



## STRATEGY, PROCESSES, CULTURE, AND FUNDING THE GROUNDWORK FOR SUSTAINABLE INNOVATION

*Estratégia, Processos, Cultura e Financiamento a base para a Inovação Sustentável*

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### ABSTRACT

What does it take for organizations to innovate? Although, there several classifications that define Innovation Management they can be grouped into four categories: Strategy, Processes, Culture and Funding. While strategy focus on the idea of organizations being proactive to fast adapt to changes and exploit opportunities, processes are determinant for the definition of the problems, validate and test solutions that fit the market. Meanwhile, culture is being necessary to leverage innovation and introduce practices for knowledge management and continuous innovation. The research focused on the why and how, bringing relevance for the context of the organizations, either social or technological, experimental methods, partner value and internal mechanisms for innovation orientation. The goal is to provide an integral vision and balanced practical approach for the development of products, services, business model redesign in a sustainable manner. It is an attempt to manage the uncertainty factor and at the same time identify and generate opportunities through the ability to intervene proactively in the market with stakeholders and technical systems. In this way, it overcomes the management problem-solution shorter cycle, within a micro constructivist approach of small groups, of mentoring programs.

**Keywords:** Innovation Management, Innovation Strategy, Innovation Processes, Innovation Culture.

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## ESTRATÉGIA, PROCESSOS, CULTURA E FINANCIAMENTO A BASE PARA A INOVAÇÃO SUSTENTÁVEL

*Strategy, processes, culture, and funding the groundwork for sustainable innovation*

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### RESUMO

O que é preciso para as organizações inovarem? Embora existam várias classificações que definem a Gestão da Inovação, elas podem ser agrupadas em quatro categorias: Estratégia, Processos, Cultura e Financiamento. Enquanto a estratégia se concentra na ideia de que as organizações são pró-ativas para se adaptar rapidamente às mudanças e explorar oportunidades, os processos são determinantes para a definição dos problemas, validam e testam soluções adequadas ao mercado. Enquanto isso, a cultura está sendo necessária para alavancar a inovação e introduzir práticas de gestão do conhecimento e inovação contínua. A pesquisa enfocou o porquê e como, trazendo relevância para o contexto das organizações, seja social ou tecnológico, métodos experimentais, valor da aliança e mecanismos internos de orientação à inovação. O objetivo é fornecer uma visão integral e uma abordagem prática equilibrada para o desenvolvimento de produtos, serviços, redesenho do modelo de negócios de maneira sustentável. É uma tentativa de gerenciar o fator de incerteza e, ao mesmo tempo, identificar e gerar oportunidades através da capacidade de intervir proativamente no mercado com as partes interessadas e os sistemas técnicos. Dessa maneira, supera o ciclo mais curto de solução de problemas de gerenciamento, dentro de uma abordagem micro construtivista de pequenos grupos, de programas de mentoria.

**Palavras-chave:** Gestão da Inovação, Estratégia de Inovação, Processos de Inovação, Cultura da Inovação.



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## ESTRATEGIA, PROCESOS, CULTURA Y FINANCIACIÓN DE LAS BASES PARA LA INNOVACIÓN SOSTENIBLE

*Estratégia, Processos, Cultura e Financiamento a base para a Inovação Sustentável*

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### RESUMEN

¿Qué se necesita para que las organizaciones innoven? Aunque existen varias clasificaciones que definen la Gestión de la Innovación, se pueden agrupar en cuatro categorías: Estrategia, Procesos, Cultura y Financiación. Si bien la estrategia se centra en la idea de que las organizaciones sean proactivas para adaptarse rápidamente a los cambios y aprovechar las oportunidades, los procesos son determinantes para la definición de los problemas, validar y probar las soluciones que se ajustan al mercado. Mientras tanto, la cultura es necesaria para aprovechar la innovación e introducir prácticas para la gestión del conocimiento y la innovación continua. La investigación se centró en el por qué y el cómo, aportando relevancia para el contexto de las organizaciones, ya sea sociales o tecnológicos, métodos experimentales, valor para los socios y mecanismos internos para la orientación hacia la innovación. El objetivo es proporcionar una visión integral y un enfoque práctico equilibrado para el desarrollo de productos, servicios, rediseño de modelos de negocios de manera sostenible. Es un intento de gestionar el factor de incertidumbre y al mismo tiempo identificar y generar oportunidades a través de la capacidad de intervenir proactivamente en el mercado con las partes interesadas y los sistemas técnicos. De esta manera, supera el ciclo más corto de solución de problemas de gestión, dentro de un enfoque micro constructivista de grupos pequeños, de programas de tutoría.

**Palabras clave:** Gestión de la innovación, Estrategia de innovación, Procesos de innovación, Cultura de innovación.

## INTRODUCTION

Innovation Management scope is vast and might include organizational structure environment conducive to innovation, leadership, knowledge management, relationships, mutual benefits for businesses, users and partners, agile processes, networks, service-product offering, projects funding, change management, functional areas such as strategy, marketing, business intelligence.

Also, Innovation Management with processes and toolkits for problem definition, ideas generation, solutions validation might create business ideas, attractive, feasible, viable and adaptable to the market; these are supported on trends and context tools, jobs to be done, proposition value, partnership value, innovation models frameworks.

This research hypothesis is while Innovation Management is a complex system, businesses that are based on the four pillars of Strategy, Processes, Culture and Funding can have a pathway to agile, systematic, measurable, and sustainable innovation, not just innovation theater.

Besides, open innovation enhances creative thinking (idea generation, divergent thinking), which “breaks boundaries and reframes problems” (Alstynne, 2010), critical thinking (description, analysis, interpretation, categorization and classification, evaluation, and assessment), and experimentalism essential elements for innovation.

## 1 LITERATURE REVIEW

Open Innovation concept dates back to 2003, questions traditional team, department, company funnel Stage-Gate for developing products. Open Innovation is “the use of purposive inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation” (Chesbrough, Vanhaverbeke, and West, 2006).

Nowadays, the concept encompasses that ideas come from all external sources and it is necessary to manage a program of Open Innovation with potential collaborators for idea generation, evaluation and product portfolio management.

Early in 1985, Lundvall, mentioned that increasing investment in R&D might give small marginal returns, based on two premises of the weak relationships to the potential users and how costly to obtain information about user needs.

Open Innovation concept evolved and start including a business model as “a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization’s business model” (Chesbrough and Bogers, 2014).

In this way, open innovation offers business opportunities for a companies spectrum that were not previously considered as beneficiaries of open innovation strategies. Further than new product development companies with open innovation have competitive advantages with innovation network (Vanhaverbeke 2014).

Not only Open Innovation includes business model design a strategic roadmap of the company in creating value, a further selection of innovation partners and joint projects of value transfer.

Collaborative competences include both “looking outside”, collaborating with business partners and customers, and “looking inside”, integrating employees in the innovation processes (Helkkula & Holopainen, 2011).

Ordanini and Parasuraman (2011) consider three sources of service innovation: collaborative competences, the dynamic capability of customer orientation, and knowledge interfaces, e.g. social and physical conditions facilitating knowledge transfer within and among companies.

That highlights open innovation as a system of collaborations, user-centered, knowledge management, in line with the business model of the organizations. Further, open innovation involves three components: Co-Creation, User Innovation, and Crowdsourcing.

Co-Creation includes collaborative processes for the development of new value from concepts and ideas to testing (products, services, business model redesign) with stakeholders through interactive and direct relationships, some cases repeatedly.

Co-creation as an active, creative and social process entails: “Connections (interactions between people, such as companies and customers, not interactions between consumers and products only); Collaboration, rather than just involvement; Co-creativity (not simply co-construction or co-production)”, (Roser, T., Samson, A., Humphreys, P., Cruz-Valdivieso, E. 2009)

According to Prahalad and Ramaswamy (2004), by focusing on co-creation, value creation grows exponentially and delivers valuable experiences within customer experience management.

User-driven innovation, on the other hand, is the “phenomenon where new products, services, concepts, processes, distribution systems, marketing methods, etc are inspired by or are the results of needs, ideas, and opinions derived from external purchasers or users. User-driven innovation involves existing and/or potential users, and the processes rely on systematic activities that search for, acknowledge, tap, and understand the users’ explicit as well as implicit knowledge and ideas” (Hjalager & Nordin, 2011).

According to Arnkil, Järvensivu, Koski, and Piirainen, (2010) there are three variables: Design for user, product/service developed on behalf of the user; Design with the user, product/service developed with the user; Design by the user, product/service developed by the user.

Crowdsourcing is “the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call” (Howe, 2006).

Crowdsourcing uses online platforms to hold competitions for creative ideas with their dashboard of submissions, reviews, and ratings. Usually, challenges are uploaded to communities (industry experts, researchers, employees, consumers) commonly with extrinsically economic benefits.

Although, Dahlander and Piezunka (2014), monitored 23,809 organizations to study suggestions received from external contributors and how organizations responded. The author’s concluded that crowdsourcing is not efficient unless companies develop reciprocal relationships with users.

## 2 INNOVATION MANAGEMENT

### 2.1 Strategy

Companies are not independent sources of innovation; they are integrated into an innovation ecosystem of stakeholders. Innovation, creating something new that has value for users, it is not an individual job of managers, technologists or experts, but is generated from the market based on users’ unmet needs, expectations, trends, and partner value.

Expert guidance has its flaws, in the US economy, not a single post-war recession was predicted a year in advance by the Fed, government, International Monetary Fund or a consensus of forecasters; on financial industries, stock markets, experts, in general, don't beat indexes.

Along with different industries, the probability of products and services failure is high, the companies’ dependence in a connected world is increasing, and shorter product life cycles. McGrath (2013) points out the emphasis is no longer on the exploitation of competitive advantage for an extended period but the continuous search for new business opportunities.

Open Innovation might help to deal with this great complexity. There are three types: outside/in through acquisition, absorptive capacity as inbound process phases; inside/out includes licenses of intellectual property and technology, common creatives, corporate incubators, spinouts; mixed outside/inside in the scope of strategic alliances, joint ventures, consortia, networks, ecosystems.

When the customer is at the center of value creation, service innovation focuses on developing value propositions and prerequisites for customers so that they can engage in value creation by providing resources with their knowledge and skills (Edvardsson, Gustafsson, Kristensson, & Witell, 2010)

Three user-centered paradigms are:

- Design Thinking based on empathy, definition, validation, experimentation, and test.
- Lean based on build, measure, and learning.

• Customer Development includes discover the customer, validate with the customer, customer creation and entrepreneurship.

Design Thinking is a visual process that pays attention to participatory and collaborative multiple perspectives for idea generation, evaluation, and experimentation with prototypes. It is human-centered, creative and optimistic process available regardless of time and budget

Lean aims to shorten the cycles and focuses on building a minimum viable product (MVP) as quickly as possible through continuous iterative and validated learning. Using low-cost tools not only to create a feasible and viable MVP but to fail faster and cheaper in case there is no commercial buy from potential customers.

Customer Development theory features two phases; Learning and Discovery (customer discovery of pains and jobs to be done, validate with the customer and user acceptance), Growth and Scale (customer creation with market entry and investments, and product, partnership, distribution, sales expansion).

For Blank (2019) having an incubator/accelerator it's not enough (demos, prototypes are not the goal), the goal of a successful program is deploying, how innovation going through the organization bureaucracy (across functions and departments), and deliver to the market. Otherwise, it is innovation theater from organizations based on initiatives, not deliverables to justify funding or branding value.

Further, co-creation processes, there is a need to examine not only the dyadic relationship between the company and its customers but also the network or ecosystem viewpoint. Networked innovation can be defined as “innovation that occurs through relationships that are negotiated in an ongoing communicative process, and which relies on neither market nor hierarchical mechanisms of control” (Swan and Scarbrough 2005).

It is at the intersection between individuals and organizations, through the operation of local and global networks, that distributed knowledge can be brought together and integrated into new products, processes, services, and new business models.

Open Innovation besides absorption capacity mechanisms might speed up the development and time to market for new products and services. “Tapping into existing knowledge residing in external organizations or co-developing knowledge with them is likely to speed up the innovation process” (Vanhaverbeke, Exnovate).

“The future inspiration comes from designing with outside collaboration, structure inclusion emphasizes autonomy, flexibility and personal development and the last the transient competitive advantage and seeking opportunities at different moments of product or firm lifecycle” (Aurik, Fabel, Martin, & Jonk, 2015)

## 2.2 Processes

Blank (2019), points out the need for end-to-end innovation design and implementation process, something like an innovation doctrine that might be used to search for a business model.

In this section are considered distinctive phases correspond where ideas and technology come from, what problems are solving and testing.

- 1) Radar innovation
- 2) Scanning the business environment
- 3) User immersion
- 4) Idea generation and solutions validation
- 5) Innovation models framework
- 6) Business model redesign
- 7) Prototyping

These phases are based on problem definition, asking questions, generate insights and later generate and validate ideas to recognize opportunities. With testing, the opportunities are formulated and with market entry, there is an opportunity exploration.

Managers competences and capabilities to handle this process along the way might be as important than the type of users or businesses involved in the innovation programs. Knowledge as relational (know-with), with stakeholders facilitating space, time, tools to interact and collaborate to develop opportunities.

These processes highlight that innovation is not the vision of a general manager, marketing or sales executives. Besides competitive analysis is not the main area of business intelligence, new products or services do not target specific users but jobs to be done, and experimentation is essential for decision making.

In the radar, section are included the business diagnosis with a questionnaire that indicates the innovation potential for the future, and the present assessment is based on businesses 12 dimensions of Innovation: offerings, platform, solutions, customers, customer experience, value capture, processes, organization, supply chain, presence, networking, brand.

In the scanning, the business environment phase the toolkits are Consumer Trend Canvas based on users expectations and perceptions, drivers of social, technological, economic immediate changes allowing demand anticipation and future scenarios. Customer Journey Map is a tool that monitors all the users' interactions with the organization, before, during and after the product and service experience. Predictive inference software, both inference and prediction describe tasks in which we learn from the data in a supervised way to find a model that describes the relationship between independent variables and the result.

In the user immersion category, ethnography provides insights through observation of people's everyday lives to understand jobs to be done. Together with in-depth interviews permits understand unarticulated needs. Netnography listening to customers on digital platforms to identify topics, trends, influencers. Content analysis involves qualitative (subjects, products, brands) and quantitative data (volume, message and interaction frequency) processing. Online surveys are useful for mapping scenarios and concept ideas. With this data processing able to design the empathy map canvas that reflects what users feel, listen, see, say and do and the efforts and results to have the job done.

For idea generation might be useful to use in conjunction with some tools that activate the creativity, skills, and capabilities to see from different angles solutions to the problems.

In Mind Mapping a lead theme is written in the paper center and afterward new ideas, words and concepts are inserted for organizing, and fast learning.

6 Thinking Hats sessions, where participants assume each hat role, the white hat refers to data, yellow hat the positive points, the black hat the negative points, the red hat intuition, green hat creativity and blue hat the process control.

Brainwriting, where the group leader presents the problem and the participants, write four ideas in each piece of paper. In continuation, other participants take from a pile one piece of paper at each time and add ideas and commentaries. It doesn't matter how illogical or unpractical it seems the ideas.

Scamper compels to ask questions that otherwise it wouldn't be done. The S refers to substitute, replace things, procedures, ideas; C combining, mixing subjects, concepts, ideas, products, services; A adapting from other contexts and situations ideas; M modify, add, transform idea, functionality, attributes from product or customer experience; P putt to other uses, rethink usage, change application; E eliminate, subtract parts, problem's elements; R reorder, invert elements and processes.

In the Gamification, the use of techniques and dynamics of games and leisure in non-recreational activities to enhance motivation and contribute to finding solutions to a problem might include Gamestorming, Binnakle, Wakeupbrain, Lego. They all impulse co-creation, core problem identification, insights, creative sessions' optimization with questions, games, group discussions, for ideas improvement and solve challenges that lead to prototyping.

After the context, immersion, idea generation and gamification phases, it will be able to design Value Proposition Canvas that includes customer segment, jobs to get done, pains (risks, obstacles), and gains (benefits, outcomes) and what the company through products and services can create gains and relieve pains.

Innovation models framework: Doblin include Profit, revenue and costs model; Network, partnerships to create value; Structure, align resources and talent; Processes, iterative with innovative methodologies; Product Performance, product attributes and functionality; Product System, complementary products and services; Service, supports and power proposed value; Channels, offerings delivery to users and consumers; Brand, offerings representation; Customer engagement, interactions.

Xplane Visual Process Innovation uses a framework and toolbox that follows five phases: Current State, Future State, Validate, Activate, Embed that include ideation, prototyping, scenarios method, stress testing, change management and developing a culture and organizational structure rewarding innovation.

The business model Navigator design and implementation are supported on analysis of players, change drivers, adaption to the business models fifty-five patterns already singled out and business model definition based on what, who, why and how.

The Business Model design and redesign category include the Business Model and Lean canvas, Service Logic Canvas. For digital platforms STOF - Service (value proposition, context of use, brand, customer retention), Technology (architecture, security, privacy, service quality, internet platforms), Organization (partners, resources), Financing (costs, revenues) and VISOR - Value proposition, Interface (it's the WOW factor digital experience, devices, technical support), Service Platform (technology), Organization (processes, ecosystems), and Revenue.

Value Network Map design includes roles and participants, tangible and intangible value exchanges and their sequencing. Partner Value Matrix of tangible and intangible exchange activities (sales, products/services, money/commissions, market access, reputation, data). The value offer must be based on what is present in the business model. Meanwhile, the desired asset is a quality that the partner has and the value created is related to what it needs for the business model.

Storytelling is a story for an audience based on before and after how they feel, think, know, learn, want. It is context-setting based on the goal, actions, arguments, emotions, facts, ethics, obstacles that helps to change the audience previously opinion. Storytelling is a form of service prototyping that jointly with physical objects (mockups), models, virtual simulations, 3D help to move from analytical to experiential and testing.

These processes don't avoid uncertainty, the research is always incomplete, in the matter of fact, there are variables from businesses that are unknown, facilitators, organizational structure and culture bias on observational data, testing and experimentation process. Each business situation and solution may be unique and may need more than adaptations of other previous experiments.

## 2.3 Culture

Organizational culture includes both non-material (values, beliefs, relationships) and material (artifacts, technology, knowledge, structural organization).

Schein (2014) mentions inertia, organizations complacency derived from results reached as an impediment for change while competitive advantage and sustainability is the result of being able to solve external adaptation problems and internal integration. According to Schein (2014) assumptions (schemes, paradigms, values that are put into practice in the different organizations when solving difficulties when they demonstrate their effectiveness) are the biggest impediment for change.

As it was mentioned in the strategy section that open innovation might be in line with the business model, organization culture might be a scale that favors or is an obstacle for the company business model.

Hamel (2016), points out that bureaucracy based processes, methods, tools to organize work is the biggest impediment for innovation initiatives and creativity. It's a structure similar to military command, not human-based, network or community. It's emphasis its on control, conformance within a business context of uncertainty. It's goal it's not customer orientation, continuously starting new things, speaking up, taking risks, empowerment within transparent, small autonomous teams thinking like business owners.

Kotter (2018), on the other hand, believes to create an innovative culture it's necessary in an appropriate context. Starting with problem definition, the selection of the people in the organization will promote the change, a roadmap with a communication plan, milestones to reach the goals. Collaborators empowerment, KPIs and organizational structure (roles, responsibilities), and learning and practices internalized are also necessary for sustainable change.

Change management is the challenge for innovation management while there is a movement needed from Now (assessment of the actual situation), for the Future (desire and attitudes towards change). For that is relevant to have clear the value thought and the deficits that impede that goal (structural, leadership, knowledge, training, skills, behaviors) and act on change reinforcement in the organization.

Pisano's (2019) point of view of organizational culture is a fine balance between aggressiveness and permissiveness, creativity and effectiveness, polite climate and disagreement, complementarity collaboration and accountability, level organizations and strong leadership.



Thus in innovative cultures failures result in learning that can be applied to future projects. Experimentation requires clear criteria to validate hypotheses with data and thus assess the value that projects bring. The possibility of open expression, debating ideas from others and raising opposing perspectives. Collaboration on projects and make decisions individually and take the consequences. Leveling that allows reacting more quickly to rapidly changing circumstances and generate a greater diversity of ideas (Pisano 2019)

Open innovation strategy analyzed from Hofsted organizational culture criteria emphasizes a process-oriented culture of technical routines more than to achieve the results to meet the company's objectives. Priority for the organization's employee well being rather than task accomplishment. An internal structure where collaborators have autonomy without strict control from middle and top management and the organizations are not close but open systems for organization outsiders. Reaching company goals and satisfying customers needs is more important than following organizational routines and procedures.

## 2.4 Funding

There are national innovation systems that finance and develop Research & Development for application in business innovations. Types of public funding are subsidies money granted to a lost fund; refundable credits at low or no interest, with waiting periods and flexible return; and participation in capital.

Vega, Brown, and Chiasson (2012), Suh and Kim (2012) highlight public policy initiatives improvements to support businesses innovation, sometimes ahead of networks, universities and businesses R&D centers. Vrgovic, Vidicki, Glassman and Walton (2012) suggest a direct intervention in businesses using innovation hubs.

Public intervention is evaluated for the economic advantages for private businesses' either by public innovation investment through co-funding with private investment or replacing private resources; the impact on businesses, generating new program processes, new partnerships, and new business models.

Business innovation programs with public funding when well structured and short might help to evaluate these public initiatives. Even if a successful impact it is on a small number of businesses and the majority without significant results. Innovation management is systematic and its effectiveness depends on other factors such as strategy, processes, and culture.

Some of the KPIs: Input level, identification problem, and social/technological trends; Output level, number of ideas, validated (tested hypotheses), selected for prototype, problem/solutions adjustment, incremental, radical or disruptive character of innovations, projects pipeline. Process efficiency earned value management, the deviation estimates time or budget and real execution. Outcomes, revenue generated by innovative products.

Manzzucato (2013) emphasis that R&D usually is associated with the private sector and entrepreneurs is not an evidenced fact. In the IT industries Internet, Gps, and touchscreen display all existed by public funding, in the pharmaceutical sector the author points drugs 75% of the molecule entities were researched with public funding, besides direct financing. Manzucutto believes the public sector is a major value creator (might have an equity stake in companies) and the private sector mostly created the business model, the marketing and the D part from the I+D of innovation.

Further, the ongoing debate of the state role of shaper or fixer, globalization processes and strategies of open innovation might make businesses less depend on public funding and accelerate private investment in entrepreneurship, startups.

Business and organizational management levels are less interconnected with countries, regions, sectorial or political government agencies I+D+I and are private based funding.

Private funding use equations such as Bootstrap from family and friends; Business Angel, individuals who invest money, time, mentoring and networking in exchange for an equity stake in the company; Seed capital, an investment fund that raises money from various private investors receiving in exchange corporate ownership. Accelerators, investment comes from a company, but the focus on this type of investment is not money, but to provide the physical space, training, consulting, and networking; Venture capital look for less risk than seed capital, after the first investments and the validation of the business model by the market. Private equity: It is very similar to venture capital in its structure, but it is usually a later phase when the startup is already a consolidated and profitable company and seeks a greater investment. IPO: It is the last phase of investment of a

startup. It is when the partners decide to open the company and offer their shares on the Stock Exchange (Pimenta, 2015).

### 3 DISCUSSION AND RECOMMENDATIONS

Oakey (2013) criticizes Chesbrough for exaggerating the applicability of open innovation systems because R&D is often long-term, expensive and always risky and required necessary protection of outcomes. He argues that closed innovation is still an effective way for R&D investment. Another aspect is that studies on open innovation in SMEs largely consider high-tech SMEs (Hossain, 2015), not brick and mortar businesses.

Another issue is intellectual property, there's the need in the services sector for lead time advantages, the complexity of product/process is strategic suitable appropriability mechanisms that are more relevant than formal or contractual, (Miozzo, Desyllas, Hsing-fen Lee, and Miles, 2016).

Not only is the product of service innovation in many cases not suitable for patenting, but also firms' innovations may require smaller budgets. Although, service innovation can be difficult to copy because of reliance on the input of highly-skilled and experienced professionals (Samuelson, 2010), capabilities and complementary service development.

Innovation management is interdisciplinary for value creation with strategy management and business intelligence for value definition, marketing, customer experience management and IT for value execution. In different levels are involved in the four-phase model (obtaining, integrating, commercializing and interaction) the ways firms leverage external sources of innovation (West, & Bogers, 2014).

How to access inner users innovativeness. The balance between how to find the right customers with the right skills or the facilitators with the right skills and tools. Managers must learn techniques to successfully monitor and manage the process along the way.

Overcoming innovation theater that usually involves marketing, sales tactics, and mentoring (devoid of originality considering innovation programs standards in the industry), don't bring value for businesses and customers. But KPIs from the beginning from activities and productivity, able to record track successful products and business models market entry, and organization' sustainable innovation.

Metrics that can be based on inputs, within a project (e.g. human resources, financial resources, and the identification of new needs and trends); process efficiency of the innovation process (e.g. time, budget variances); output which refer to development activities (projects in the pipeline, the number of ideas, patents, publications); and outcome which are market-oriented performance indicators (Luttgens, D., Piller, F., Erkens, M., & Wosch, S. 2014).

### CONCLUSIONS

Innovation management, in general, is based on four interdependent pillars, strategy, processes, culture, funding that might need different competences. That includes collaboration with the market and institutional organizations, iterative processes, innovation funnel, change management, and fundraising

Users and businesses' selection for innovation programs should be trait-based on organization innovation ADN. Networks and relationships might be transversal to the companies independently of their sector, size or geographical location.

Use of mystery guests, social media, and customer journey touchpoints for unmet needs exploration and collaborative co-creation processes. Although, access and exposure to the latest technologies, such as software inference predictive might complement user-centered innovation.

For the collaboration to develop there is a need for interaction, value quality relationships, facilitators, environment (physical or virtual space), and tools for dynamic group sessions, idea-generating methods, design thinking, gamification, rapid prototyping.

It is not clear which options, external innovation centers or in house innovation departments, are more successful although teams for innovation projects are generally small, and the majority of the programs are emerging.

Although there is an ascendant of private funding for innovative programs and entrepreneurship measuring efficiency of both public or private has to do with programs metrics and businesses' embedded strategies and capabilities to continuous innovation.

Metrics can be based on inputs, process efficiency, outputs but is the outcome which are financial (revenue fraction generated from innovation products) and market-oriented (customer satisfaction, advocacy, and social and environmental benefits) performance indicators that define for businesses and entrepreneurs the success of innovation management.

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