LIVING LAB INNOVATION METHODOLOGIES

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Abstract

An innovation program in a Living Lab in Colombia designed, developed and implemented new management practical and structured approach.

The innovation program consisted of four blocks and it was chosen to create not only a new products and services portfolio, but new business model architecture and modular design and redesign in just 10 weeks.

Data collection including business diagnosis, business context analysis, user observation, external interviews occurred in the first six weeks, while generation and validation of ideas over the last four weeks.

The conditions of this program (based on learning, creating and experimentation processes within real world settings) helped companies to know in what stage of innovation they are or their business innovation potential.

Further, it gives us clues about what business models innovation do in management theory questioning that innovative business models are in fact what matters and the sole model for innovation.

Keywords: Innovation Programs, Innovation processes, Product innovation, Service innovation, Dynamic capabilities of SMEs, Business Model Design, Strategic Processes.

Review

Living Labs

A structured approach to open innovation is living labs (Schuurman, 2015). Open Innovation in Living Lab programs provided collaboration at the front end innovation, experimentation on real-world settings and ecosystem partnerships beyond ‘human-centered ’processes to create value for all actors across the product system.

Living labs are interaction spaces, in which stakeholders form public–private–people partnerships to collaborate for improving, developing, creating, prototyping, validating, and testing of current or new technologies, services, products, and systems in real-life contexts (Leminen, Westerlund, & Nystrm, 2012).

Living Labs are driven by two main ideas: a) involving users as co-creators on equal grounds with the rest of participants and b) experimentation in real world settings. Living Labs thus provide structure and governance to user participation in the innovation process. (Almirall & Wareham, 2008).

In the living labs the first phase, called the grounding phase, identifies stakeholders and selects the group of users. The second phase, interactive and iterative co-design, covers the definition of concepts and the design of prototypes in a co-creative manner. The final phase coincides with the actual experimentation in real-life environments, paying special attention in experimenting and developing business models that could make the project sustainable (Almirall & Wareham, 2009).

Open innovation through living labs, in which organizations as resource actors take part and collaborate in the generation and refinement of competencies to acquire territorial intelligence, product, services ideas with innovative potential and where social and relational capital acquires greater importance. Living labs have the potential to enable businesses, authorities, researchers, and customers to collaborate for the creation, validation, and testing of new services, business ideas, markets, as well as technologies in real-life environments (Bergvall-Kåreborn & Stahlbrost, 2009).

Business Model Innovation

BM strategic company-centric

According to De Anca and Aragon matrix (2014) four Business Models might involve the coexistence between old and new or the existence of several businesses models. Business Model Innovation comes from diversification, value propositions, new products that might require new capabilities within a new organizational design.

The matrix defines four categories: Business Model Transformation (BMT) sustains development of new dynamic capabilities with an organizational structure including flexible, autonomous teams and interactive processes with users; Business Model Efficiency (BME) is related to the cost efficiency and the business performance; Business Model Growth (BMG) focuses on exploring new markets, products, services or experiences;
Business Model Creation (BMC) aims the diversification (related or not) and an entirely new business model.

Christensen and Raynor (2003) outline three types of business model innovation, corresponding to a one-way journey: market-driven (products, markets), sustaining (diversification) and efficiency (cost) innovations. Each stage of the journey supports a specific type of innovation (incremental, radical, disruptive) cost reduction (when consumers are unwilling to pay for improvements or upgrades) and specific performance metrics.

Market-creating innovations are focused on developing a value proposition *i.e.*, product or service that would fulfill unmet customer needs ("job to be done"). It is a phase of immersion with data collection and insights sustained on researchers´ knowledge, emotional/cultural skills and user collaboration. Sustaining innovations concern with company offerings, replacing old products with new and better ones sold at higher prices. Efficiency innovations goal is cost reduction by optimizing internal processes or redesigning products.

According to Christensen, Bartman and van Bever (2016), successful innovations are those that build on and improve the existing model (along the journey), through predictable stages over

time, by fulfilling the existing job to be done or improving its financial performance. Essentially a linear road map of business model evolution that any endeavor to modify its course is expected to fail.

BM entrepreneurial approach

Foss and Saebi, (2016a) noticed that studies of business model innovation are predominantly in the context of innovative start-ups since it is tightly linked to the idea of entrepreneurial vision, imagination, and judgment. Chesbrough (2010) points out what Sarasvathy calls effectuation processes where firms or entrepreneurs favor action over analysis of their environment.

For start-ups, any act of entrepreneurship means the choice of a business model, while in established businesses the exercise of entrepreneurial judgment results in changes in components or architecture of the business model (Foss & Saebi, 2016)

Business models help to further advance the relevant products and processes by capturing some of the public good knowledge, attracting capital, scaling the innovations. (Chesbrough & Bogers, 2014). Organizations ideally would exploit their established business model, but at the same time explore with an entrepreneurial orientation the company's future (Osterwalder, 2017).

Both company-centric and entrepreneurial business model approaches somehow highlight, in different degrees, a unidirectional value flow from businesses to customers in value creation, delivery, and capture. These Business Models frameworks tend to be provider-centric with linear value chain, set in with different degrees and stages of user interaction, within a business dominant logic.

BM and service-dominant (S-D) logic

The service-dominant (S-D) logic is based on customer dominance logic (CDL) of in-depth customer insight, ideating and designing new ways to support customers' activities, experiences, practices and embed the service in customers' existing and future contexts (Ojasalo, Koskelo & Nousiainen, 2015). In this sense, customers are not only determiners of value when they experience and use the offering, but co-creators of value as well (Vargo & Lusch, 2008) as long as they are involved in immersion learning and design thinking processes.

It is a breakthrough from traditional views of business dominant position as value producer and deliver and business models as sets of elements (i.e., decision variables) developed and altered to maximize firm goals.

(S-D) logic highlights the actors´ role, the performative interactions of markets and considers relationships and collaboration are important factors. Along with institutional arrangements, value is co-created through service ecosystems beyond business models resource integration (e.g., key resources, processes, knowledge of innovation partners) and exchange (e.g., customer relationships, customer segments, cost structures, and revenue streams), (Vargo & Lusch, 2016).

Wieland et al., (2017) argue that business models, markets, and technologies all share an institutional foundation and question the managerial firm-centric of Chesbrough and Rosenbloom (2002) that technologies possess a latent value that can be unlocked through the use of business models. According to Wieland et al., (2017) value perceptions of technologies are shaped through ongoing institutional processes that enable and constrain the emergence, stabilization, and destruction of predominant meanings and uses, (i.e., Google glasses).

New markets do not form (i.e., market innovation does not occur) when actors (e.g., businesses) or groups of actors (e.g., innovation networks) introduce new technologies or new business models, but instead, when new practices (i.e., solutions) become institutionalized (Vargo et al., 2015) or shared meaning form. Markets are continually performed through the action and interaction (i.e., practices) of systemic actors mediated by institutions (Vargo et al., 2016) and determine technologies´s advantages, acceptance, and adoption within a context.

BM as a partnering system

Amit and Zott (2012) further point that managers should consider business model innovation to complement, if not substitute for, innovation in products or processes, and how to involve partners in new value-creating activity systems. In this way, businesses are encouraged to systemic and holistic thinking and business models innovation as a system and/or networks.

Business model innovation evolves from how the company makes money, the understanding and knowledge of latent trends and cross-industry learning processes to a partnership with research labs, universities, technology corporate licensing, collaboration with lead users and other businesses to create value.

Researching customers might be adequate for incremental innovation, but not for business model innovations. Innovative business models are complex to create because of the needs of the users might not be explicit, uncertainty might exist about which technologies to use and which partners to team up with (Vanhaverbeke, 2012).

Business Models validation not only is external as in product innovation in the sense that value is according to the users perception, but is systemic as well. Technological innovation and even Business Models design is often assumed to lead inexorably to success, but important is the ecosystem where the innovations occur.

BMI success isn't mainly superior financial performance and competitive advantage but how creation, value proposition, and capture of value integrate within a system. Value is created by networks of business/partners (from value chains to value networks) consumed by clients through relationships and interactions among systemic actors.

Further, these value networks cross industry boundaries and hyper-extend the limits of the customer journey from one industry to another.

BM and organizational culture

BMI is closely linked to the firm's strategic capabilities and performance (Pucci, Nosi and Zanni, 2017). Mapping business models cannot by itself promote experimentation, for that managers need organizational processes, leadership to challenge the prevailing business model or the existing assets that support that prevailing model.

Doz and Kosonen (2010) propose that companies be made more agile, which can be achieved by developing three capabilities: team leadership unity, meta-skills in perceptions of the environment and resource flexibility to support new models. Achtenhagen, Melin & Naldi (2013) argue for the need for "critical capabilities" to support value-creation processes—including an orientation toward experimentation, a balanced way of using resources, clear leadership, a strong organizational culture, and employee commitment.

Chesbrough (2010) have identified barriers to business model innovation, such as the configurations of assets and processes (which may be subject to inertia), as well as the cognitive inability of managers to understand the value potential of a new business model. Good past performance and longevity of the business model might undermine the capability of change and for that reason, emergent actors might take the lead in innovation.

Sund, Bogers, Villarroel, and Foss (2016) recommend that in order to business model experimentation building the business units with a mix of internal and external management and staff and different performance and metrics management. Christensen et al., (2016) advocate new business units decoupled from the company are essential, innovation should be associated with new business models not with changing old ones for
repeatable *processes*, not an ad hoc event, with continuous learning from previous iterations to refine or create new business models.

These authors propose distance from existing products and markets, collaboration with potential disruptors of the business, exploring the *job to be done* rather than the company's capabilities, resisting efficiency costs focus and finally use M&A to create a structure that coordinates the company's activity as a whole meanwhile allows each business to pursue its objectives either exploiting existing markets or identifying and investing in new markets.

Although Foss and Saebi (2016) point that all these approaches focused on the role of organizational design have been almost completely neglected in Business Model Innovation research probably because user involvement in BM design is more emphasized than internal development.

Methods

The innovation program designed and implemented a managerial and structured method consisting of six-blocks:

- Context: Coolhunting made available trends analysis (figure 1); Customer Journey Map detected critical incidents (figure 2); Netnography focused on content analyses and reputation.
- Immersion: Ethnography involved participant observation; In-Depth Interviews explored latent needs, both with Netnography permitted Empathy Map elaboration (figure 3); Projective techniques such as storytelling (figure 4), role play, brand personification were added.
- Group Dynamic Sessions: Gamification and Thinking Hats (figure 5), Design Thinking (figure 6).
- Business Model Design: Business Model Canvas (figure 7/8/12), Lean Canvas (figure 13), Service Logic Business Model Canvas (figure 14), Value Partnerships (figures 15,16). STOF, VISOR is valuable for technological, digital business models platforms.
- Innovation Models Framework: included Doblin (figure 9), Xplan, Navigator (figure 10) models.
- Final of the Prototype Canvas (Figure 17).

Innovation Program

Six businesses were selected and program activities included a public announcement, fourteen businesses were candidates, seven were interviewed. There was a SIM (Solutions, Innovation, Methodology) program opening and final event with weekly co-creation meetings with businesses owners and simultaneously a weekly mentoring committee meeting. There was great

variability in methodologies used by the mentors, areas of innovation processes intervened in co-creation processes, a mental framework of understanding and relevance of innovation adoption to do business by the owners.

Cossio Porto Films

High-quality audiovisuals and narrative pre-production, production and post-production for series, short films, scripts, and books. The business goal was to-do corporate and institutional communication for median and large corporations starting with political allies such as mayor, regional government, investment promotion agency. Storytelling (not validated), virtual and augmented reality, 360º degrees videos were discarded in favor of projects with allies, innovation processes, product systems of complementary products and services such as social media management, web pages design and graphic design.

0Kms

Value proposition proposal it was a peace of mind, money savings for consumers with a technological platform supporting vehicle integral services. Notifications, procedures, subpoenas needed CRM for a fully automated relationship with its clients. Focus on automatization with very little human interaction (e.g. use of chatbots), to accelerate speed registration, document fillings and uploads, minimize errors. It was a step away from an intended advisory personalized relationship. Other business proposals, a fully registered for vehicles it was postponed due to operations and allies (mechanical workshops, car dealers, service stations) complexity and insurance advisory had strong competition from search portals.

Hommie

The business offered cleaning services at client convenience. User experience it was focused not only on web page, app channels, but service reservation (map with location, evaluation and selection of personnel), payment confirmation (credit cards, PayPal, banks, cash payments), timing of initial and end of service and satisfaction survey (employees attitude, punctuality, presentation).

Service delivery wanted to go the extra smile and exceed expectations (caring about details beyond cleaning standards); service depth (either standard or premium add.on based on differentiation and personalization of options available (e.g. curtains, carpets, cleaning products type, smells, flowers); service breath of eco (allergens, pollen, anti germs, antibacterial) and urgent services. Likewise the premium options that drive the final price up, dynamic prices management according to days of the week, hours of the day and loyalty programs within a fan club. The goal was to increase emotional relationships with clients with an influencer, rewarding clients with special offers and generating user content. The novelty comes with affiliation kind of pay-per-sale or pay-per-display compensation, offerings that are not the core of the businesses such as manicures, pedicures, massages, personal shopper, closet organization, moving companies. Hommie would not cross-selling but would be an integrator allowing partnerships from providers related to wellness offerings.

Branding Co

Positioned on the red ocean of marketing and advertising agencies, it had the same portfolio of products and services than the competition and getting inspiration from the same industry leaders. Innovation proposals were related to the business profit model, product system and partnerships. Fremium model tried to break through the industry normalcy with free initial client diagnosis, free tutorials, marketing campaign guides for clients efficacy metrics, tailor-made project design and tangible packages. Client subscription on semester or annual basis flat rate with standard (social media management, web pages design, graphic design) and premium baskets. Product system included product placement, crisis management, online reputation, corporate communication, mobile geolocalization, WhatsApp business, virtual and augmented reality with partnerships besides the suppliers, customers, complementors sources of value creation.

Likewise, the agency incorporated process innovation with software such as Hubspot, Trello, Slack for collaborative work and client interaction.

Next Audit

Fast and standard low cost IT consulting uses the Aikido strategy to offer something opposed to the image and mindset of competition. Businesses usual activities include risk management services, internal audit services, internal control services seek to eliminate pains such as fraud, loss of information, data theft that can cause financial loss, low reputation, litigation, and regulatory sanctions. Expectations were focused on business savings, eliminating risks, costs and negative impact with process optimization (digital transformation and automation) with highly-skilled, industry insiders, certified and experienced human resources. Profit model flat tariff with free six months client support, subcontracting and performance-based pricing when detects clients system failures and vulnerabilities tried to compete for the high prices of the big four consulting firms.

Summoled

Focuses on the creation and design of elegant and personalized ambiances with lightning for residential, commercial and solar market segments. The innovation processes were centered on design, more than product selection, supply and installation thereupon on customer experience management. It was recommended including client budget proposal on automatized chat, design with 3D visualization and pre-approval, post sales with questionnaires templates. Allies such as architects and influencers were crucial as well. Events and lightning rental business lines were discarded due to high competition and customer loyalty. New technologies such as 3D walls, sound, and light home automation never were materialized. Shop in Shop proposal, small shop within another shop such as Olimpica supermarkets.

Also, in the case of **Summoled** was developed business degree and innovation potential evaluation:

A. Project portfolio

Customer Experience:

- Automation system estimates through website channel (residential - commercial sector). Reduction to 48 hours for customer proposal delivery from the actual five current days.

- Post-sale services. System of evaluation of experience and services.

Marketing:

- Inbound Marketing, blog / influencer / social media.
- Website redesign including chat for customer support.
- Business fairs participation in Lighting Design. Points of Sale at shopping centers.
- New markets, geographical expanding to Cartagena de las Indias town from Barranquilla, broaden social stratum level 4/5 from 6 at present time.

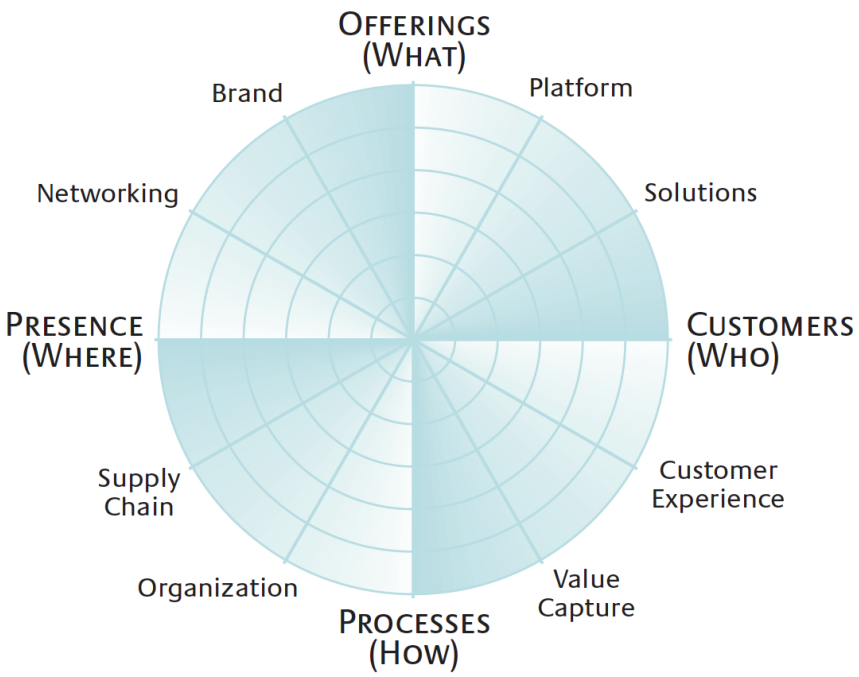
Business Model Redefinition:

- What, creation of sustainable and elegant environments. Integral lighting solutions for homes, commercial spaces, and events.
- How, suppliers of lighting materials, hardware stores, subcontracting installers, designers, event organizers.
- Why, sales, design, lighting materials, installation whole process.
- Who, residential, stratum households 6; commercial, entertainment, and leisure bars, nightclubs; solar energy market.

B. Radar of Innovation (current)

Degree of innovation of the company (Summoled self-evaluation from 1 to 7). Based on Sawhney, Wolcott, & Arroniz, (2007), the twelve different ways for companies to innovate:

Figure: Sawhney et. al (2007).



5 - Offer. Creating new products or services that are valued by customers:

- Solar energy, Summoled new business.

4 - Platform. Defining groupings of common components or technologies that allow efficient development of lines and derivative products:

- There are not new technologies such as 3D walls and smart curtains in an environment lit with LED lights.

- No automation, smart spaces with remote control, from a mobile device controlling varied systems: air conditioners, televisions, sound, electric curtains, lighting, CCTV circuit, locks.

6 - Solutions. Creating integrated and customized combinations of products and services that solve end-to-end customer problems that include:

- Quality/specificity of the products.
- Flexibility for adjustments to changes during the project with the client.
- Compliance with deadlines.

6 - Client. Discovering uncovered (or even inarticulate) need:

- The high value of the design as added value and loyalty to the supply and installation project (proposal use of 3D technologies).
- Identification of new customer segments. Marketing: a partnership with influencers, use of landing pages and Google AdWords.

2 - Customer experience. Redesigning interactions with the client at all points and times of contact:

- Proposal for automation client needs diagnosis through the website with a machine learning questionnaire.
- Post-sale surveys valued very positively if there are incentives (e.g. free maintenance first six months).
- WhatsApp chat needed for customer support on the website and Instagram.

3 - Value capture. Discovering new revenue streams for the business or redefining the way it is remunerated:

- Design projects monetization.

3 - Process. Redesigning and regrouping activities to achieve greater efficiency, quality or speed:

- Automation customer needs diagnostic automation.

6 - Organization. Redefining the scope of the business activities as well as the functions, responsibilities, and incentives of its units and individuals.

6 - Supply chain. Redesigning the flow of goods, services and information from provisioning to delivery, for better coordination and collaboration.

2 - Presence. Creating new distribution channels or redefining the points at which customers buy or use products and services:

No e-commerce and no showroom.

5 - Network. Take advantage of the network of connections in which the offer of the company is integrated to provide more value to the customer:

Architects, interior designers, neighborhood associations, etc.

3 - Brand. Expanding the brand or leaning on it to enter other domains:

Based on the mouth to mouth and Instagram (not available Pinterest and Youtube social media channels), poor or no Google organic positioning keywords as lightning design and consultancy, lightning consulting, or design of sustainable and elegant spaces.

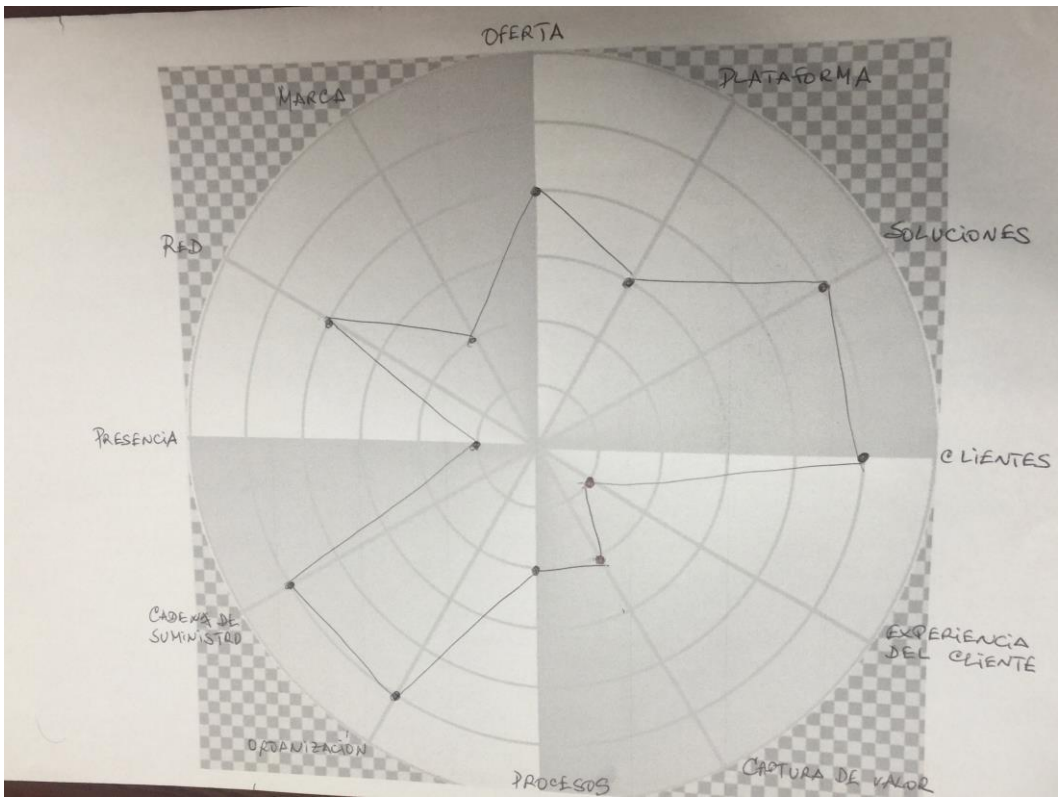


Figure: Summoled Innovation Radar

Source: Author

C. Scale and potential of Innovation (future).

Summoled self-evaluation from 1 to 7. Average 3,1 concerning innovation potential from the business.

2 - Well-defined strategic orientation for innovation

Strategy, business models and objectives aligned.

4 - Exploring new opportunities

Scanning of the environment, hunting trends, sentiment analysis, new technologies.

3 - Iterative innovation processes

Non-linear processes, build, measure, learn.

2 - Use of Tools for Innovation

Exploration, immersion, generation of ideas, validation, models of innovation.

4 - Innovation skills training

Development of innovative talent with in-house or external training.

3 - Knowledge management

Socialization, sharing, articulation, internalize.

4 - Change management

Rigidity and long decision processes. Transparency of flows of information. Decision-making models. Problem methods-solution. Different behaviors, change of habits and routines.

3 - Systems of incentives for innovation

How people are rewarded for their behavior.

Results

For SMEs, innovating is not so much management skills shortcomings (in economic, financial or human management), not even human resources limitations, it might be a matter of lack of structured processes.

Processes and methodologies oriented to knowledge management efficiency, (social, technological trends, identify opportunities, points of contact between organizational and users); stages of creative processes, change management of organizations and experimentation based.

The research highlighted a set of organizational design, team building, co-creation, and iterative processes to overcome the one-way value flow from consultants to businesses and businesses to customers.

For collaboration methods to develop is necessary to establish quality relationships, driven by extrinsic benefits or intrinsic motivation, skills, tools, capabilities within the reach of companies regardless of their size.

Several factors have increased the potential for seeking innovation in external sources, with faster and lower costs, such as globalization, technologies and the use of 3D printing, software development, social networks and Information and Communication Technologies (ICT).

Discussion and Future Lines of Research

Cognitive bias is a major concern for customer discovery in NPD/NSD, from the initial phases of desk search Coolhunting, Netnography, or participant observation, in-depth interview methodologies. The perception of input by the researcher depends on his/her knowledge processing skills, cultural limitations and emotional/behavioral understanding. This affects the understanding of the meaning of a social phenomenon and, subsequently, the process of ideation and validation.

The classic market research methodologies fulfill the role of pains definition, although they are not decisive because observation is limited by the heterogeneity of the service delivery, users´ experience, and bias and the relevance of face-to-face meetings are limited by interviewer skills.

There is a challenge of how collaborative efforts, innovative culture, teamwork and organizational structure, innovator skills, divergent thinking, nonlinear vision, multidisciplinary integrative research can avoid cognitive bias and proposing solutions based on subjective social reality.

Moreover, organizational structures, hierarchical decision making models, informal tacit routines, non-use of collaborative work software, parallel channels of communication and pressure for organization fitting culture might slow down collaborators innovation solutions. Teams tend to stick in silos of business mentoring and won't feel the urge to collaborate.

"Innovation processes, as opposed to production processes, are known for their transitory nature, changing system boundaries due to the teams and customers or suppliers from the outside, the uncertainty amount and uniqueness. Innovation processes´ learning contribute to effectiveness of future, similar or related processes, meanwhile production processes aim to master the same process". (Cobbenhagen, 2000).

Since the value in services is directly related to providing the experience of interaction and simultaneity between production and delivery, the relevance to create feedback mechanisms of user journey mapping and points of contact is a field that has research implications and needs to be further developed.

It is also interesting to note the extent to which small companies have or can exploit "advantages" that can derive greater benefits from open innovation than larger ones because of their reduced bureaucracy, greater willingness to take risks and ability to react faster to changing environments, as suggested by Parida, Westerberg and Frishammar (2012).

Each process is unique, in the programs mostly entrepreneurs selected had privileges, likewise support of family businesses, contacts that provided allies and sales. Maybe a project of these characteristics in which the program could browse, attract entrepreneurs directly in socially and economically depressed areas could offer collaborative activities of a higher rank.

Another area of great potential research interest is business governance and innovation in the collaborative economy. Just as social media enable peer-to-peer sharing of content, the technologies of the collaborative economy enable peer-to-peer sharing of services and goods. The consumers shift from passive to active collaboration, the use of technology to access underutilized resources facilitated firms "turning to services as a new way of creating and capturing value," (Visnjic, Van Looy, & Neely 2013).

Conclusions

Dynamic capabilities can be acquired through organizational design and collaborative innovation projects regardless of the size of the companies. Co-creation requires identifying facilitators within an innovative culture of organizations at the level of user-centered processes.

The methodologies applied in the innovation program were different from Cooper's (2014) Stage Gate linear practices in creating and developing new products and the passive cooperation of users in providing information.

With validation-based decisions, the most relevant aspect is risk reduction by accurately addressing the needs/demands of the users. The absorption capacity management that was used in the innovation program implies understanding the context of the problem (pain) and consumer gain reflected in the exercise of the value proposition.

The ultimate goal of direct value co-creation, through pivoting, is to build, test and learn. Small businesses could take advantage of the value of user contributions at a higher level and a good part of these methods could be attractive to users.

Iterative innovation processes and low-cost methodologies had a practical implication on businesses and were capable of driving the development of innovative services and new business models in small companies.

The tacit and explicit knowledge management, service design and business models tools (based on customer discovery and customer validation), helped create loops of feedback to support the businesses continuously improving its operations and strategy. Innovation doesn't have to be a long, expensive process with uncertain results whatever business size and resources.

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FIGURES

Figure 1. Trend Canvas (TrendWatching consumer trends and insights 2013, http://trendwatching.com)

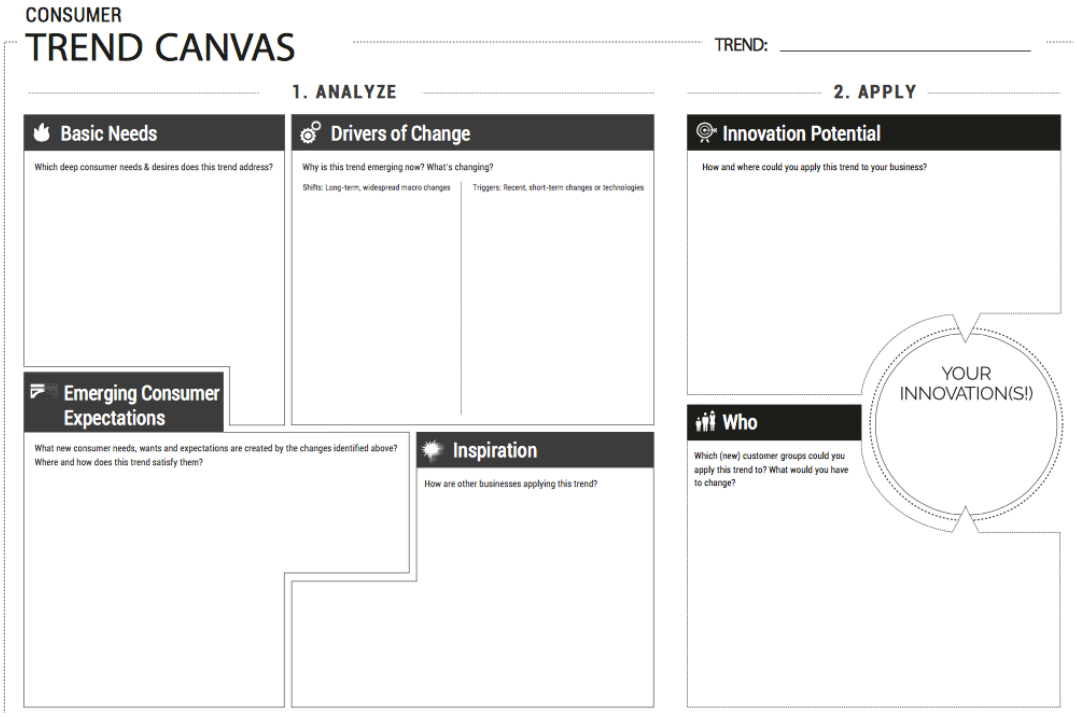


Figure 2. Customer Journey Canvas (Van der Pijl, Lokitz & Solomon, 2016).

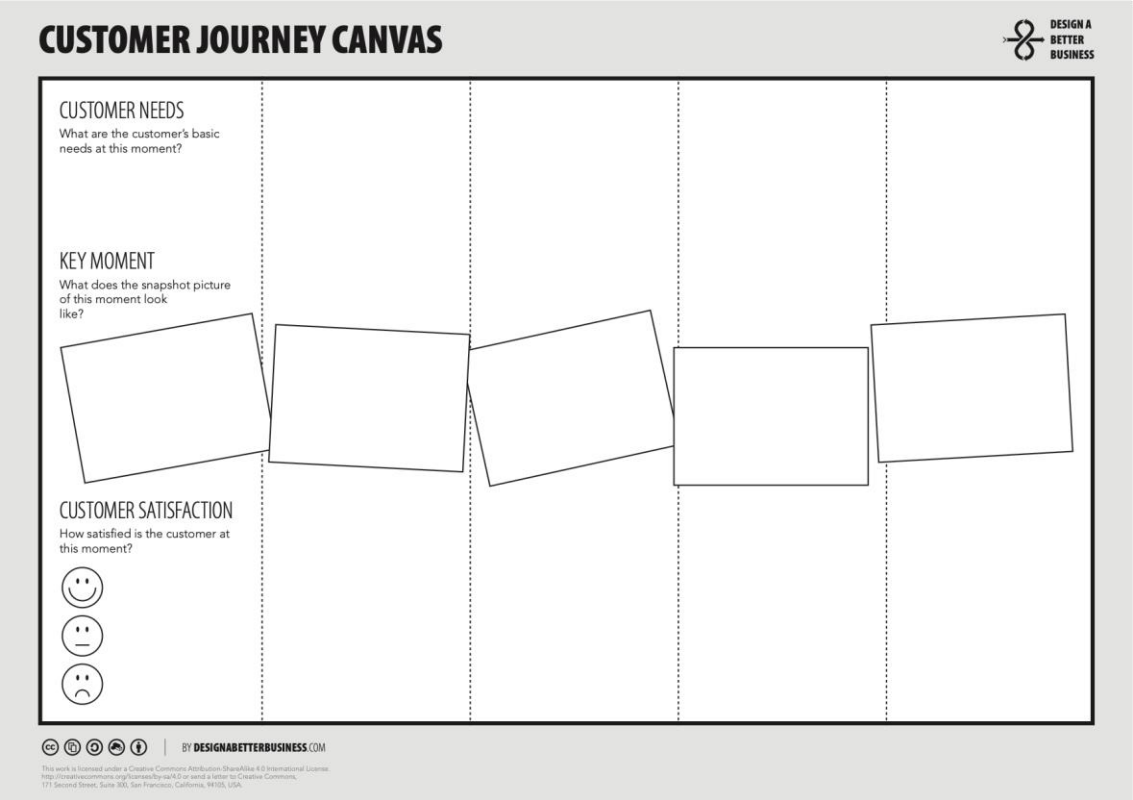


Figure 3. Empathy Map (Gray. D,. Last updated on 16 July 2017 at http://gamestorming.com/empathy)

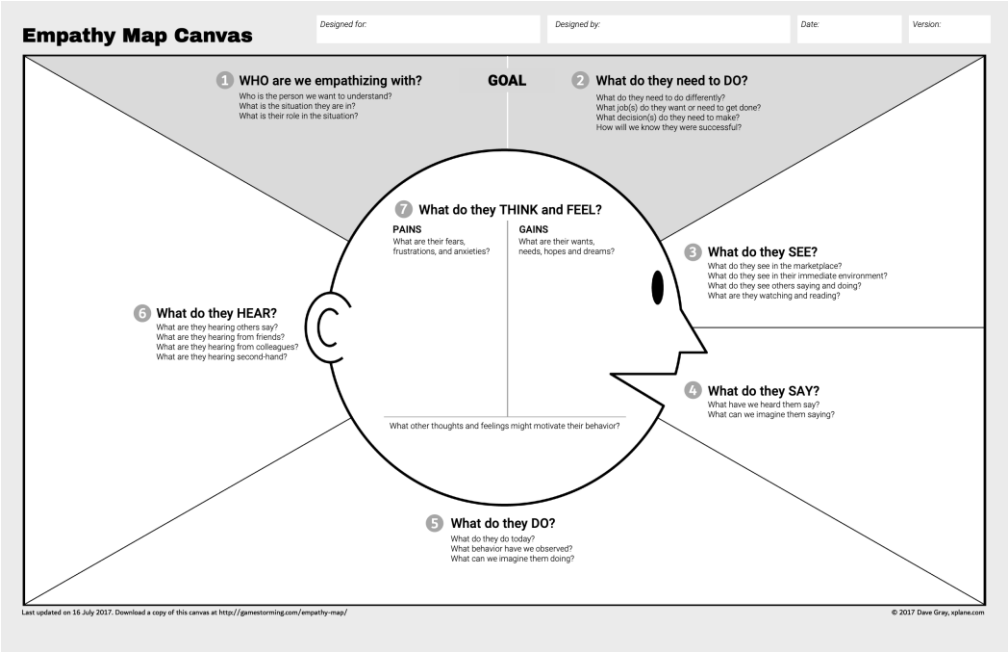


Figure 4. Storytelling Canvas (Van der Pijl, Lokitz & Solomon, 2016).

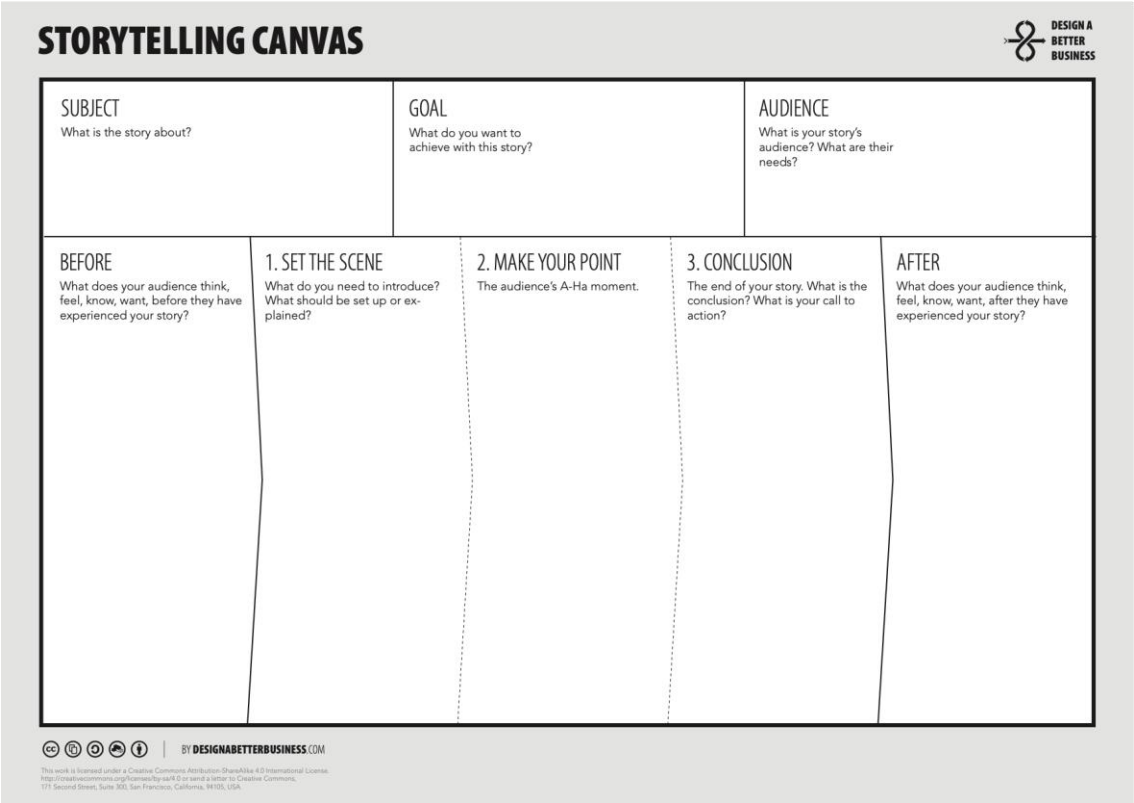


Figure 5. Thinking Hats. (EdX course, September 2018)

Figure 6. How Design Thinking and Lean Startup relate? (Mueller & Thoring, 2012)

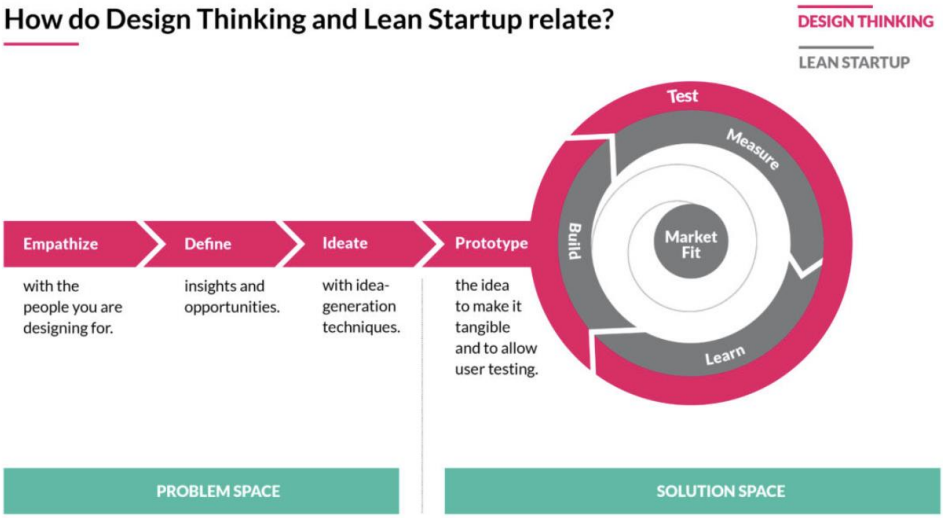


Figure 7. Value Proposition (Strategyzer)

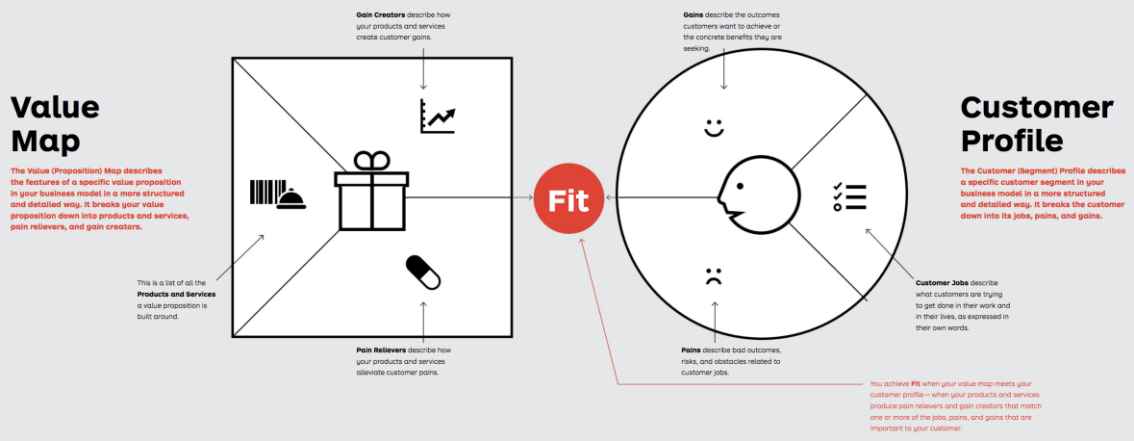


Figure 8. How Value Proposition interacts with Business Model Canvas. Stategyzer, makers of Business Model Generation, strategyzer.com

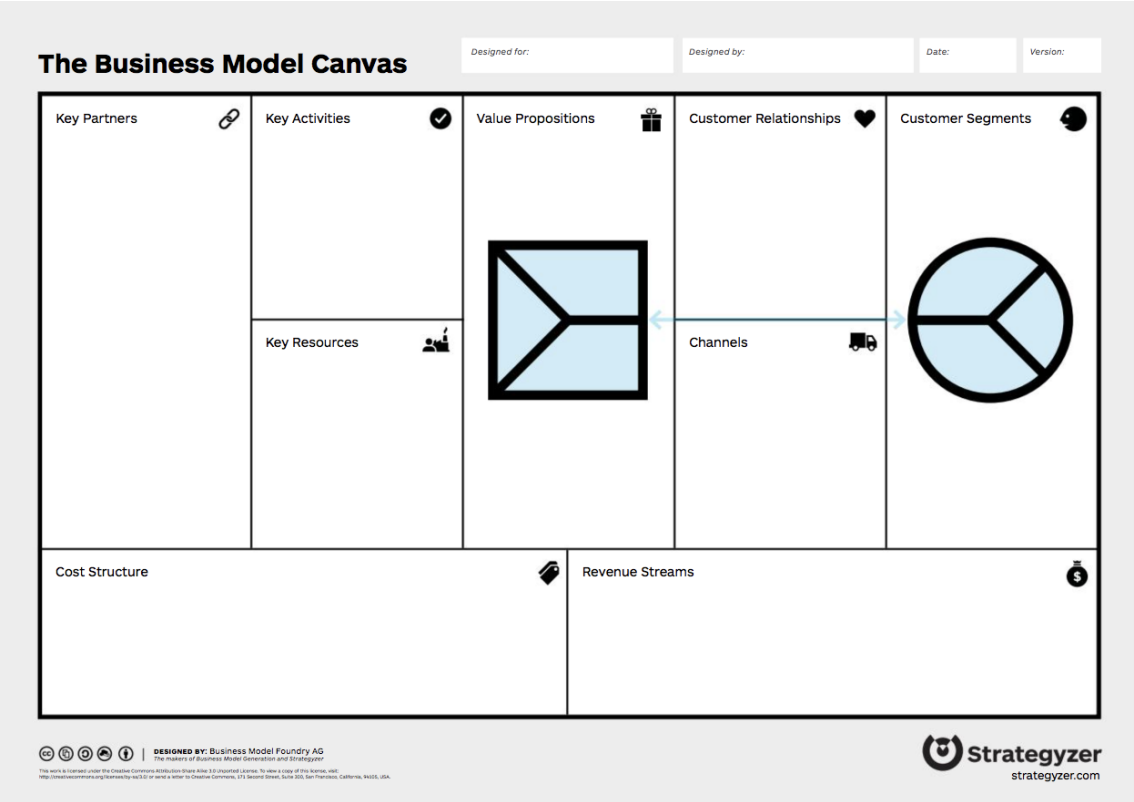


Figure 9. The ten types of innovation (Doblin, 2013)

Figure 10. Business model Navigator (St. Gallen, 2014)

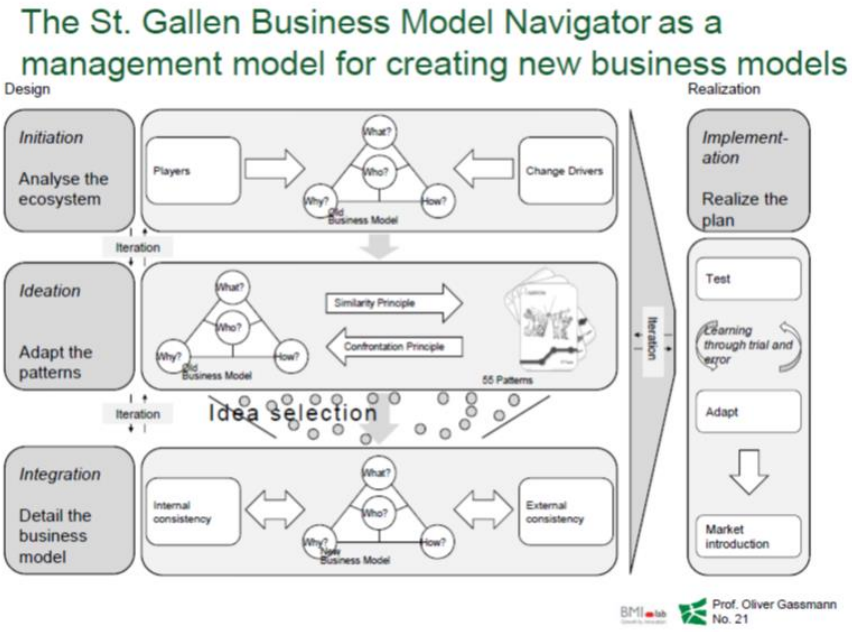


Figure 11. Innovation Radar (Sawhney et al., 2007)

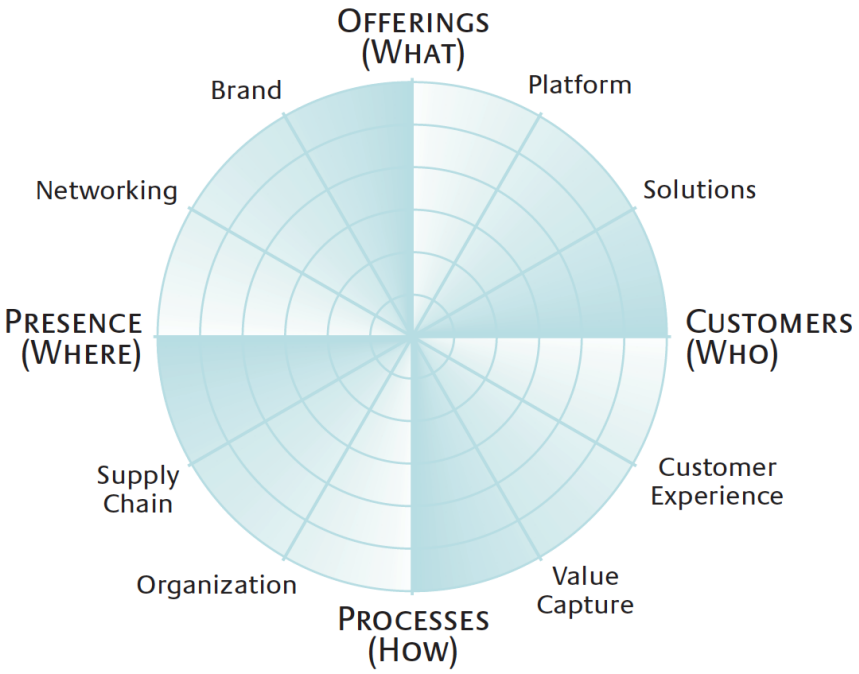


Figure 12. Business Model Canvas, (Strategyzer)

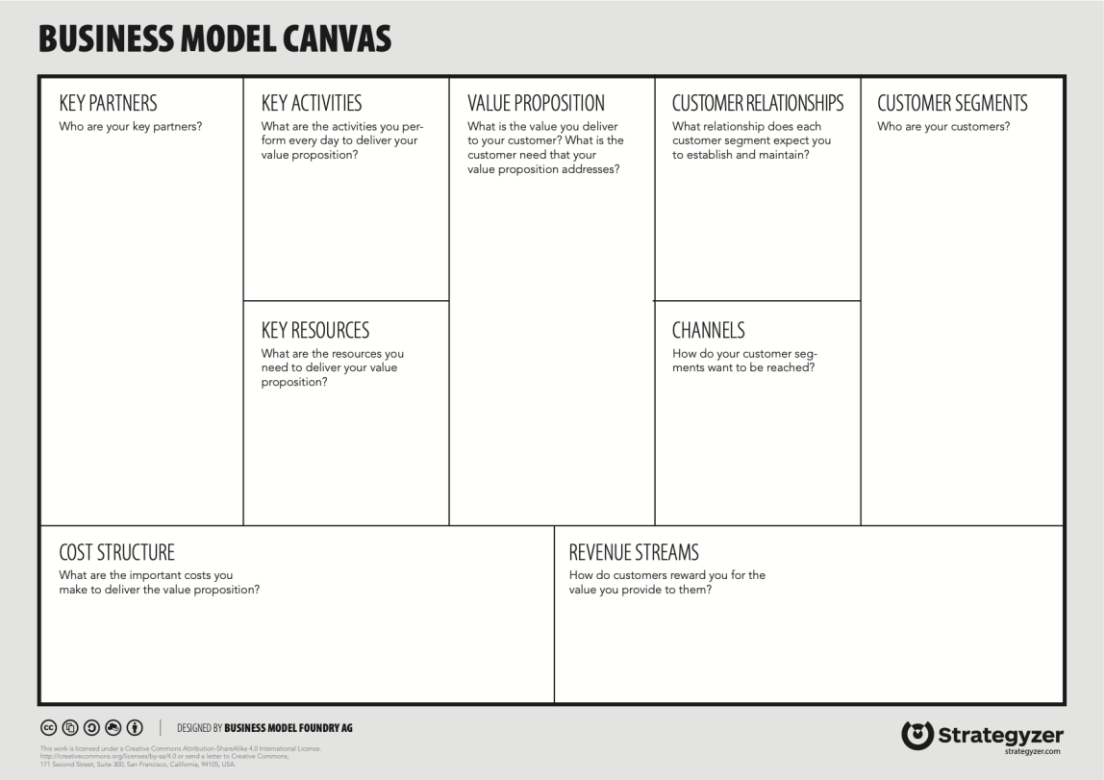


Figure 13. Lean canvas (Maurya, 2012)

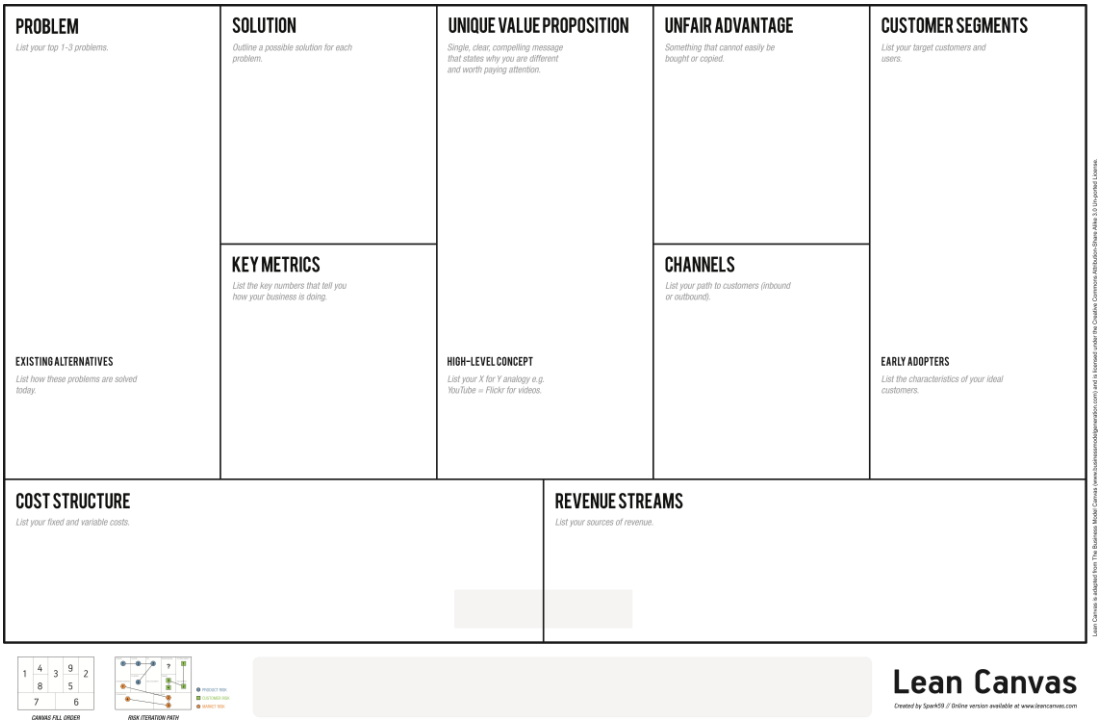
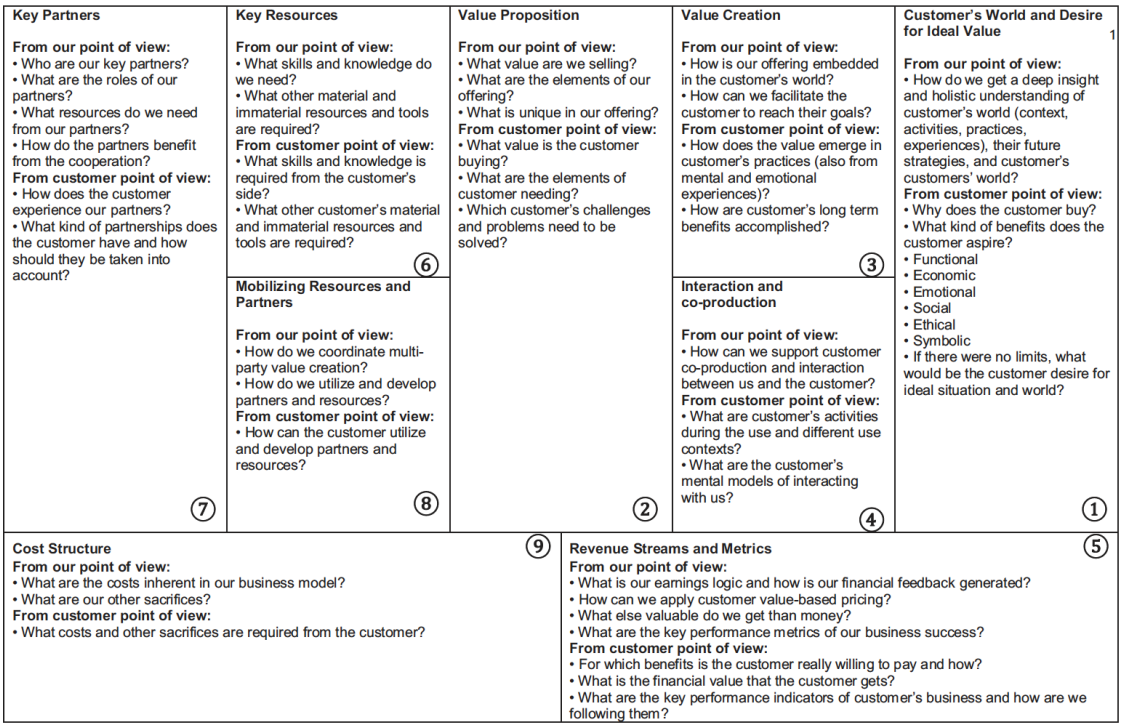


Figure 14. Service Logic Business Model Canvas (Ojasalo & Ojasalo, 2015)



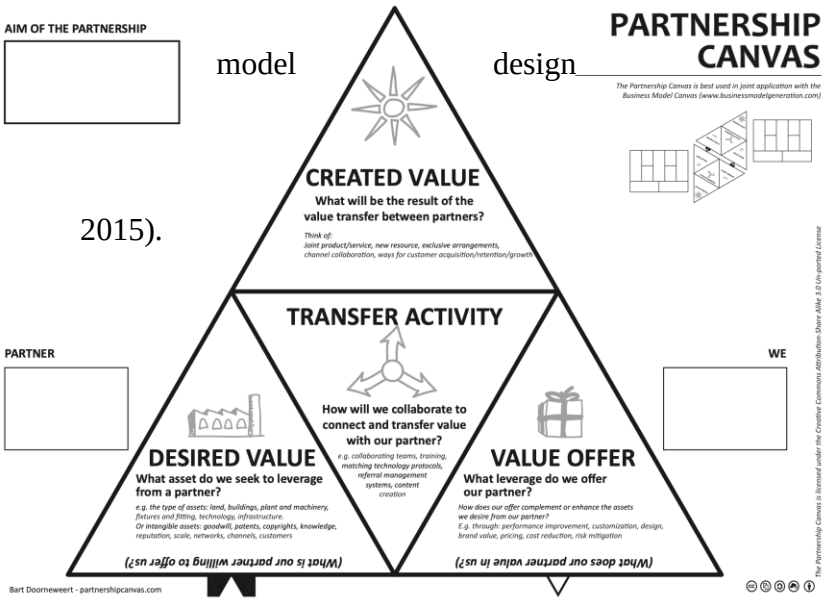


Figure 15. Business model design through partnerships (Doorneweert & Vanhaverbeke, 2015).

Figure 16. Business model design through partnerships (Doorneweert & Vanhaverbeke, 2015).

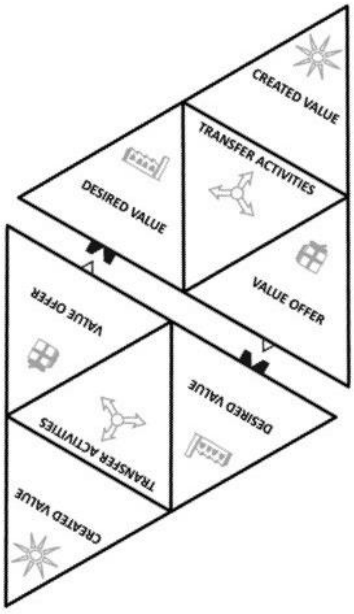
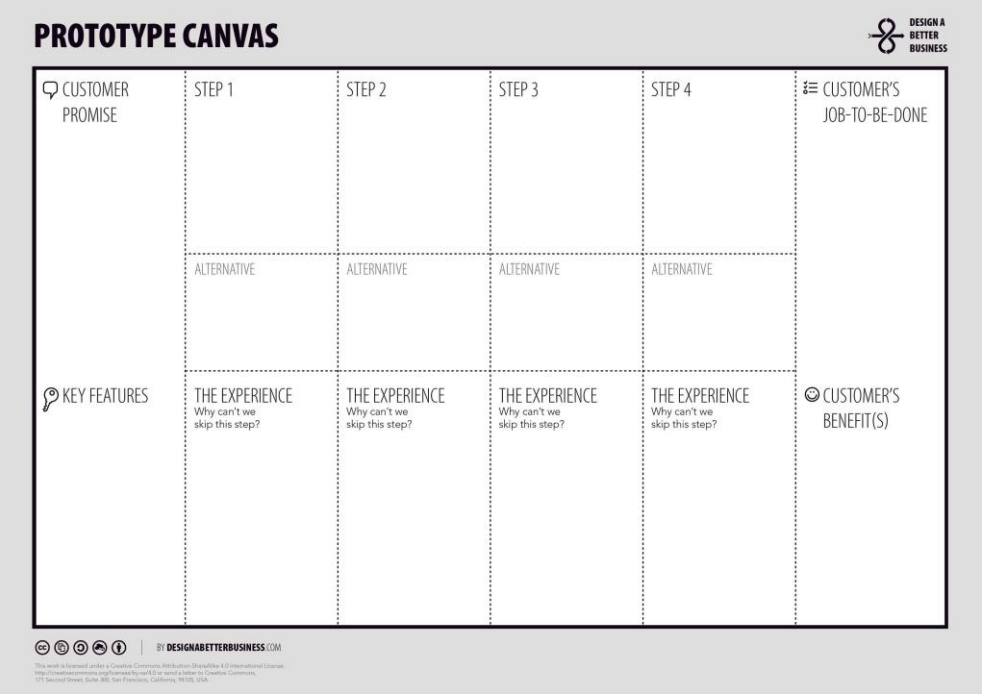


Figure 17. Prototype Canvas. Design a better business



It is a paragraph, single-spaced, up to 100 words, consisting of a brief narration about the content of the article, purpose, significance, methodology and main conclusions.