Lean Venturing: Entrepreneurial Learning to Model and Grow New Business

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Abstract: Corporate venturing is a real adventure that teams may only master gradually through research and learning, which proceeds through iterative specification and validation of business models. Based on this understanding we develop a five E framework for corporate venturing that is organized by learning goals on five levels of maturity, and backed up with scaffolding tools and methods. It shows how to explore, elaborate upon, evaluate, experiment with and evolve assumptions. Scaffolding tools and methods support the two main sets of activities required within this framework: the creative exploration of new ideas and opportunities, and the iterative specification, quantification and evaluation of assumptions. Examples from ten new venture projects in the telecommunication industry illustrate the approach.

Keywords: Corporate venturing, lean management, business models, business model innovation; corporate venturing portfolio; innovation management; organizational learning.

1 Old hands on new venture ships

Corporate venturing is a real adventure: High risk loving crews gather up to leave their comfort zone and enter an open-ended journey exploring and exploiting potentials for business that did not exist before. No reliable maps exist; even guiding stars shift positions. Very few survive as not only adverse winds and unforeseen icebergs abound, but also intellectual property pirates and copycat carriers populate even blue oceans. The ships setting out on this journey are being built on the way. Their mortality is much higher than their survival rate. Crews need unique capabilities to sense, seize, and transform windy opportunities into sustainable progress. And yet, while fashionable figures of open and disruptive innovation, business model innovation and service design thinking are still dancing by on the docks corporate venturing is rising as the new star on the horizon. Anyone, from lonely desperados to professional copycats, from small and

medium to large enterprises puts resources aside and sets out ships onto the journey. Trying to Providing methodological coaching we accompanied ten of these real world pioneers mastering their challenges.

Management of startups and corporate ventures has been understood as either chaotic to be mastered only by transcendent forces such as entrepreneurial spirits, or as an engineering science (Ries 2011) that can be taught, but the importance of learning within small entrepreneurial groups and its impact on the success of new ventures has not yet been fully conveyed. This paper unfolds an understanding of venturing as a research-based learning process with respect to the global components and distinct details of business models. Based on this theoretical understanding and a review of ten projects we develop a process framework with five levels of maturity and monitoring of learning goals. Suitable tools and scaffolds for each level are shown and illustrated with reference to the cases. They show that each new venture is an idiosyncratic endeavor to which no standard measures apply. Instead self-defined learning goals addressing the basic dimensions of business models, and tested assumptions to be refined are needed to conquer uncharted waters.

2   Related literature

The elaboration of the framework we present follows up on previous work on business modeling for entrepreneurial teams (Breuer & Ketabdar 2012), which is consistently driven by the values new business may provide to customers and society. It addresses corporate entrepreneurs and innovation managers by proposing an approach to strategically build, manage and monitor a portfolio of corporate ventures. Strategic management of corporate venturing portfolios is a relatively young topic. Feeding into the trend of open innovation, and complementary to the internalization of external knowledge, corporate venturing and spin-off activities externalize activities that do not fit well to the current core business (Rohrbeck et al. 2007). Thus, corporate venturing allows companies to maintain the strategic course while commercializing extremely innovative and risky ventures or such that are not in line with the existing product portfolio, through a spin-off (Block & MacMillan 2003). One major reason for spinning off valuable assets and activities is an expected misfit in the in the business model they require. Modeling new business is a natural starting point for entrepreneurial projects. Within the last decade a variety of definitions of business models, their components, and how-to approaches have been proposed (e.g. Amit & Zott 2001; Zott, Amit & Massa 2010; Chesbrough 2006; Teece 2010). Still, Burkhart et. al (2011) identified need of research and development regarding business modeling management and tools, visualization, evaluation and simulation. Here our own development of such tools and techniques provides a framework and scaffolds for learning in new venture and startup teams.

Ries (2011) proposes a "Lean Startup Method" in order to manage startups scientifically, and to accelerate their progress towards becoming a firm. He opposes the popular misconception that startup companies should create new customer benefits, products, or even revenues. Instead "they exist to learn how to build sustainable business. This learning can be validated scientifically, by running experiments that allow us to test each element of our vision" (Ries 2012). Critics of the "lean startup" question the new culture of entrepreneurship in online and mobile business that proposes to ship unfinished hacks of arbitrary products out to customers in hope for fast feedback and monetary exit-

strategies in mind: "Too many pivots, too little passion" (McGinn 2012). Still, what remains crucial in our view, and independent of speed and passion, is the central notion of learning in the lean startup approach. If venturing is understood as a learning experience, pacing progress with suitable milestones, and sustaining passion become a constitutive moment in self-directed team learning. The experiments that Ries and his followers describe usually focus on incomplete product versions released in order to gather customer feedback. But even though customer values and offering are at the core of value creation they do not suffice in the attempt to create a sustainable business.

In order to do so we propose to apply the notion of validated learning to all components and details of a business model. Besides, scientifically not only "experiments" may be applied, but all forms of as research-based learning (Huber et al. 2009) including for instance qualitative interviews or observations. Such learning may take place on different maturity levels providing the basis to proceed from one to the other. Research activities and processes may be performed in an ad hoc fashion, through repeatable steps, organized, managed with suitable metrics or on a self-optimizing basis. Maturity models (CMMI Product Team 2010) are used to assess formality and optimization capabilities in business processes (such as human resource management or usability engineering in the development of new products). The approach has been transferred the concept to innovation (Müller-Prothmann & Stein 2011) and open innovation (Enkel et al. 2011) management with a focus on integration of external knowledge. Here it provides a reference for the analysis of corporate venturing and startups. Curtis et al. (2002) describe a people capability maturity model focusing on the development and management of human assets of an enterprise. Their emphasis is on running organizations rather than startups or new venture. The same is true for literature on organizational learning (e.g. Argyris & Schön 1996) and dynamic capabilities (Teece 2009). Both stress adaptation to changes in the environment of an established firm instead of attempts to create new ventures. But startups and new ventures working on the creation of new business are initially quite different from established business optimizing their processes. A different set of maturity levels organized by learning goals is required.

3 A framework for lean ventures and a curriculum of learning goals

The lean venturing framework puts the basic components of the "Business Modeling Starter Kit" (Breuer et al. 2012) into an evolutionary perspective. We briefly describe the starter kit before, and then apply the idea of innovation maturity to differentiate between more or less advanced initiatives, and the learning goals they need to tackle.

In order to empower entrepreneurial teams to explore, discuss, and challenge all critical aspects of business, we developed a self-explanatory, game-like "Business Modeling Starter Kit" (Breuer et al. 2012). It focuses on mandatory components and their relation and was iteratively refined through a series of dozens of workshops. Osterwalder and Pigneur (2010) assembled nine reoccurring components, and Aziz et. al (2008) identified a total 54 different components discussed in the literature. Taking this literature and recent developments into account and stressing the customer perspective we created a reduced set of eight basic components (Breuer & Ketabdar 2012): the value proposition and customer segments, customer touchpoints, distribution channels and revenue streams, finally the capabilities, partners and costs. The lean venturing approach iteratively refines and validates assumptions with respect to these components.
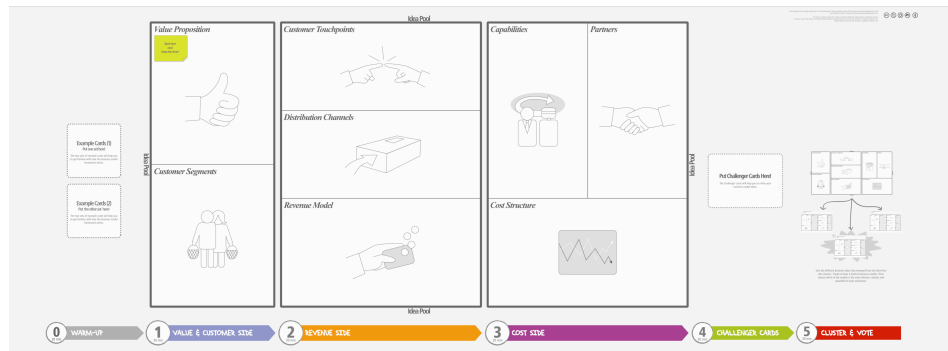
Figure 1 Cardbord playground of the Business Modeling Starter Kit.

Maturity of assumptions

Within one new venture project looking for the most promising home router applications based on new technology, the "Business Modeling Starter Kit" was applied by four different teams working on four different use cases. During the moderation of these workshops, strengths and weaknesses of the different use cases under examination became quite evident: Only one group was able to well-define the business model components and their relation, but required further insight on how to model the revenues. Since none of the other cases showed viable potential for commercial exploitation, only this case was further pursued with a creative exploration of profitable revenue streams and sped up prototyping activities.

In order to analyse the differences among the workshop results and in order to enable more teams to quickly check the maturity of their business models by themselves, an assessment of the need for refinement was done for each field of the playground. We projected five levels of refining the related assumptions allowing the team to self-asses their status as:

- Vague or yet to be defined

- Focused and well defined

- Qualified through feedback

- Quantified

- Proven (in a test-market environment)

This simple scale was applied and adapted to every dimension of the basic model (e.g. with respect to partnering: vague, identified, contacted, contracted and integrated). Subsequently it was applied also to critical aspects within each component such as the cost per customer acquisition with the costs or the total serviceable market in the customer segment. For some purposes this level of differentiation is sufficient e.g. for an initial priorization of use cases and open issues to elaborate upon in depth.

Global Learning Goals

In collaborative learning, participants support and rely on one another in order to reach a shared goal. In research-based learning (Huber 2009), typical phases include an introduction into the topic, identification of a research question, elaboration of information, acquisition of methodological know-how, development of a research design, execution of research, elaboration and presentation of results and reflection.

Five degrees in the refinement of assumptions require different sets of activities to proceed. From a team learning point of view they also imply different learning goals for each level. More detailed learning goals can be set for every component of the business model. Success critical aspects, which are unique to the individual business case need to be defined by the venturing team. Learning goals are usually comprised of an ability under conditions and a measure. Each of the five refinement levels matches unique team learning goals:

1. Ability to describe a unique vision and apply it to potential challenges (comprised of unique values and ideas on each component).

2. Awareness of the range of options within and between the basic business model components is coupled with a shared definition of the business model to pursue.

3. Ability to create specifications and prototypes in short iterations and to evaluate assumptions empirically with suitable methods.

4. Ability to transfer lessons learned into long term decisions and scalable solutions.

5. Ability to manage a portfolio of strategic options building on experience and traction within the ecosystem in order to optimize operations and cultivate mindfulness for innovation.

The framework involves divergent steps such as exploring potentials for innovation and varying assumptions, and diversifying offerings in order to conquer untapped potentials and create unique and innovative solutions. It also involves convergent learning activities, such as establishing a shared vision, rendering ideas and assumptions in the form of specifications and prototypes and validating them, as well as prioritizing portfolios. Participants proceed from single-loop to double loop learning (Argyris & Schön 1996).

4 Five E framework: Iterative Business Model Specification

Looking onward to corporate venturing as such and the group learning activities it requires, the simple scale was extended into a framework based on the literature and lessons learned from several business modeling and corporate venture projects. Each of the five levels will be described first in terms of associated learning goals and tasks, second with respect to scaffolding tools and methods, and third, illustrated with examples from business modeling and new venture projects.
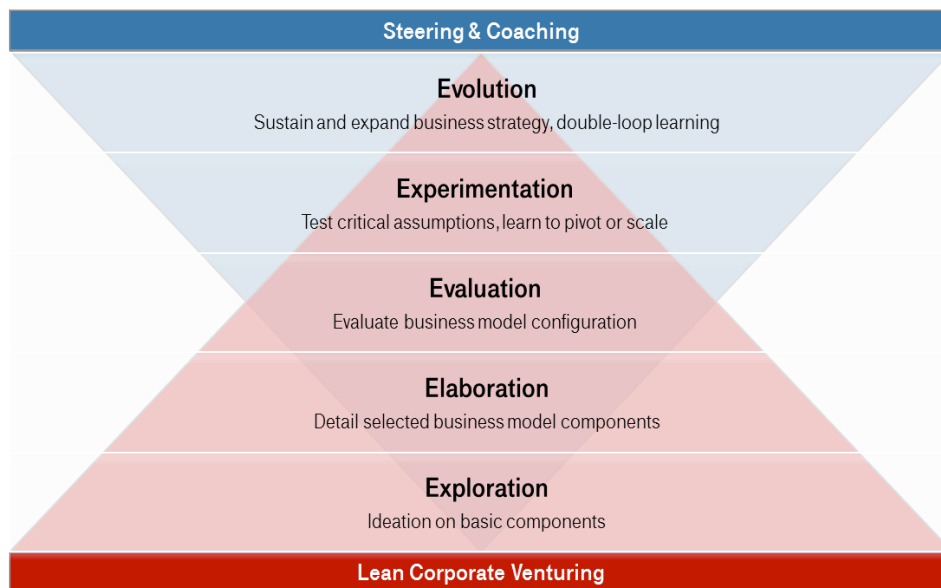
Figure 2 Five E framework of activities in lean venturing through iterative business model specification.

Exploration: A basic model and compelling vision based on customer values

Learning goals and tasks: The initial learning goal of corporate venturing project teams is to establish a holistic and shared vision of their endeavor. New ventures and entrepreneurial teams often start with a compelling, though rarely well-defined vision. Often this vision deals with new technologies, sometimes with marketing or new business models. A thorough understanding of all relevant aspects is usually missing. This is attributable to the domain specific expertise and focus of participants. Even if knowledge on all business aspects were accessible or present within the entrepreneurial team, not everyone shares the same assumptions.

Tools & Methods: The "Business Modeling Starter Kit" (Breuer et al. 2012) turns the creative exploration of new business models into an open-ended and engaging learning experience for entrepreneurial teams. In the basic version a self-directed four-hour workshop suffices to understand and get in touch with the basic dimensions of a business model, and to collect and challenge ideas. The exercise ensures that all eight dimensions have been addressed, that a common understanding has been established and that open issues and search fields for in-depth elaboration have been identified.

Project examples: In several business modeling workshops we noticed that even team members who worked collaboratively for months on a topic, such as new services for the elderly, had quite different value propositions (e.g. security versus comfort), customer segments (e.g. elderly in need of care versus their adult children) or key partners in mind. Even in advanced projects a simple review of project documents revealed contradictory assumptions e.g. on the customer values to be addressed, the customer segments to serve first or the core capabilities required. Explicit or unspoken, such contradictions have to be clarified if the team intends to work towards shared goals. Common ground needs to be established.

This is particularly true for the value proposition as the strategic core of every business. If the main purpose of business is the creation of value for people and society (Breuer & Ketabdar 2012), a strong and unique customer value to be served is a strong anchor for strategic alignment based on such common ground. It allows teams to maintain a consistent focus beyond themselves even in turbulent and conflicting times. Customer values and their proposition in terms of benefits also lay the ground for modeling new business. In one project on new ventures based on a new operating system for mobile devices a dense workshop day focusing on the unique propositions enabled by the new OS platform prepared the ground for a radically new application scenario and business model for software-generated phones.

Elaboration: Business model innovation and specification

Learning goals and tasks: Once a shared understanding of the basic business model has been established, moderated group exercises enable participants to explore critical aspects and their dynamic relation in depth. Chesbrough & Rosenbloom (2002) remark that in developing business models for spin-offs it is important to consider a broad set of alternatives rather than sticking to the models already familiar to the parent company. An informed and systematic variation and extension of fundamental business model components considers the range of even untapped options including counter-intuitive new ideas.

Creative exploration of every potentially viable business model applies divergent thinking, and increases variance. While the business modeling canvas (Osterwalder & Pigneur 2010) or our Business Modeling Starter Kit, provide a starting point for such variation, neither suffices to explore the full range of potential options. In order to do so, principles of detour need to be applied: They do not go directly to the target, but work around the conventional path to generate unconventional ideas. Futures research for instance applies wild cards irritating established expectations; contextual approaches involve users or experts of divergent domains. Futures workshops on the other hand dig deep into wishful thinking, dreams and desires of workshop participants before guiding them to bring elements of such utopian visions down to earth and try to specify interventions.

Tools & Methods: The full toolbox of creativity and empathy tools may be applied. In some projects we worked with a basic driver analysis to understand customer values, created attribute-value maps in order to link values to product attributes and to clarify the unique value proposition, or created stakeholder maps in order to identify so far neglected business partners and stakeholders. In others, blue ocean analysis (Kim & Mauborgne 2005) provided new ideas on strategic market positioning. Illustration and storytelling consolidate the model and communicate the model to stakeholders.

Project example (Revenue Stream Design): In a project on location data analytics the configuration of potential revenue streams was elaborated upon with internal and external stakeholders. The goal of a workshop was to identify new possibilities to commercialize aggregated data on segmented customer streams in public locations in order to inform positioning of advertising and store outlets. Using maps and prototypical corporate interest new business clients were identified, who could benefit from the technology, e.g. public authorities, real estate agencies, and insurances. By analyzing their demands it was identified that additional services could be built, e.g. by providing a white label API that includes specific location information which clients could implement into their websites.

As a next step, the team explored different revenue methods and pricing schemes, including subscription and usage of the web-based service and a prepaid package for the API. The result was an exhaustive understanding of potential revenue streams, and a prioritization of those to aim for first.

Evaluation - Specification, prototyping, and qualification

Learning goals and tasks: In the last ten years the identification of new business models developed from a more or less accidental episode of luck to a creative practice that may be professionally managed and moderated with a variety of tools and techniques. However, a modular step-by-step approach of how to proceed from an idea to a business model and onwards to a serious business case once the basic idea of the endeavor has been settled is still missing. For the time being each team gathers not necessarily valid data, but instead the data at hand, to construct its individual case and then struggles to convince investors with its own piece of handcrafted artwork.

In order to validate and differentiate the assumptions gathered in exploration and elaboration we propose to transform the feedback loop of "build-measure-learn" (Ries 2011) into one of "*render-evaluate-learn*" (*REAL*): Render ideas in tangible ways through prototypes just good enough to evaluate them and maximize learning from the results. As such it also serves the transition from business model to business case and provides a cornerstone for the comparative evaluation of new venture performance.

The initial model and critical components need to be reviewed from multiple points of view, involving lead users and/or domain experts from related fields, or potential customers, partners and/or investors. Formative evaluation methods apply an increased fidelity of specifications and granularity for stress tests, ranging from simple challenger questions and stand up role playing games (to enact a business model and use the actors and audience experiences as feedback channels) to comprehensive user clinics (Breuer, Steinhoff & Wogatzky 2009).

Tools & methods: Through modular quantification of key elements, entrepreneurial teams proceed from a business model to a business case. Specification and quantification allow new venture projects to define their business case, and allow for a comparative evaluation of different strategic options. Starting from the values created for customers, the most critical dimensions of specification, quantification and measurement are: Problem or opportunity, solution (customer value, value proposition), marketing (customer segments, products and services, market perspective, industry perspective, competition, strategic positioning), revenue model (customer touchpoints and service model, distribution channels, pricing strategy). For each alternative specification and quantification methods are available, and even more so for the dimensions primarily concerned with the provision of solutions: The capabilities (including an operational model), key partners, cost Structure, business scenario(s), business evolution, management, and financial statements. Still, in evaluation the focus is not on generating impressive numbers but maximizing learning through qualitative means.
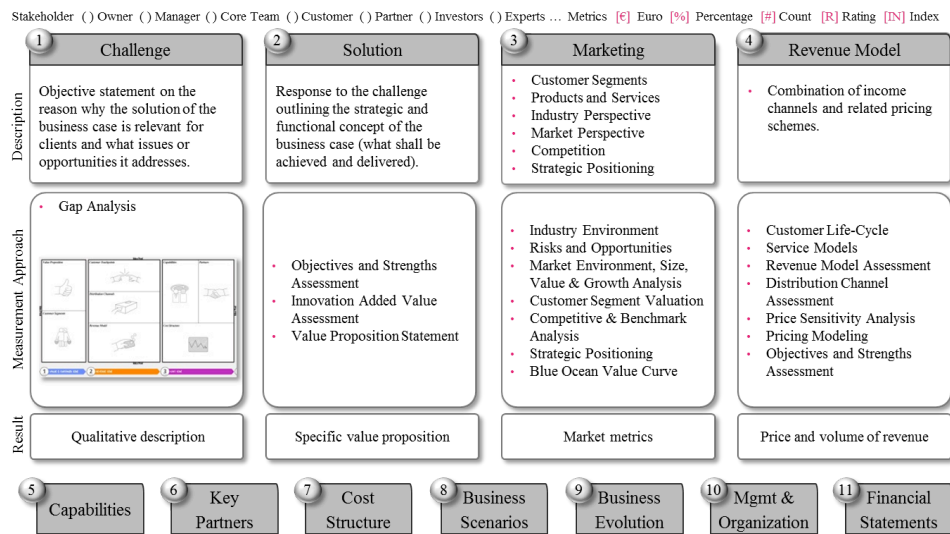
Figure 3 Exemplary specification methods and metrics for quantification methods

Project example (Customer Development Interviews): In one project a series of expert interviews was sufficient to falsify a fundamental assumption that business clients might be able and willing to share revenues – going back to elaboration the team came up with alternative revenue models. One of the new venture projects we have worked with offers a network path recommendation system. By providing information on unused network capacity, the service can provide Cross-Domain Network providers (CDNs) with improved transparency on the current network conditions and enable them to choose the fastest path in a network to provide superior service quality to their customers. Since the service addresses their clients' core value proposition, the business model needed to build on a very close collaboration with them, to create a win-win solution for all included parties. However, relatively little was internally known about the clients' business model and processes. For instance it was crucial to understand the clients purchasing process in order to offer adequate conditions to the right stakeholders complying with the procurement process. Through customer development interviews such critical information may be obtained. They feed back on initial concepts and assumptions and information on adoption barriers can be gathered at an early stage of product development (Blank 2005), and may even help to spot new business opportunities.

Experimentation - Iterative validation and test deployments

Learning to grow a new venture, or business model innovation, is not a matter of ideation but of iterative experimentation (Thomke 2002) with increasing degrees of fidelity, costs and time in order to generate usefully approximate information and evaluate concepts. Focused experiments with suitable metrics not only help to test the product acceptance by customers (Ries 2011), but may also evaluate e.g. sales performance or costs of customer touchpoints. In order to set up experiments with suitable measures, specification of modules and just-enough prototyping is required.

At this stage the team has qualified assumptions about its future business. It releases prototypes and issues probes that are just enough for focused evaluations. Like "sprints" known from agile development these experiments and evaluations need to be scheduled and prioritized. In order to ensure sufficient objectivity, reliability and validity of the results each experiment and analysis needs a suitable research design. Proven methods from empirical social sciences, especially customer and market research, but also controlled experiments (e.g. with test and control group) with falsifiable hypothesis are applied. A typical example is the cohort analysis that Maurya (2012) proposes e.g. to compare the revenue potential of freemium versus free-trial plan to increase conversion.
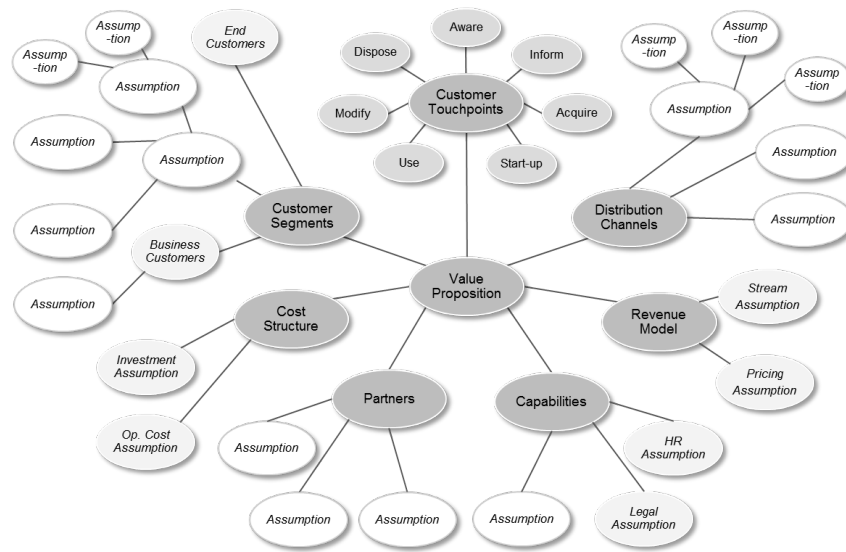
Figure 4 Mapping out critical assumptions for evaluation and experimentation

Tools & methods: Exemplary metrics for measuring progress in sales, distribution, or touchpoints are the time to complete a sale, or the cost per touchpoint in customer care. But typical measures include time to task, number of people per effort, revenue per transaction and number of transaction per time may not suit to low-fi prototypes. What is most decisive: Knowing why interventions lead to specific results or at least how to configure the business model, its components or assumptions within according to the results.

Still, to start a new venture or firm is an idiosyncratic endeavor for which no standard measure exists. Once such evaluations are running their progress needs to be tracked and lessons learned need to be derived and discussed within the team in order to inform decisions. Corporate venture portfolio management may use documented learning curves in order to ensure the initiative progresses according to its own measure (which we name learning proposition in analogy to the value proposition to customers). Just as the creation and delivery of new values requires new practices it requires learning propositions and growth paths to develop and professionalize these practices. Small experiments and milestones of bundled activities and proven ideas sketch the road ahead into the zone of proximal development (Vygotsky 1978).

Project Example (Value-based Pricing): The revenue model includes pricing schemes (e.g. feature, runtime or value dependent pricing, demand-based, auction or real-time pricing) and revenue methods (e.g. licensing or subscription), and pricing models such as fixed and variable pricing on an individual or subscription base. Conforming to customer centered approaches value-based pricing focuses on the value perceived by potential customers, as opposed to market or competitor-oriented pricing. Aligning value and price based on the customer benefit the price sensitivity meter (van Westendorp, 1976) is one framework for value-based pricing, which helps to ascertain initial information on price preferences and helps identify the optimal price range that allows addressing a sufficiently large customer base. Within an online user clinic (Breuer, Steinhoff & Wogatzky 2009) about 300 participants provided feedback to new concepts for social network services. A conjoint analysis (best-worse measurement) helped to prioritize individual features and services, and price preferences were analyzed using van Westendorp's method, yielding a willingness to pay ranging between 1.5 and 4 Euro with an ideal of 1.75 Euro for the majority of respondents. This measure is used to inform the pricing strategy, also indicating which costs will be acceptable. Introducing variations like different product bundles into the analysis help the team to learn which product features provide which value and indicate how to schedule their release.

Evolution - Optimization and (portfolio) management of strategic options

Establishing a shared normative vision of future team goals in small and large groups, may be an extensive and still valuable *learning* activity in order to streamline the teamwork and build on strengths in order to create desired states in the future (Breuer, Leihener & Schulz 2012). While focus on the first clients to serve and core propositions to offer is crucial to get a business up and running, anticipating the second steps with the first becomes critical if unexpected obstacles and breakdowns in assumptions occur. In the long run double-loop learning gains importance as it reflects upon and modifies underlying beliefs and goals of an activity instead of just varying methods and techniques to achieve results (Argyris & Schön 1996).

Tools and methods from corporate foresight, and scenario sensitize the team for emerging opportunities and threats in the business environment. As they typically involve substantial time and effort lean or discount adaptations are required to serve the needs of startups and corporate ventures. One option is a reutilization of existing scenarios; another is to reflect reoccurring challenges for new ventures in a structured way. Some of these challenges like a new powerful competitor or investor are part of the "Business Modeling Starter Kit" (Breuer et al. 2012).

The *project example* on a network path recommendation solution targeting few large business customers was challenged to not only cater to their customers' current needs, but also to foresee future developments in their customers' business model e.g. with respect to internet traffic trades. Future scenarios provide valuable insights how not only the own environment but also the competitive landscape of these customers may develop, and which new customer problems might evolve. Serving those sustains the business through customer satisfaction, anticipating defense against new competitors and proactive exploration of adjacent space.

Corporate Venture Portfolio Management

When entrepreneurial teams define their own growth paths they may be accounted by their own measures. Portfolio managers or even self-selected team members ensure that each of the critical dimensions in the business model is being addressed and that initial assumptions and learning goals keep moving to the next maturity level. If self-defined milestones are reached, team members gain confidence for themselves and credibility for others. Due to their idiosyncratic nature corporate venture teams should be capable to manage and define their own learning goals, and iteratively redefining their own business. The job of innovation management is to create an environment that enables learning and provides "teachers" not only as experts like senior serial entrepreneurs and but as methodological coaches and providers of scaffolds, techniques and learning materials as needed. Portfolio management must ensure that learning goals are ambitious enough, that the "sprint plan" of activities enables real learning experiences, and that the teams increasingly perform as they promise with increased traction in the (test) market.

5   Conclusions

While Ries (2011) has identified "validated learning" as critical for growing new business, the importance of learning has not yet been fully conveyed. Viewing venturing as learning future research should closely examine the potential contributions of learning psychology (e.g. Edelmann 2000) to a deeper understanding of entrepreneurship and venturing as collaborative, constructivist and research-based learning. In order to challenge assumptions and gain traction, reality should be confronted early and often (37 Signals, 2012). Valuable measures may include external evaluations on behalf of investment boards or corporate venturing portfolio management. But the fundamental learning relies on and resides in each of the team participants. Protagonists need to couple their joint mindfulness for micro-innovations with the strategic focus on the values and propositions making business meaningful. Entrepreneurs, corporate mentors and external coaches work hand in hand in the endeavour to turn overwhelming challenges into learning experiences, and novel combinations of local platforms into sustainable ground of a self-promised land to mature and prosper on.

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