UNIVERSITÀ DEGLI STUDI DI UDINE

DIPARTIMENTO DI SCIENZE ECONOMICHE E STATISTICHE

Design Thinking, Lean Startup and Agile Development: An Approach-Based Study

Maltauro N., Mason M.C., Moretti A.

Aprile 2024

5 / 2024

Management e Organizzazione

Abstract

This working project explores the convergence of Design Thinking, Lean Startup, and Agile Development into a novel approach called Business Telling, aimed at fostering innovation in the digital era. The methodology involved extensive literary research, expert interviews, and real-world testing. Findings reveal that traditional models are inadequate for current market demands, necessitating iterative, flexible, and dynamic strategies. Business Telling promotes a developmental mindset and customer-centric innovation, providing a robust framework for organizations to navigate digital transformation effectively. The research demonstrates the efficacy of combining these methodologies to enhance innovation management and better align with market needs.

Keywords: Innovation; Entrepreneurship; Design Thinking; Lean Startup; Agile Development; Structural Approach; Management.

1. Introduction

People in most countries are experiencing an entrepreneurial renaissance. However, these opportunities rife with many perils. For any company that achieves success, there are far too many failures, such as: "products pulled from shelves mere weeks after being launched, high-profile startups lauded in the press and forgotten a few months later, and new products that wind up being used by nobody" (Ries, 2011). These failures often result in severe economic damages to companies, investors, and individual employees. However, what makes them even more painful is that they represent an enormous waste of the most valuable resources of civilization: people's time, passion, and energy.

There are many reasons why new projects fail, including the illusion of good and reliable planning (Ries, 2011), the adoption of traditional approaches to project management (Blank & Dorf, 2012), and the desperate commitment to perfection at all costs (Fusco, Spagnolo, & Pinna, 2017). The literature offers a variety of methods, frameworks and philosophies to help people succeed in the innovation challenge. In the past thirty years, designers have spread the ideas of human-centered design, or Design Thinking; entrepreneurs and business professors such as Eric Ries and Steve Blank have developed Lean Startup and Customer Development; software developers have organized their work according to the principles outlined in the Agile Manifesto. Academia provides countless stories and examples of how companies have adopted these approaches, but they are no longer enough. The world is evolving; digital transformation is advancing at an increasing pace, and it confronts companies with the urgent need to change. The challenge is clear: whatever the sector or industry a company belongs to, it must adapt and reinvent itself. It has to embrace new organizational models, management principles, processes, and techniques to foster and stimulate innovation.

Business Telling promotes an iterative, flexible, and dynamic approach that managers and entrepreneurs can follow so as to exploit the many opportunities that characterize the digital era.

a. Theoretical Backgrounds

Digital transformation affects each and every aspect of the modern economy (Osservatorio Startup Intelligence; Digital Transformation Academy, 2019). There are no organizations, public companies, or even single individuals that can escape from this phenomenon and its effects (Galindo-Martín, Castaño-Martínez, & Méndez-Picazo, 2019). Technological advances are continually shaping the way people live and work. Competition becomes fiercer, day by day. Customers are more demanding now than they were five years ago. They are more difficult to please and will immediately turn to other companies if they do not feel satisfied (Anders, Kristensson, & Witell, 2012). The shift to the digital era is not only inevitable but also immutable,

fast, and radical (Osservatorio Startup Intelligence; Digital Transformation Academy, 2019). It is not only about knowing and adopting new technologies, such as Social Media, Blockchain, and Artificial Intelligence. It involves several implications that spread in every dimension (Huarng, Hui-Kuang Yu, & Lai, 2015). Digital transformation imposes a harsh change of direction on companies (Bharadwaj, El Sawi, Pavlou, & Venkatraman, 2013). Traditional and standard models are no longer suitable for managing innovation and pursuing the many opportunities that arise. They are too slow, closed, and sometimes expensive (Osservatorio Startup Intelligence; Digital Transformation Academy, 2019).

Knowing how to manage and foster innovation is a challenge increasingly felt by managers and entrepreneurs. Traditional cascading approaches must leave room for more comprehensive philosophies that encourage continuous iteration, incremental value generation, customer involvement, empathy, and team empowerment (Osservatorio Startup Intelligence; Digital Transformation Academy, 2019). A new innovation-driven culture must grow and spread across companies. Ambidextrous organizations must be born and work simultaneously on the exploitation of existing resources and competences, and the exploration of new opportunities (Åkesson, Sørensen, & Eriksson, 2018; Tushman & O'Reilly III, 1996). Research of Digital Transformation Academy and Osservatorio Startup Intelligence exhibited an emerging trend toward the adoption of new organizational models and management principles to foster innovation (see Exhibit 1.1).

b. The methodology

The methodology is structured in three steps: literature review, development of a new approach with expert support, and real-world testing. First, a comprehensive literature review was conducted to establish a robust theoretical foundation, incorporating insights from key authors such as Eric Ries, Jurgen Appelo, Jeff Gothelf, Alberto Savoia, and Alexander Osterwalder. The goal was to gather, analyze, and understand current theories, approaches, and practices for fostering innovation. Building on these findings, the Business Telling approach was developed through structured and semi-structured interviews with renowned professionals, ensuring the approach was grounded in current industry trends and practices. Finally, the approach was tested in diverse real-world contexts, including hackathons, business games, and open innovation activities with companies. This practical application allowed for the evaluation and refinement of Business Telling. In summary, this working paper results from a rigorous research process and extensive field-testing, incorporating numerous real-world examples to illustrate key concepts and validate the proposed methodology.

2. 1. The need of a new, comprehensive process

Every company aspires to thrive by captivating both customers and business partners. However, only few succeed in the task. Many organizations die even before having the opportunity to set this goal – especially startups (Nielsen Company LLC, 2014). Business Telling is a new approach that offers a combination of three different schools of thought to help individuals succeed in the innovation challenge. They include: Design Thinking, Lean Startup, and Agile Development (see Exhibit 1.1).

i. Exhibit 1.1: The three approaches of Business Telling

Design Thinking encourages teams to broaden their perspectives and dive deep in the lives of customers (Brown & Wyatt, 2010). It relies on collaboration, iteration, and empathy as the core to problem solving (Brown & Wyatt, 2010). The aim is to explore and understand the present world. Lean Startup encourages entrepreneurs to judge their progress differently (Ries, 2011). Since (aspiring) entrepreneurs often end up creating something that nobody wants, it is irrelevant whether they do it on time or on a budget (Ries, 2011). The approach focuses on experimentation, rapid iteration of ideas, and evolutionary processes, with a goal of understanding how to build the right things as soon as possible (Ries, 2011; Maurya, 2012). Agile refocuses development on shorter cycles, regular delivery of value, and continuous learning (Beck, et al., 2001). It seeks to get ideas to customers quickly, understand how these ideas are received, and iterate frequently (Rigby, Sutherland, & Takeuchi, 2016; Cram & Newell, 2016). Making things helps a team to learn and grow, and it places something right in the hands of people. Without customer feedback, it is difficult to know if the solution is on target or how to evolve the idea.

Business Telling prompts managers and entrepreneurs to ask themselves: “What problem do we have to solve?” before adopting a given practice or framework. It supports a developmental mindset, based on the idea that people’s approach to innovation should evolve with the company and its business model: The “what” and “how” must be tailored to the context and the goal that a company wants to achieve. As a result, Innovation is the result of a vortex (see Exhibit 1.2), in which five streams swirl together in an iterative, flexible, and dynamic model:

ii. Exhibit 1.2: The Business Telling Vortex

The *explore* stream is about finding out as much information as possible about potential customers and users. Entrepreneurs must dive deep into the lives of (potential) customers, understand their context, and feel their needs through their first-hand experience. By empathizing with people, they test their assumptions and gain genuine customer insights. The ideal result of this stream is a large and unstructured pile of findings with both emotional and factual content. In the Lean startup (or Customer Development) terminology, this is often referred to as "getting out of the building" (Ries, 2011; Blank & Dorf, 2012).

In the *ideate* stream, team members first share, process, and analyze all the information that they have gathered. The aim is to determine customers' jobs to be done and obtain a human-centered definition of the core problems that must be solved. The stream then involves the generation of many ideas to solve the problem that the team members identified. The result is a sketched hypothesis for a solution that can be evaluated and tested.

In the *validate* stream, team members create something to place in the hands of customers. The goal is to validate the problem and solution as efficiently and rapidly as possible using feedback. Teams build pretotypes and agile prototypes, which could give them fresh first-hand market data. Experiments do not have to be flawless; they may not even result in a product. What is needed is merely an approximation of the end experience.

Manage represents the fourth stream of Business Telling. Team members gather data and information about the effectiveness of the products they created and use the newfound knowledge to evolve their idea. Data must be analyzed and interpreted rigorously and objectively. The challenge is to assess whether product development efforts are leading to real progress.

In the *decide* stream, team members decide what to do with everything they learned. They confront the most challenging question entrepreneurs have to face: whether to pivot the original strategy or persevere (Ries, 2011). If team members are making good progress toward achieving the vision, that means they are learning properly and using the new knowledge efficiently. In this case, it is reasonable to persevere. If not, the strategy is flawed and requires an urgent change. When team members decide to pivot, they jump back to a previous flow of the Business Telling vortex to establish a new baseline.

3. 2. Understanding the Problem: The Explore Stream

The *explore* stream offers a problem-solving framework inspired by Design Sprint (Knapp, Zeratsky, & Kowitz, 2016). The term refers to the ideas explained in the book Sprint by Jake Knapp, John Zeratsky, and Kowitz. The authors describe Design Sprint as a way to gather all the key stakeholders and make them work together on a new project or initiative. Over five days, team members brainstorm, iterate, and finish the week with a testable prototype (Knapp, Zeratsky, & Kowitz, 2016). The approach is useful in bringing together a cross-functional and heterogeneous team of colleagues; revealing assumptions, opinions, and doubts about relevant business problems; and injecting those opinions in the context of market reality. The ideal result is a solution based on a set of hypotheses that people must continue to validate throughout the project life cycle.

The *explore* stream is designed for everyone who has a grand opportunity, problem, or idea and needs to get started. It represents a suggested kickoff for projects that will hopefully last for months or even years (Knapp, Zeratsky, & Kowitz, 2016). This framework requires much time, energy, and unshakable focus. The more significant the challenge and motivated the team, the better the beginning will be (Knapp, Zeratsky, & Kowitz, 2016).

1. 2.1 Set a vision

Entrepreneurs, intrapreneurs, and innovation leaders need a grand vision (Caneque & Hart, 2017). It helps them to define the hearth of an innovative product: what it aims to generate in its customers and end-users. A great vision allows people to assert and visualize the value that should

be created and delivered (Appelo, 2019). In this way, everyone is on the same wavelength with regards to the direction of the team's developmental efforts. In Jurgen Appelo's own words:

Don't confuse a Product Vision with a strategic plan. Sharing a dream with your team is not about a list of features on a Product Roadmap … A vision is not the slogan on a mug filled with cappuccino that was excreted from a push-button machine. Instead, your vision is a verbal image of the future, in language that you would use when you told your story in a bar, to convince your friends to help you make things happen (Appelo, 2019).

To start the discussion, the entrepreneur (or project leader) should ask his or her team members the following questions: "Why are we conducting this project? Where do we want to be in three months, six months, or even a few years from now?" (Knapp, Zeratsky, & Kowitz, 2016). A vision is a glimpse of the future; it should explain the team's ambitious long-term goal (Caneque & Hart, 2017). Members should not be worried about overreaching. The next activities help them to start and make real progress towards even the most meaningful goal.

2. 2.2 Map the customer experience

Customers react harshly to anything that is not designed according to what they want or need (Savoia, 2019). Negative word of mouth and mean reviews may be deadly (East, Hammond, & Lomax, 2008), especially at the beginning. Managers, founders, and project owners should not think of themselves as the heroes who will save the company in any circumstance, because they cannot. Customers are the only ones who will determine the outcome of the project (Deshpande, 2014). Therefore, it is crucial to know and understand them fully since the beginning.

Journey mapping involves the portrayal of a (potential) customer's experience as he or she interacts with a company when receiving its products or services (Liedtka & Ogilvie, 2011). The map can illustrate the actual or ideal journey and should include all the main steps required for the customer to move from beginning to end (Knapp, Zeratsky, & Kowitz, 2016).

The process helps team members to shift their attention onto customers' current experience rather than onto products or the organization itself. Additionally, it allows them to define and group the differences among customers. Journey mapping is a practical activity to shift people's focus from "What do we want?" or "What does the company want?" to "What is the customer trying to do?". In his book Sprint, Jake Knapp offers five pieces of advice for completing the map in the best way:

1. List the actors: They include all the essential characters that appear in the story. They may consist of different types of customers, key partners, and suppliers;

2. Write the ending: Sometimes people find it easier to figure out the end before the middle of the story;

3. Use words and arrows in between: The map must be functional and easy to understand;

4. Keep it simple: The map should have between five and fifteen steps. If the number exceeds twenty, it is likely to be too complicated;

5. Ask for help: All the team members should contribute to the work.

3. 2.3 Validate current knowledge

Traditionally, target customers are defined according to their demographic characteristics. These include age, gender, ethnicity, education, and income level, among others. Such market segmentation may be useful when a company needs to select the distribution channels for traditional advertising. Nevertheless, demographics become almost useless when we want to design an innovative product or service (Appelo, 2019). If an entrepreneur's objective is to create a successful product for people, he or she needs to understand those people (Brown & Katz, Change by design, 2011). Many companies invest large amounts in market research, "yet, often wind up neglecting customer perspective when designing products, services, and business models" (Osterwalder & Pigneur, 2010). People usually feel over-confident regarding their quantitative and theoretical findings. However, a trap may be hidden beneath their feet.

Harvard Business School professor Clayton Christensen shared a story to illustrate the importance of understanding customers. A fast-food restaurant wanted to increase milkshake sales and initially approached the problem by analyzing customer demographics and preferences. Despite making the shakes more concentrated, sweeter, or affordable based on customer feedback, sales did not improve. A new researcher joined the study and observed customer behavior directly in the restaurant. He noted that 40% of milkshakes were purchased in the early morning by customers who were usually alone and consumed the shakes in their cars. Through interviews, he discovered these customers bought milkshakes to make their long, tedious commutes more enjoyable. The milkshakes suppressed hunger until midday, were convenient to consume with one hand, and took 20 minutes to drink, which helped pass the time during the commute.

In the end, it did not matter much whether the shakes were healthier, cheaper, or chunkier. People did not buy those products because of such proprieties; they had completely different needs. In other words, entrepreneurs must understand the desires, motivations and goals of the target customers to design the right solutions. They must determine whether their current knowledge

reflects reality, whether individuals act in the way they depicted in the Journey Map, and – if not – make the appropriate changes.

4. *2.4 Pick a target*

The problem-setting phase finishes with the decision of the main customer segment that the team wants to serve, and the activity (or step) in the Journey Map that members want to address (Knapp, Zeratsky, & Kowitz, 2016). The project owner should make the final decision after hearing everyone's ideas, concerns, and thoughts. Clarity in communication is essential at this point. The team should have no doubts with regards to the goal and whom the solution should be designed for.

4. 3. Generating New Solutions: The Ideate Stream

The explore stream expresses the importance of mapping and understanding the present. It helps the team define the challenge to tackle and choose the primary customer segment to satisfy. The ideate stream stimulates creativity and fosters the creation of several ideas. Each person processes all the relevant information that he or she has gathered and generates hypotheses for possible solutions that can be evaluated and tested.

a. 3.1 Synthesize

Team members must share and process all the information from the empathize stream. The aim is to determine the people's jobs to be done and define the core problems that must be solved.

The Solution Design Canvas (see Exhibit 4.3; Fusco, Spagnolo, & Pinna, 2017) is a visual map created by the Italian company Beople to help entrepreneurs design human-centered solutions. It analyzes the decision-making mechanisms of customers in depth and identifies the required elements for formulating solutions suited to their needs:

- The *jobs to be done* describe the most significant problems that the individual wants to resolve in that situation (Christensen, Anthony, Berstell, & Nitterhouse, 2007): Why does she have that intention? What are the issues that she is trying to solve, or the deep needs that she is seeking to satisfy?
- *Obstacles* include anything that annoys or limits the individual before, during, and after completing a task.
- *Success criteria* refer to all the elements, results, and conditions that attest to the achievement of the person's jobs.

- *Solution requirements* allow people to define the characteristics that the solution must, may, and must not have in order for the target persona to complete their tasks while satisfying success criteria.

b. 3.2 Find inspiration

Everyone recognizes the importance of finding the right solution at the right time (Savoia, 2019). In 1908, a young woman named Melitta Bentz was frustrated with drinking poor, grainy coffee (Moses, 2018). Determined to find a better way, she experimented with a piece of blotting paper from her son's notebook, which was thick, disposable, and absorbent—ideal for filtering coffee. She poked holes in a bronze pot, placed the paper inside, added ground coffee, and poured hot water over it. The resulting drink was remarkably smooth, leading to her invention of the paper coffee filter (Moses, 2018), a tool still widely used today.

Everyone would love to design something completely new. However, astonishing ideas do not appear casually. Sometimes, innovation may be obtained just by shaping or mixing the core elements of existing ideas, or by dressing them up with particular characteristics. Team leaders should start the activity by asking everyone to come up with a list of existing solutions to review for inspiration (Knapp, Zeratsky, & Kowitz, 2016). These may include products or services from different industries, fields, and contexts that share some of the requirements identified in the previous phase. The members should think outside the box, on the condition that everything has something that the team can learn from (Banfield, Lombardo, & Wax, 2015). After a few minutes of thinking, each person should write his or her top products on Post-it notes and stick them to the wall. One at a time, individuals who suggested the products have to present what they like most about them to the other team members. This can take up to three minutes. During these presentations, team members should take notes on any interesting concepts that emerge, fostering a collaborative and innovative environment.

c. 3.3 Sketch

Idea generation begins with sketches. According to Stephane Cruchon, they represent the easiest and quickest way to translate abstract ideas into concrete solutions that people can understand and evaluate (Knapp, Zeratsky, & Kowitz, 2016). Additionally, sketching allows individuals to design these solutions while working alone. In this way, they have time to perform some research, find inspiration, and stay focused on the problem. The pressure of working alone usually spurs everyone to give their best.

d. 3.4 Decide

It is time to decide which solution to prototype. Team members create a museum of hypotheses by sticking their ideas on the wall. This composition empowers people to spread out, fill the room, and examine each sketch without being crowded by others.

The decision-making process may be designed as a three-step activity. For example:

1. Heat map: Everyone examines all the solutions in silence and uses dot stickers to mark interesting elements;
2. Pitch and critique: This is a quick presentation of the exciting parts of each solution; and
3. Vote: Each person chooses the idea that he or she prefers and votes for it with a dot sticker. The team leader then makes the final decision.

e. 3.5 From Ideas To Experimentation

When an idea is found, the desire to develop it starts burning in everyone's hearth. People fall in love with that idea and want to realize it right away. However appealing it may be, this course of action symbolizes an expensive and very risky shortcut (Savoia, 2011). The data, information, and insights that team members collect during the explore and ideate streams refer to something abstract that people might find it hard to imagine, and their opinions might not reflect reality.

The Law of Market Failures states that most wannabe innovations fail in the market. To fight the odds, entrepreneurs have to find the right solution to the right problem, execute it properly, and collect and act on New Information Collected through Experimentation (NICE). NICE is actual market data obtained from carefully designed and personally conducted experiments. To qualify as NICE, data must meet the requirements of newness, relevance, trustworthiness, and significance.

5. 4. Evaluate and Test the Hypothesis through the Validate Stream

There is no more important question than "What if we find ourselves building something that nobody wants?" (Ries, 2011). People tend to undervalue the time, energy, and resources required to validate a business model (Appelo, 2019). Almost everyone believes that the greatest hurdles in developing an innovation include getting funded and finding the right team members. However, the reality is different. Several sources show that most entrepreneurs lose their jobs due to faulty business models (Feinleib, 2011; Fractl, 2016; Zimmerman, 2015).

The Lean Startup method offers entrepreneurs a framework to manage new product development from an initial idea to a validated product (Ries, 2017). It propels people to define, test, and measure hypotheses through several build-measure-learn cycles. The goal is to minimize project risk and nurture validated learning through assumption-driven experiments, testing, and iteration (Ries, 2017).

Business Telling adopts lean experiments to validate a business model's most critical assumptions. Team members will create something to place right into the hands of customers, without whose feedback it would be impossible to know whether the solution is on target and how to evolve it.

a. 4.1 Define the hypotheses

In 2004, three college students arrived in Silicon Valley to present their new social network: Facebook (Kirkpatrick, 2011). Their names were Mark Zuckerberg, Dusting Moskovitz, and Chris Hughes. At that time, Facebook was neither a market leader nor a first mover, with many competitors offering similar or superior platforms. Additionally, Facebook was active on just a few college campuses: “With 150,000 registered users, it made very little revenue, yet that summer, they raised their first $500,000 in venture capital” (Ries, 2011).

The key to Facebook’s early financial success lay in two primary factors that captivated investors (Kirkpatrick, 2011). First, Facebook’s active users spent significant time on the platform, with over half visiting daily. Second, the platform's adoption rate was rapid and organic, as users invited friends to join, leading to exponential growth. Launched at Harvard on February 4, 2004, Facebook had nearly three-quarters of Harvard students signed up by the end of the month (Ries, 2011).

Many economists criticized the faith that early investors placed on the newborn social network. They claimed that it had no business model and only modest revenues. However, after a month, Facebook had already validated its essential hypotheses: The business was value-creating and had a very strong engine of growth.

Several entrepreneurs, intrapreneurs, and managers are trying to create the next Facebook, yet they do not follow the lessons shown in its story. When developing an innovation, they should focus their early efforts to identify, define, and validate the most significant hypotheses that have to be true for their businesses to succeed. These are often called leap-of-faith assumptions, because the future of the entire organization relies on them (Mullins & Komisar, 2009). If they prove to be accurate, tremendous opportunities await. Otherwise, the company risks floundering in the abyss of failure.

b. 4.1.2 Development of assumptions: Market engagement hypotheses

Clarity of thought is a requirement. If a novel product idea is vague, unclear, and subject to multiple interpretations, then team members do not possess a solid basis for moving forward. Before they start testing an idea, they must explain it with sufficient clarity in order to guide the design of valuable experiments (i.e., activities and techniques that lead to relevant insights).

A Market Engagement Hypothesis (MEH) identifies an essential belief or assumption about how the market will react to a given product or service (Savoia, 2019). Alberto Savoia offers a useful technique to help team members in defining a testable, precise and discrete hypothesis: *"At least X% of Y will Z"* (Savoia, 2019). In the aforementioned example, "X% is a specific percentage of your target market, Y is a clear description of your target market, and Z is how you expect the market will engage with your idea" (Savoia, 2019).

c. 4.1.3 Finding early adopters: Hypozooming

Hypozooming means starting from a precise but broad MEH and zooming in until we reach a version of the hypothesis that is immediately actionable and testable. While the former describes the ultimate target market, the latter identifies a small, local, and reliable subset of (potential) customers. Eric Ries refers to them as early adopters (Ries, 2017): a special breed of customers that do not need a perfect solution to capture their interest. Entrepreneurs may have global plans for their product, but, before committing to development, they should experiment their idea on a small scale and hypozoom.

d. 4.2 Experiment

When an entrepreneur wants to launch an innovation, he or she is sure to answer a particular customer need. However, this belief assumes that people will always use any solution to satisfy the problems they feel (Fusco, Spagnolo, & Pinna, 2017). Unfortunately, the reality is different. Many new products and ideas fail, regardless of the needs they address (Savoia, 20119). Entrepreneurs tend to fall in love with their visions (Barringer & Ireland, 2015) and start investing right away (Blank, 2012). They arrogantly believe that they know what customers want and need, and they impulsively commit to developing what they have in mind. However, there is no amount of money, time, and effort that can make the wrong solutions succeed.

Traditional prototypes are very effective at validating and measuring the market potential of new ideas (Kawasaki, 2015; Richardson, 2015). They translate abstract concepts into concrete products that people can evaluate objectively. Nevertheless, in some cases, the creation of a prototype may be too costly, time-consuming, and complicated. "Furthermore, most prototypes

are built to answer questions such as, “Can we build it?” instead of “If we build it, will people buy it and use it?”(Savoia, 2011). If we cannot answer the latter questions positively, the former ones become of little interest. That is why companies should validate the problem before starting to build the solution: They should create a pretotype.

Savoia defines pretotyping as “testing the initial appeal and actual usage of a potential new product by simulating its core experience with the smallest possible investment of time and money” (Savoia, 2011). Examples of pretotyping strategies include the mechanical turk (Schaffer, 1999), the pinocchio pretotype (Butter & Pogu, 2002), the fake door pretotype, the video pretotype (Smale, 2018; Ries, 2011), and the one-night stand pretotype (Gallagher, 2017). In general, there are three essential components that an experiment has to satisfy in order to be defined as a pretotype:

6. It has to produce valuable data, information, and insight (i.e., NICE);
7. It has to be implemented quickly; and
8. It has to be implemented cheaply.

a. 4.3 Validate the solution

Once team members have validated customer interest, they are ready to determine how to build the solution and turn their pretotypes into an agile prototype. An agile prototype is a product with the fewest number of features needed to solve the core problem that entrepreneurs have identified, and that is suitable for future, fast, and iterative improvement cycles. By creating and testing it, a team can learn vital information about technical viability and customers’ preferences.

One of the most troublesome aspects of the agile prototype is the challenge that it poses to conventional perceptions of quality. Many business and engineering philosophies focus on delivering a high-quality experience as a primary objective: It represents the basis of Six Sigma (Pande & Holpp, 2001), lean manufacturing (Liker, 2005), and extreme programming (Beck, 2000). These discussions of quality assume that entrepreneurs already know what specifications, features, and characteristics their customers will value. In a dynamic and uncertain environment, this is a dangerous assumption to make (Ries, 2011).

Teams can use a low-quality agile prototype to learn how customers will approach a given solution and which its attributes they care about, thereby obtaining a solid empirical foundation on which to build future products.

1. 4.4.1 From the agile prototype to the "manage" stream

To really solve a problem, team members should commit to iteration (Ries, 2017). They have to commit to an unbreakable (ex-ante) agreement that they will not give up hope, regardless of what happens during the agile prototype experiment. An agile prototype represents a step towards the journey of learning. Down that road (i.e., after several iterations), we may discover that customers do not appreciate some elements, characteristics, or features of our product and decide whether to pivot or try a different method to achieve the initial vision. We need a disciplined, systematic approach to obtain validated learning, manage progress, and ensure informed decisions..

9. 5. Manage

In the manage stream, we present several tools and techniques to approach a revised version of Eric Ries' innovation accounting (Ries, 2017), and help team members ensure they are collecting valuable information to grow a repeatable, scalable, and profitable business model (Blank, 2012). Our innovation accounting is structured in three steps:

1. First, experiment with pretotypes and agile prototypes to establish real and fresh market data (NICE);

2. Second, based on feedback, iterate to evolve the chosen agile prototype from the baseline toward the ideal. This process may require many attempts. Team members can use a Kanban Board to visualize work, manage micro-changes, and optimize their product (Benson & Barry, 2011).

3. Third, evaluate the result and decide whether to pivot or persevere (Ries, 2017). If team members are making good progress toward achieving the vision, that means they are learning properly and using the new knowledge efficiently. In this case, it is reasonable to persevere. If not, the strategy is flawed and requires an urgent change. When team members decide to pivot, they jump back to a previous flow of the Business Telling vortex to establish a new baseline.

a. 5.1 Evaluate data from experiments

Innovation requires us to measure progress against a high bar: that a sustainable business model can be built around a new product idea (Blank & Dorf, 2012). This evaluation is possible only if we have formulated precise, tangible hypotheses ahead of time and followed those assumptions with reliable tests (Savoia, 2019). The validate stream helps us convert an undefined, nebulous, and poorly articulated idea to testable, precise, and discrete hypotheses. Through pretotypes and

agile prototypes, we can then collect NICE by testing those hypotheses rapidly and inexpensively. The manage stream allows us to analyze, understand, and exploit the information we gather.

1. 5.1.1 Channel work activities through a One Metric That Matters system (OMTM)

Entrepreneurs, intrapreneurs, and managers must know the tasks they need to complete, what the next milestones should be, and how they will measure progress. Today, data is incredibly accessible and easy to collect (Kaushik, 2009). People can use multiple digital tools and software to monitor and understand what is happening around their businesses (Croll & Yoskovitz, 2013). However, the ability to track vast amounts of information might lead many to confusion. Innovation requires both focus and the ability to preserve it, but focus does not mean myopia. There is no single universal metric that entrepreneurs should follow throughout their careers (Appelo, 2019). However, as time progresses, there always tends to be one metric that becomes more significant than the others (Croll & Yoskovitz, 2013). Alistair Croll and Benjamin Yoskovitz refer to this measure as the One Metric That Matters (OMTM) (Croll & Yoskovitz, 2013). According to the book Lean Analytics, there are four main reasons why entrepreneurs should adopt such a system (Croll & Yoskovitz, 2013):

1. It answers the most vital questions they have. Over time, team members will be trying to answer several different questions and juggling thousands of problems. Entrepreneurs need to identify the riskiest areas of their business models as rapidly as possible, which is where the most vital question lies. When they find it, they will know what metric to track in order to answer that question. That is the OMTM.

2. It pushes them to draw a line in the sand and set explicit goals. After they have determined the fundamental problem that they want to tackle, team members must set explicit goals. The OMTM helps entrepreneurs to create a shared definition of success.

3. It sharpens and directs the focus of the entire organization.

4. stimulates a culture of experimentation. As we have seen in the validate stream, learning that comes from It planned, methodological testing moves things forward. Entrepreneurs, managers, and team leaders must actively encourage and inspire everyone to experiment. The OMTM helps them achieve this outcome.

2. 5.1.2 Vanity versus actionable metrics

Some companies pretend to be data-driven. Unfortunately, while many embrace the data part of the mantra, only a few focus on the driven aspect (Croll & Yoskovitz, 2013). A vanity metric is

a piece of data that team members cannot act upon and is not able to guide them on a given course of action (Ries, 2011). All the data, information, and insights entrepreneurs collect must inform, guide, and improve their business model and, ultimately, help them decide on a given course of action. However, actionable metrics are neither magic nor the solution themselves. They will not tell people what they should do but, rather, will advise them if their activities are on the right track to achieve their vision.

3. *5.1.3 Action versus result metrics*

Some teams might find it useful to separate action metrics from result metrics (Appelo, 2019). Action metrics try to predict the future. Result metrics describe the past. They can indicate a problem. However, by the time team members assemble data, it is too late. However, depending on the circumstances, this does not mean that one should not act on a result metric. Action metrics require several cohort analyses and the opportunity to compare groups of customers over time (Croll & Yoskovitz, 2013). Additionally, during the first days of a company, entrepreneurs may not have enough information and experience to determine how a metric relates to the others. The message included in this paragraph is different: When an entrepreneur decides to adopt a result metric as OMTM, he or she has to look for and monitor the action metrics that are connected (Appelo, 2019).

b. 5.2 Test hypotheses through split testing and cohort analysis

Stalled growth is one of the most lethal and pressing problems that a company may face (Olson, Van Bever, & Verry, 2012). Entrepreneurs must learn how to continually engage customers, adapt nimbly to their ever-changing needs and desires, and turn them into a viable source of value.

1. *5.2.1 Split testing*

Team members can use a split test to compare the performance of two or more value propositions. In particular, they set up two different experiences: the champion, (i.e., control) represents the current system, while the challenger (i.e., treatment) is a variation that endeavors to improve something (Kohavi & Thomke, 2017). Visitors and users are randomly assigned to the experiences, and team members monitor, analyze, and compare the results. People may believe that more substantial investments result in more significant impacts. However, it rarely works that way: “Though the business world glorifies big, disruptive ideas, in reality, most progress is achieved by implementing hundreds or thousands of minor improvements” (Kohavi & Thomke, 2017).

2. *5.2.2 Cohort analysis*

As entrepreneurs build and test their agile prototypes, they will iterate constantly. Users who try the products in the first week will have a very different experience from those who will use them later. Cohort analysis can help teams understand how the various changes and improvements affect the customers' behavior and overall experience (Ellis & Brown, 2017). It allows members to probe deeply into their NICE and discover why users stay or leave. This practice involves dividing customers and users into distinctive groups by a common trait. Each group is called a cohort, which is defined as "participants in an experiment across their lifecycle" (Croll & Yoskovitz, 2013).

c. 5.3 Visualize and manage work with Kanban Boards

Toyota popularized the adoption of Kanban systems as a scheduling and inventory-control technique to achieve just-in-time delivery through increased collaboration and constant improvement (Liker, 2005). Nevertheless, we can apply the same practices and principles to different types of processes, such as the development of new features for a product, the design of reliable experiments for testing a business model, and the creation of content items for a social network. A Kanban system acts as a focal point for team members. It enables them to visualize, manage, and optimize their workflow (Benson & Barry, 2011).

d. 5.4 From "manage" to "decide"

Successful entrepreneurs often follow a familiar storyline in films and books: they recognize an opportunity, build a team, and achieve glory after years of hard work. However, the brief montage that summarizes their journey omits the real, painstaking work behind innovation. Great ideas, the mapping of canvases, and the PowerPoint presentations represent a tiny percentage of entrepreneurship. The vast majority is the difficult and sometimes painful work measured by innovation accounting (Ries, 2011): the choice of which customer segment to target, product improvement and prioritization decisions, and an uninterrupted sequence of experiments that can demolish the grand vision.

However, there is one particular decision that stands out above all others. It is the most challenging, the most time-consuming, and the greatest source of doubt for entrepreneurs (Ries, 2011). Everyone must sooner or later face this fundamental question: Should we pivot or persevere? (Ries, 2017)

10. 6. Decide

Every entrepreneur, manager, and intrapreneur eventually confronts a major challenge in developing a successful innovation: deciding whether to pivot or persevere (Ries, 2017). All the approaches, tools, practices, and techniques discussed in each stream seek to help team members answer a seemingly simple question: Are we making adequate progress to believe that our Market Engagement Hypothesis is correct, or do we have to make a significant change? That change is called a pivot: a structured course correction designed to test a new fundamental hypothesis about the product (Ries, 2011).

a. 6.1 The decision to pivot

A pivot may be the only way to heal an ailing strategy. However, most people are reluctant to undertake such a change. There are three main reasons why this happens (Ries, 2011). First, vanity metrics deceive entrepreneurs. They spur them to reach lavish but erroneous conclusions and to live in their imaginary world. They deprive team members of the urgency to change. Second, entrepreneurs who develop a vague, ambiguous hypothesis will never experience a real failure, and will never hear the call to embark on the drastic change that a pivot requires (Ries, 2017). Third, entrepreneurs are afraid (Savoia, 2019). They fear that the vision, which the whole team believes in, might be deemed wrong without having been given a real chance to prove itself. Therefore, they oppose creating pretotypes and agile prototypes, split testing, and other practices to validate hypotheses. Ironically, this fear raises the risk because testing does not happen until the vision is realized. However, when that time comes, it may be too late to change. Innovation involves aligning everyone's efforts with a working strategy to create, deliver, and capture value. Pivot helps us to find a path toward growing a sustainable business (Ries, 2017). Welth

The purpose of experimentation is to collect enough data to evaluate whether the current strategy is working. If each new experiment leads to better and more promising results, team members should persevere with their improvements. In contrast, if customers show indifference toward the product (or the changes), or share only negative feedback, it is time to pivot: to change the existent strategy without altering the grand vision (Ries, 2017).

Academia overflows with successful pivot stories. Examples include PayPal, which began as a money transfer mechanism for Palm Pilots; Netflix, which went from mailing DVDs to offering online streaming; and Groupon, which started as a collective activism platform called “The Point”. Entrepreneurs should analyze their NICE, find the flaws in their original hypotheses, and try to correct them as soon as possible. If no pivot seems to work and results are poor, the other remedy is to abandon the current strategy and jump to the explore stream. Business Telling has

no end or beginning. It promotes a continuous ride from one stream to another and prevents entrepreneurs, managers, and innovation leaders from resting on their laurels. Innovation is the result of a developmental process in which several practices, approaches, and techniques merge together in a beautiful, ever-changing mosaic.

11.Conclusion

Innovation is a major, ever-changing topic that requires continuous analysis and research. Today, individuals share a sincere need to understand if and how to correlate the various practices, tools, and techniques that are popularized in academia. There is a significant demand for clear guidelines and new, comprehensive, and flexible models. Business Telling serves this purpose and provides readers with a common thread between different methodologies that have traditionally been managed separately. It advocates an iterative, flexible, and dynamic approach that can be followed by managers and entrepreneurs to exploit the many opportunities that characterize the digital era. Business Telling supports an evolutionary mindset and the idea that people's approaches to business development should evolve with the company and its context. In the model, innovation is the result of a vortex, in which five streams swirl together in an endless, ever-changing fashion.

Exhibit 7.1 – The logic, tolls, and methodologies behind Business Telling.

	Objective	**Main concepts and tools**	**Methodologies**
Explore	Map the context, empathize with customers, identify problems.	Journey map; Customer interview; Ethnographic research; Personas.	Design Thinking, Design Sprint.
Ideate	Generate hypotheses for solutions.	Customer's job to be done; Brainstorming.	Design Thinking, Design Sprint.
Validate	Design experiments and use NICE to validate critical hypotheses.	NICE; MEH; Pretotype; Agile prototype.	Lean Startup, Agile Development.
Manage	Manage workflow and iterate the product toward the optimal.	Skin-in-the-game caliper; TRI meter; OMTM; Split test; Cohort analysis, Kanban.	Lean Startup, Agile Development, Growth Hacking.
Decide	Decide whether to persevere with the current strategy or to pivot.	Business Model; Pivot.	Lean Startup.

This working paper offers an important contribution to the extant literature regarding the development of innovative ideas based on three primary dimensions:

- Position. The market is moving toward a new era in which the integration and exploitation of digital technologies have opened a vast sea of opportunities. Successful entrepreneurs make headlines, and their stories inspire others to bring their own ambitions to life. Unfortunately, any success is followed by far too many failures: software removed from stores mere weeks after being uploaded, online platforms lauded in the press and forgotten a few months later, and promising new technologies that end up never being used. The myth of perseverance can trick people into believing that everything can be achieved if one tries hard enough. People impulsively commit to developing their ideas, but no amount of money, time, or effort can make the wrong solutions work. The success of a product does not depend on the perseverance, passion, and commitment of team members; it depends on customers and on whether they decide to use it or not. Digital transformation requires a greater coherence between a team's development efforts and the real needs of the market. Organizations must improve their ability to recognize, evaluate, and pursue the right opportunities. Business Telling serves this purpose and allows managers and entrepreneurs to save time and resources while minimizing the risk of failure.

- Correlation. Business Telling identifies a common thread between various approaches that have been managed separately. Design Thinking, Lean Startup, and Agile are all useful in product development and help managers, entrepreneurs, and intrapreneurs move from one to another without losing sight of their grand vision.

- Clarity. Business Telling recognizes the strengths and specialties of the aforementioned methodologies and defines their specific areas of expertise. Design Thinking prompts teams to broaden their perspectives and dive deep in the lives of customers. The explore and ideate streams rely on customer-centricity, collaboration, and empathy as the core of problem solving. The goals are to understand the present world and imagine the future. Lean Startup encourages entrepreneurs to judge their progress in terms of validated learning. The validate stream focuses on rapid experimentation and collection of new, relevant, trustworthy, and significant data (NICE). Team members have to determine if a problem is worth solving and if it is possible to build the required solution. Agile principles help entrepreneurs minimize time-to-market, deliver customer value regularly, and pursue continuous learning. The manage stream seeks to get ideas to customers quickly, understand how these ideas are received, and iterate frequently. Making things

allows a team to learn, grow, and optimize their products. Eventually, managers and entrepreneurs encounter a major question: whether to persevere, pivot, or kill the current strategy. This is the subject of the decide stream, supported by the Lean Startup methodology.

Business Telling has piqued the interest of several managers, innovation experts, and wannabe entrepreneurs who have expressed curiosity in reading this thesis and have provided their contact information to be sent the finished work. Although this alone does not prove the efficacy of the model, it reveals a real need felt within the entrepreneurial world. Currently, the market has no clear answers, and people are constantly looking for new ways to stimulate innovation.

Business Telling can unlock a vast arsenal of entrepreneurial potential. It arms the individuals with the right mindset, principles, and tools needed to fight the beast of failure lurking behind the digital transformation. Business Tellers declare assumptions explicitly and test these rigorously to uncover the truth behind a project's vision. They side with neither the defenders of quality nor the champions of reckless advance; instead, they acknowledge that speed, experimentation, and quality are allies in the pursuit of continuous innovation. Business Tellers face failures, disillusions, and setbacks with honesty, humility, and learning, not with recrimination, finger-pointing or blame. Moreover, they evade the drive to slow down, chase perfection, and hide within the shelter of prevention. Instead, they minimize time-to-market by avoiding excess work that does not guide learning.

Business Tellers commit to creating, managing, and leading innovative organizations with a mission of building sustainable value and changing the world for the better.

Most of all, they welcome change as the primary means to grow.

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