

- Beyond these internal contingency factors, we propose some conditions external to ventures:
- 1) A **community of inquiry** is an informal group of stakeholders that can help an entrepreneur evaluate and develop a potential opportunity. For example, one study showed how communities of inquiry help entrepreneurs develop and refine their emerging ventures through interactions involved in prototype testing.
- 2) The lean startup approach relies heavily on **“external” participants** for testing (and reformulating) hypotheses using MVPs. These community members may include potential customers, technologists, scientists, and so on.
- Given the importance of a community of inquiry for the emergence of a startup, differences in the groups that make up a community of inquiry likely substantially impact the startup process.

- Moreover, **the lean startup framework offers a way for entrepreneurs to learn under conditions of uncertainty.**
- Although startups are typically embedded in dynamic or high-velocity environments, these environmental conditions vary on a continuum (vis-à-vis a dichotomy).
- Therefore, rather than assuming all startups face the same environmental conditions (because they involve entrepreneurial action), **entrepreneurs need to be aware of how different environmental dimensions**—more or less dynamism, more or less complexity, more or less hostility, more or less velocity—**influence the lean startup process**.
- For example, the **lean startup framework is likely less effective for starting up a new venture in an environment with low uncertainty** (e.g., a potential opportunity in a stable, munificent environment).
- Indeed, **in less dynamic environments, entrepreneurs appear to be “better off pursuing a munificent approach to planning”.**

Recap

- **The Lean Startup Framework: Its Origins, and Core Ideas**
- **Business Model Canvas**
- **Building Blocks of the Lean Startup Framework**
- **Market Opportunity Navigator**
- **An Overarching Perspective on the Lean Startup Framework**



Summary of Lecture Objectives

- 1) This chapter discussed the building blocks of the lean startup framework. In particular, we focused on open questions regarding its application and the potential boundary conditions for making each building block more or less effective in developing a startup. In summary, our discussion suggests that our understanding of when and how the lean startup framework is best applied can be enhanced by academic research addressing the following broad topics.
- 2) Future studies can investigate how startups' communities of inquiry, specifically users, technologists, potential customers, and scientists, influence the five building blocks of the lean startup framework and the outcomes of applying these building blocks for startups.
- 3) Future studies can investigate how the environmental/industry context, the state of the natural environment, and societal developments influence the five building blocks of the lean startup framework and the application of these building blocks for startups.



Summary of Lecture Objectives

- 4) Future studies can investigate how important behavioral (e.g., entrepreneurial search, use of boundary objects, use of narratives) and cognitive (e.g., entrepreneurial mindset, empathy, prosocial motivation, psychological ownership, biases) characteristics of entrepreneurs influence the five building blocks of the lean startup framework and the outcomes of applying these building blocks for startups.
- 5) Future studies can investigate the interrelationships between the five building blocks of the lean startup framework and the outcomes of the interdependencies between these building blocks for startups (e.g., when entrepreneurship should move from one building block forward to the next or back to the previous).

See you next lecture 04

Thank You

