PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

University of Science and Technology Houari Boumediene

جامعة هواري بومدين
للعلوم والتكنولوجيا
USTHB

وزارة التعليم العالي والبحث العلمي
USTHB
قسم البناءات الميكانيكية وهندسة الإنتاج

Mechanical and Process Engineering Faculty
Department of Mechanical and Production Engineering

Managing Innovation and Creation Innovative Enterprise Course

2nd year Master

Stream: Mechanical Engineering
Option: Welding Engineering

Assistance Professor. REZALA Aicha

University year: 2024/2025

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Content

(According to the syllabus for the IngS speciality)

Master's title: Welding Engineering

Semester: 3

Teaching mark: UED 3.1 (Transversal)

Title of subject 2: Managing innovation and creation innovative enterprise

VHS: 22 h30 (C: 1h30)

Credits: 1

Coefficient: 1

Teaching objectives:

The purpose of this subject is to bring together business ideas, concepts, and techniques that will develop skills and allow a decision knowingly about the future direction of an organization. This kind of thinking encouraged by the adopted approach will provide a bridge between the program of technical training "MASTECH" and concepts of project management resulting in the creation of a new business based on the development of an innovative new product. This topic is intended to provide a framework and an overview for students to think in an integrated manner about the future strategy of a company. In terms of these modules, students will be able to deal with group decisions and conflict, learn how to communicate better both orally and in writing, and how to critique and improve the work of others**.**

Previous knowledge recommended:

Subject content:

Managing innovation and creation of an innovative enterprise

- Managing innovation.
- Elaboration of business plan of an innovative project.

Assessment method: Continuous assessment: 33%; examination: 67%.

Bibliographical references :

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Preface

An innovative company is an organization distinguished by its ability to regularly introduce new ideas, products and services to the market. It constantly seeks to improve, transform and create value in new ways.

Innovation is a key factor in competitiveness for companies and even nations. In an ever-changing economic environment, innovation enables organizations to differentiate themselves, stay relevant and respond to changing customer needs.

We're going to adopt a practical approach, respecting the way most entrepreneurs think, and built around the quest for opportunities.

Aimed at second-year Master's students in the Mechanical Engineering specializing in Welding Engineering, in the Mechanical Engineering and Production Department, this mimeographed course entitled “Managing innovation and the creation of innovative companies” aims to develop initiative and risk-taking with an entrepreneurial spirit.

At the end of this course, students will be able to understand the types of innovation, the stakes involved for the company, the steps involved, the risks involved, how to manage them, and how to draw up a business plan and a business model.

Finally, I hope this handout will be well received by colleagues responsible for teaching innovation management and the creation of innovative businesses, and that it will serve as a valuable resource for students.

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INTRODUCTION

Introduction

Innovation management in a company involves a structured approach to generating, developing and implementing new ideas to stimulate growth and competitiveness. It's about transforming creative concepts into tangible improvements, whether it's a new product, a new process or a new service. It's not just about coming up with new ideas, but also about effectively managing the entire innovation process, from initial concept to successful implementation. This process requires a global vision, integrating strategy, culture and operational practices to make innovation an integral and ongoing part of the business.

Our understanding of innovation continues to develop, through systematic research, experimentation and the ultimate testing of management practices and experience. So it's a challenge for all of us with an interest in innovation to stay at the forefront of this rapidly evolving, multidisciplinary field.

Aimed at Master 2 students who have already acquired a basic knowledge of business management, this handbook tackles these complex concepts to develop the skills needed for success in the professional world, innovation and business creation.

It presents business plan approaches for start-up companies and sentence models, which describe the phases of the innovation process, in line with the official program set by the Ministry of Higher Education and Scientific Research, according to the following pedagogical objectives:

- Development of the strategic and managerial skills of future entrepreneurial leaders operating in technologically complex national and international environments.
- Learning the tools and methods for implementing a techno-entrepreneurial or entrepreneurial approach.
- Help to adopt a more structured approach to innovation management within the company.
- Develop a business plan for an innovative project.

CHAPTER I
MANAGING INNOVATION

I.1. Introduction

In a context of globalized competition and omnipresent change, a company's ability to innovate continuously is one key to its long-term survival.

When discussing innovation, it is important to know its different contexts. There is a common misconception that innovation is about coming up with a major game-changing idea and that, as a result, only large companies with sufficient resources for research and development can be truly innovative. While it is true that, at a certain level, innovation consists of identifying truly radical new ideas, it must be recognized that this is not the only manifestation. Innovation is also about ideas that make modest, incremental improvements that collectively contribute to business performance.

I.2. History

Innovation is an old term dating back to the thirteenth century, as is invention, the two terms originally being synonyms characterized by creation and novelty [1]. However, the concept of innovation has evolved considerably over the years. It has been progressively enriched and transformed, particularly during the 19th century.

Broadly speaking, there are two historical approaches :

- Economic, since the origins of the Industrial Revolution.
- Managerial in the last decades of the twentieth century.

In the economist approach, the notion of innovation appears from the very origins of economic analysis, but remains imprecise: it is referred to as ‘economic growth’. It is also restrictive, referred to as ‘technical progress’. One of the main objectives of economists is to identify and understand the factors that determine transformations in the structure of the economy, starting with its basic entity: the company.

I.3. Definitions

I.3.1. Innovation

There are many definitions of innovation, but in its simplest form, it can be described as the identification and exploitation of new ideas for the company, designed to improve its performance and give it an edge over its competitors.

A key factor in economic development, innovation remains an essential lever for long-term growth, not only to cope with the current crisis but also to stand out from competitors, adapt to market needs, and continue to win over customers [1].

Official definition of innovation

The first official definition of innovation appears in the OECD's OSLO manual: Innovation is a means of achieving strategic objectives, improving competitiveness, differentiating, and creating value. Innovation is the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations [2].

Innovation covers several areas and is distinct from invention. It covers four categories of innovation (Fig. I.1):

- **Product innovation** is characterized by 'the introduction onto the market of a product (good or service) that is new or substantially altered in terms of its fundamental characteristics, technical features, incorporated software or any other incorporated tangible or intangible component'.

- **Process innovation** is defined as the introduction into a business of a new or significantly modified production process, method of service provision, or product delivery. The result must be significant in terms of production levels, product quality, or production costs.

- **Organizational innovation** concerns innovations relating to:

  - The structure of the company.
  - Work organization.
  - Knowledge management.
  - Relations with external partners.

- **Marketing innovation** refers to the implementation of new (or modified) concepts or sales methods, to improve the appeal of products, or the services offered to enter new markets.

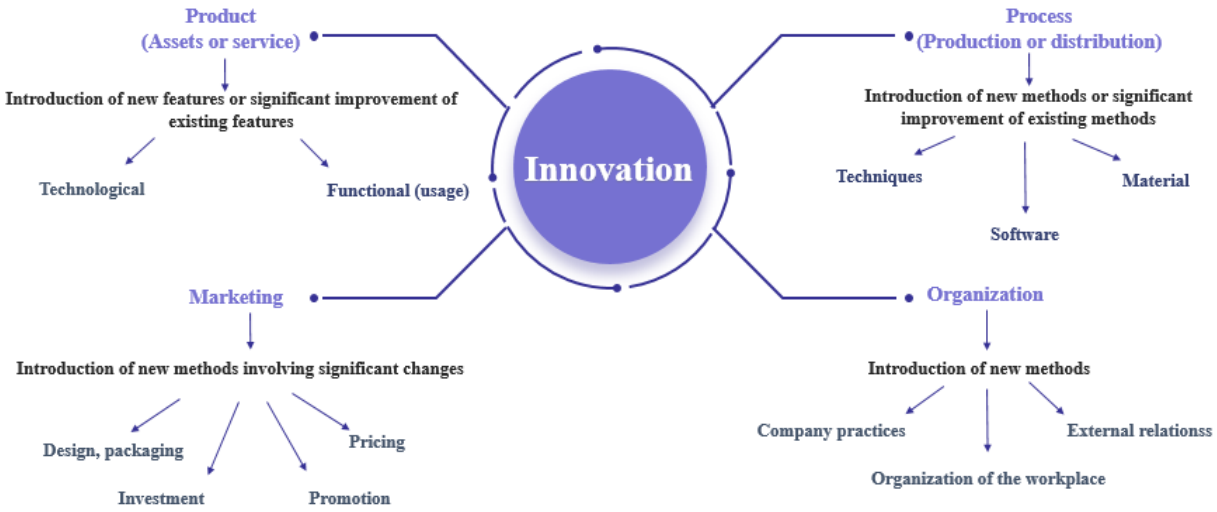

Fig. I.1. Categories of innovation [2].

Standardised' definition

Innovation is considered to be a process which the company must organize, manage and evaluate in the same way as other company processes [1].

I.3.2. Innovation culture and environment

« Innovation-oriented culture is defined as a set of organizational cultural values, norms, and artifacts which supports a company's innovativeness. As an intangible strategic resource, it emphasizes innovation, take risks, future market orientation, open mindedness, and learning » [3].

Duygulu et Al takes it a little further in their introduction and explains that innovation culture can be defined as a culture where creativity and innovation is valued, appreciated, properly funded, and can be channeled to certain needs. An innovation culture can be described as:

« The degree to which organizations are predisposed to learn continuously and to develop knowledge with the intention to detect and fill gaps between what the market desires and what the firm currently offers » [4].

They continue to suggest their own definition in their discussion following their findings:

« Innovation culture, as a set of cultural values and norms in which themes consist of knowledge sharing and open communication, learning and development, social networks and external cooperation, allocation of free time, tolerance of mistakes, rewards and incentive systems, managing differences and teamwork supported by creativity, risk taking and openness to change, is a multidimensional construct including the intention to be innovative, and the infrastructure to support innovation, which emerges from the dynamic interaction between corporate culture and innovativeness » [4].

In his article Responding to Key Exogeneous changes: The Joint effect of network heterogeneity and Culture of Innovation, Radoslaw Nowak explains how they define innovation culture as a culture that requires employee engagement, cooperation and support for the process of creating change [5].

« Adaptive companies will enact cultural norms that strengthen the organizations' capacity for outreach (innovation) and their ability to assimilate information or knowledge. Thus, this can be achieved by fostering cultural norms that emphasize on the flexibility to change, openness in communication and future orientation that focusses on employees' development and strategic planning. In contrast, organizations that are less successful in fostering these cultural norms are less able to change themselves or evolve with their environments » [6].

Key topics are here: Knowledge, leadership, teams, and incentives. These cultural norms can be nurtured by leaders focusing on flexible to change, practice openness in communication, focusing on employee/team development, strategic planning, in contrast organizations who fail at these cultural norms, are less likely to change or evolve according to changes in their environment. It cannot be stressed enough that from a cultural point of view creativity,

receptiveness to new thoughts and ideas, bold leadership and a learning organization is key to achieving a more innovative view. Organizations with an innovation culture will mandate its employees to be flexible, creative, alert, outlooking and innovative in their own organization and outside [6]. Finally, innovation culture can be defined by the intention to be innovative, with the surrounding environment that support the innovation, with the operational capacity and the behaviors required to affect a market and the environment to implement innovation [6].

Wu et al. describes an « Innovative Organizational culture » as being a culture which is opportunity seeking, promotes openness, is flexible, risk-taking and can acquire knowledge but also an organization who puts focus on how far an organization will go to value and promote employees and their new ideas as well as having a flexible standard operating procedure to solve problems and test new ideas and things [7].

Put in another way, innovation culture encompasses values of leaders and employees, idea generation and spreading, systems for managing the innovation effort and promote good initiatives, encouragement of learning inside and out and a tolerance of failure. And regardless of which scholars' definition one follows, Xie et al. claims that the core concept can be summed up as the intention of excitation, encouraging innovation and improving performance [8]. This is simplified, but Calik et al. writes the following definition on innovation culture:

« Innovation culture can be defined as operational and managerial attitudes, beliefs, approaches, commitment, and so on towards innovation and is the first step of the innovation trajectory since it affects the entire innovation path from idea generation to obtaining an innovation » [9].

Other articles get close by giving partial or short explanations like Euchner: « An organization can be said to have a culture of innovation when it supports those people and makes it possible for bold new things to happen with some regularity » [10]. Managing innovation seeks to make sure leaders cherish openness to new ideas and grows a culture where new ideas are generated, employees are taken seriously and appreciated, this in turn will lead to better innovation performance. While this is an easy task, it is easier if one has a roadmap to follow or has strategies which outlines the direction. Theoretical tasks must be put into practice [6]. Organizations with strong implementations of innovation are better at meeting customer demands. They satisfy the customer to a higher degree than competitors, all while utilizing company resources and capabilities to the fullest [11]. In an innovation culture it is important that learning is not only tolerated, but mandatory. Learning from mistakes, from each other, from partners and networks and benchmarking are great tools to get ahead and a diligent way of creating the basis for an innovation culture. This in turn can become the most valuable and important asset of an organization. Having employees learn like this can help outperform competitors and it is also hard to imitate [11]. Ikeda and Marshall found that most outperformers create an organization that encourages and fosters innovation and subsequently design processes that enable their innovation efforts [12]. This goes well in hand with the fact that innovation culture must emphasize a behavioral pattern where change is possible. All members of the organization must contribute positively towards the innovation and collaboration efforts for a new type of culture to emerge. In turn this kind of behavior leads to a better work-

environment and subsequently an innovation culture, which once implemented, can make it easier for leaders or managers to implement innovation plans [8].

« Innovation culture is an environment, and a culture is an almost spiritual force that exists within a company and drives value creation. Organizational innovation culture is a synthesis of values, attitudes, beliefs and ideas within the company, which aims to reward innovation, encourage risk-taking and engage flexibly with a complex environment. An innovative culture in an organization can be broadly defined as ranging from the intention to be innovative to the capacity to introduce some new products, services or ideas through the introduction of processes and systems which can enhance performance » [8].

It is also shown that leaders sharing power, showing support and enhancing cooperation between departments and SBU's, as well as incentives systems such as career development and also internal learning and participation in decision-making can significantly enhance the innovation performance of an organization [8].

The culture of innovation is a crucial element for the success and sustainability of organizations in a competitive and dynamic environment. The capacity for innovation is not limited to the development of new products or services, but includes the implementation of new processes, business models and management methods that promote a sustainable competitive advantage [13]. The concept of culture proposes that there is structural stability, depth, extension and patterns or integrations, indicating that culture is a learned phenomenon, in the same way that character and personality are for each of us [14]. Organizational culture, according to [15], is a form of sociocultural system, in which the social and structural components are closely connected to the symbolic and ideological issue of the organization.

The innovation environment is the physical and organizational framework that supports this culture. It is an environment where creativity, experimentation and the search for new ideas are encouraged and accepted.

A model of innovation culture is created by [16] through the above dimensions (Fig. I.2):

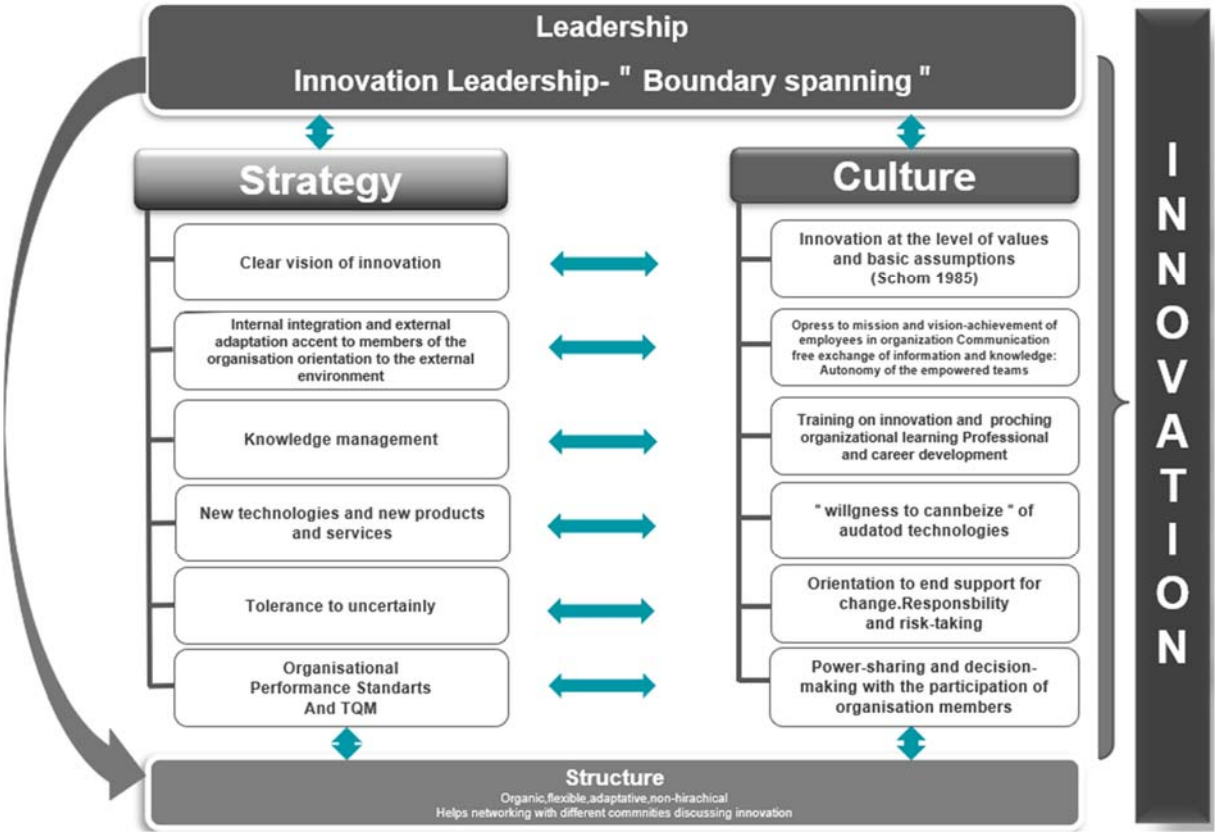

Fig. I.2. The Culture of Innovation Model [16].

The innovation environment is the physical and organizational framework that supports this culture. It is an environment where creativity, experimentation and the search for new ideas are encouraged and accepted.

I.3.3. Innovation ecosystem

The concept of an innovation ecosystem is increasingly used to describe collectives of heterogeneous, yet complementary organizational actors who jointly create some kind of system-level output, analogous to an ecosystem service that natural ecosystems facilitate, and one that extends beyond the outputs and activities of any individual participant of the ecosystem. Due to its attractiveness and elasticity, the innovation ecosystem concept has been applied to a wide range of phenomena by a variety of scholarly perspectives, alongside with seemingly related concepts such as « business ecosystems », « technology ecosystems », « platform ecosystems », « entrepreneurial ecosystems », and « knowledge ecosystems ». This conceptual and application heterogeneity has contributed to conceptual and terminological confusion, which threatens to undermine the utility of the concept in sup- porting cumulative insight.

The concept of an innovation ecosystem provides an attractive metaphor to describe collectives of heterogeneous, yet complementary, organizational actors who jointly create some kind of system-level output, analogous to an ecosystem service that natural ecosystems facilitate [17], and one that extends beyond the outputs and activities of any individual participant of the ecosystem [18-20]. Innovation ecosystems are distinguished from other

organizational collectives (e.g., supply chains, networks) by their governance systems and the specificity of their outputs. Distinct from conventional supply chains, innovation ecosystems are not defined by contractual relationships alone [21].

Distinguishing innovation ecosystems from a generic network of organizations, ecosystem roles and shared standards enable ecosystem constituents to engage in productive interactions that generate identifiable, specific outputs to defined audiences. The attractiveness of this rather elastic metaphor primarily rests on its ability to describe a fresh approach to 'organically' govern mutual organizational specialization, co- evolution, and the collective generation of system-level outputs [22, 23].

Perhaps because of its elasticity, the innovation ecosystem concept has been adopted by a wide variety of scholarly perspectives, with varied phenomenological and conceptual emphases. For in-stance, the strategy literature tends to emphasize the collective generation of outputs, defining innovation ecosystems as « …the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize » [18]. Economic geography schol- ars have emphasized the spatial dimension and defined innovation ecosystems as « .. institutional, geographic, economic, or industrial contexts [which] can be analysed at different levels of aggregation (e.g. firms, industries, universities, regions, and nations) » [24]. In- novation scholars have emphasized the knowledge and learning dimensions, defining innovation ecosystems as « …clusters (physical or virtual) of innovation activities around specific themes (e.g., bio- technology, electronics, pharmaceutical and software) » [25].

Innovation ecosystems emphasize the ecosystem-level output-a value offering-with the analytic interest on a focal firm and the set of components (upstream) and complements (downstream) that support it, and which have a clear supply-push and value production emphasis [18, 22, 26, 21]. In his review of this structural stream, [18] defined such ecosystems as: « …the align- ment structure of the multilateral set of partners that need to interact in order for a focal value propo- sition to materialize ». Reflecting the notion of value as instrumental utility to a set of customers with homogeneous preferences, this definition implies centralized control of an overarching ecosystem blueprint which functions as a co-alignment structure, and therefore, the existence of a (set of) focal firm(s) who define(s) it. With an overarching ecosystem blueprint as a co-alignment structure, the challenge for the focal firm becomes one of defining and controlling this blueprint, as well as persuad- ing others to contribute accordingly [22, 26]. Innovation ecosystems generally have (comparatively) a narrow scope – consisting of the focal firm(s) and immediately adjacent complementors and suppliers, with the customer represented in abstract through their adoption and/or acceptance of the ecosystem output, in the sense that the ecosystem output would not be viable if it did not meet specific customer needs.

An innovation ecosystem has typically been conceptualized as a relatively independent and coherent institutional system primarily comprising of loosely coupled actors sharing a common understanding, and who collaboratively exchange knowledge and ideas leading to innovation [27].

I.3.4. Creativity and imagination in innovation

I.3.4.1. Creativity

Creativity can be defined as an act of bringing together ideas and perspectives that seem paradoxical in the sense that they hold characteristics that normally are not held together or at least are not thought of together [28]. In creative inquiry, the researcher moves away from the logic of either–or and navigates toward the spectrum of opportunities, all the while, not thinking in terms of oppositions or polarities, but embracing an intuitive and rational ambiguity [28].

Traditionally, the concept of creativity has addressed individuals and their uniqueness in having brilliant ideas. This understanding is based on the theory of a single genius whose talent is innate and a gift from God. More recent studies have shown a collective approach to creativity [29, 30], in which people exercise their creative thinking together and come up with innovative ideas. This is also called « collective creativity », which refers to the innovative thoughts that arise from the interaction of the ideas of diverse people rather than from the mind of one individual [31]. Creativity in the research context refers to the capacity to be curious and open-minded in order to explore and investigate beyond what is given (the data), aiming at creating an unimagined future. It is about framing research as a creative process [32], freeing ourselves to create what « might be » instead of sticking to « what is ». The core of creativity in research is to give form to loose ideas, apparently not interconnected, and frame that into possible connections that further understanding and, ultimately, new actions.

This creative approach to research challenges universal knowledge and its inclination to predict and control, instead inviting a closer look at local knowledge, at different voices and perspectives, and at the dynamics of our ever-changing world/society.

If knowledge is co-created in relationship, in context, and in history, this approach to research invites not just an understanding of this creation but also a re-creation to new forms of knowledge, focusing on what Gergen [33] calls « future-forming research », which differs from traditional research in that the research is understood to be a mirror of reality. In a future-forming research, the aim is not to look at what « is there » but to create new forms of action, thereby creating alternative possibilities for society, organizations, and communities. For this, creativity and imagination are key.

I.3.4.2. Imagination: Enabling New Fut

To imagine is the capacity to go beyond the established, agreed reality and experiment with new combinations of meaning. When imagination is unleashed, meanings gain freedom and new knowledge can arise. This is because imagination adopts a fluid and less fixed view of meaning, encouraging ingenuity, spontaneity, and novelty. Through imagination we can form new images and scenarios never thought of before and, by imagining these images and scenarios, we open the opportunity to bring them into reality. Imagination also gives space to emerging processes that are seeds of ideas that, when combined together, can bring new possibilities. Such processes generate new forms and shapes rather than focusing solely on what is already there. According to Cooperrider and Whitney, our collective imagination can enact powerful resources and favor possibilities of creation and change. When many participants

voice their views and ideas on a topic, the potential to create meaningful experiences is amplified.

Some approaches on research are already oriented toward enabling the imaginations of researchers and participants. Narrative approaches, for example, rely on holistic and heuristic properties that invite interpretation, variation, collective creativity, sense making, and imagination [34]. [35], in describing the design method of « imagineering », one form of a narrative approach, explicitly differentiates the logicoscientific reasoning in research from what she calls the « narrative mode ». According to the author, scientific reasoning pursues an « objective » approach to understand phenomena, whereas the narrative mode tries to understand in terms of human experience and purpose. The narrative approaches to research, which are pretty much aligned with the imagineering approach, are not focused on convincing through use of objective truth but through the use of imagination to appeal to and create a compelling narrative that empowers new realities. « Designing in the narrative mode engages people in a subjective, future oriented and creative way » [35].

Imagination in research is meant to offer new intelligibilities and creatively construct new realities. When embracing imagination in research, we move toward forming new futures; therefore, we want to stimulate people to imagine their needs and wants. In this direction, other expressions of language are needed in order to explore such imagination [36]. Narratives, social poetics, images, and videos can be used to produce new knowledge and expression.

I.3.5. Key Performance Indicators

Key Performance Indicators (KPIs) are the indicators that businesses and industry use to monitor performance in accordance with established criteria. When adopting innovation, defining Key Performance Indicators (KPIs) is an essential tool for making sure that all process goals are met. The level of innovation is critical to a country's or company's competitive advantage, and innovation can be measured in a variety of ways.

The capacity for innovation serves as a foundation for such skill. Key performance indicators (KPIs) refer to the quantitative measurements that companies set up To be able to measure their activities and their results in comparison to the predetermined standards. Such performance indicators are used to overlook the overall long term performance of an enterprise [37]. KPIs are also referred to as Key Success Indicators (KSIs) because they measure the overall success of an enterprise as per the standards and pre-defined goals. Such KPIs are crucial froman organization belief to ensure that all the process and strategic objectives are timely met.

KPI’s are measures or shows that are used to measure the success of an activity or event. Such KPI’s are crucial for innovation and its related activities in order to measure its success, failure or impact that it provides on the organization and its overall working. KPIs give useful insights into the success of innovation projects, processes, and outcomes. They assist organizations in assessing their ability to innovate, identifying areas for development, and making data-driven choices.

Key Performance Indicators (KPIs) provide a way to measure and monitor performance and can be used to identify areas where improvements are needed [38]. The use of KPIs is not

new, it has been a longstanding practice in management for many years [39]. However, with the increasing complexity and uncertainty of business environments, the importance of using relevant KPIs has become more critical than before [40].

According to Kerzner [41], a KPI is a measurable metric that can vary across different projects and throughout the project lifecycle. Kerzner [41] deconstructs the term KPI into three components:

- **Key:** a metric that is crucial to the success or failure of the project and has the potential to significantly impact the outcome.
- **Performance:** a measurable metric that can be controlled and adjusted to improve performance.
- **Indicator:** a reasonable representation of current and future performance.

Similarly, Eckerson [42] defines KPIs as metrics that measure performance in operational, tactical, or strategic activities critical to current and future success. Bauer [43] adds that KPIs reflect an organization's performance in achieving its goals and serve as indicators of strategic value drivers. Velimirović [44] notes that KPIs serve to remove subjective emotions from the business and concentrate on the primary goal of profitability. Moreover, Velimirović [44] also emphasizes that KPIs have a developing and guiding function that serves as the basis for formulating and executing an organization's strategy, and a motivation function that inspires management to pursue goals and motivates all stakeholders to achieve these goals, even at an elevated level.

The selection of appropriate KPIs for the measurement in the context of innovation is more complex since innovation is challenging to measure [45]. In innovative contexts, soft indicators can be considered to be more relevant than hard indicators, even though they can be challenging to quantify [46]. According to Griffin and Page [47], the most innovative companies prioritize metrics that reflect recent and future growth, whereas less innovative companies concentrate on efficiency-oriented metrics. Similarly, Hitt et al. [48] highlight that innovative companies place greater emphasis on strategic controls than on financial metrics. This observation is supported by Storey and Kelly [49], who argue that innovative firms tend to prioritize soft indicators, while less innovative companies tend to focus on financial metrics. However, a challenge connected to the soft indicators is that they tend to be given lower priority by the management as they are less tangible than concrete outputs from the company's main business.

To address the challenges with soft KPIs, Popova and Sharpanskykh [50] suggest that it is often helpful to identify one or more closely related hard indicators that can be measured to provide insights into the state of the soft indicator. For example, customer satisfaction is a critical soft indicator that is difficult to assess. However, it may be possible to measure it accurately through well-designed questionnaires, a combination of other indicators, such as the percentage of returning customers, the percentage of on-time deliveries, or the number of complaints.

I.3.6. Intellectual property

Intellectual property (IP) refers to intangible creations of the human intellect (inventions, literary and artistic works, designs, symbols, names, and images used in commerce, etc) and may be protected by law [51].

IP rights (IPRs) provide the legal framework by granting exclusive rights for a specified period, allowing creators to safeguard their ideas and creations from unauthorized use or reproduction. Another important feature of the IPRs is that they are territorial rights, meaning that they are valid only in the jurisdiction/s where they have been registered (or otherwise acquired) [52].

IPRs can be divided into several categories: copyright, trademarks, geographical indications (GI), industrial designs, patents, and trade secrets [52].

Patentability criteria

A patent is granted when the application satisfies the patentability criteria, as defined in national (or regional) patent legislation. According to Article 27 of the TRIPS Agreement, all national laws must require that a patent application meet these three criteria [53]:

- **Novelty:** the invention must be new, in the sense that it is not part of the current state of the art of the technical field or technology in question; the state of the art includes everything which, prior to the filing date, was available to the public, nationally or internationally, through description, use or in any other way.
- **Inventive step (non-obviousness):** the invention must not be obvious to a "person skilled in the art" (a person trained and experienced in the field or technology in question) in the light of the current state of the art; and
- **Industrial applicability (utility):** the invention must be capable of being manufactured or used industrially in some other way, since the aim of patent law is to protect technical solutions to a given problem, not abstract knowledge.

The way in which patentability criteria are applied has changed over time and from country to country, depending on how governments have determined the appropriate balance between public and private interests. Although the WTO TRIPS Agreement defines patentability criteria, it does not provide specific guidance or definitions on how these criteria should be interpreted or applied at national level. WTO members therefore retain the option of defining and applying the criteria as best suits the public interest. In this context, the definition and interpretation of the three patentability criteria is probably the most important flexibility contained in the TRIPS Agreement.

IPRs are therefore part of the non-physical property of a business [52]:

- One of the most famous and important ones is the **patent/utility model** (the latter is not available in every country), which is an exclusive right granted for an invention - which is a product or a process – that either provides a new way of doing something or offers a new technical solution to a problem. The patent owner has the exclusive

right to prevent or stop others from commercially exploiting the patented invention (generally for 20/10 years).

- Another IPR is **the trademark**, which is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises - and whether registered - it confers an exclusive right to the use of the registered trademark (for 10 years, renewable indefinitely). The sign could be a word or a combination of words, letters, numerals or drawings, symbols, and non-visible signs (i.e., sounds or fragrances) among others.
- Differently, **design** protection refers to the ornamental aspect of an article: it may consist of three-dimensional features, such as the shape of an article, or two-dimensional features, such as patterns, lines or colors.
- A **copyright** (or author's right) represents instead the rights that creators have over their literary and artistic works such as books, music, paintings, sculpture, movies, computer programs, databases, advertisements, maps, and technical drawings. In the end, a rising topic is the protection of software: it refers to the protection of information stored on hardware and used by computer systems to execute several operations, and it includes the protection of algorithms, program codes and graphical interfaces.
- **A trade secret** is a type of IP that encompasses confidential, proprietary information (such as manufacturing processes, formulas, techniques, customer lists, marketing strategies, software algorithms, data and more) that provides a business with a competitive advantage over others in the industry. Unlike patents, copyrights, or trademarks, trade secrets rely on maintaining their secrecy. To qualify as a trade secret, the information must meet certain criteria:
  - **Confidentiality:** The information must not be generally known or readily accessible to the public or competitors.
  - **Economic Value:** The information should have economic value specifically because it's not known to others and provides a competitive advantage.
  - **Reasonable Efforts:** The owner of the trade secret must take reasonable steps to keep the information confidential through measures like non-disclosure agreements, access controls, and employee training.

Why is intellectual property important for SMEs?

In general, IP promotes economic, social, and cultural progress by stimulating creative work and technological innovation. The theft of intellectual property causes serious harm to international trade, promoting a climate of uncertainty that puts the most innovative companies at risk.

For small and medium-sized enterprises (SMEs) IP is a key asset for several reasons:

- A proper IP strategy can help to enhance market growth and support competitiveness.

- The protection is crucial to prevent loss of market share (generated by the loss of revenue) and reputational damages.
- In the case of patents, industrial design and trade secrets, the rationale is to guarantee the protection of the results of investment in research and development of new technologies, thus giving the incentive and means to finance these kinds of activities.
- Protecting own intellectual assets can reduce risks arising from potential legal disputes, which are often burdensome for the companies both in terms of economic expenses and timing.

The figure I.3 illustrates the different phases of the intellectual property management process (external circle) and the intellectual property rights and related activities (inner part).

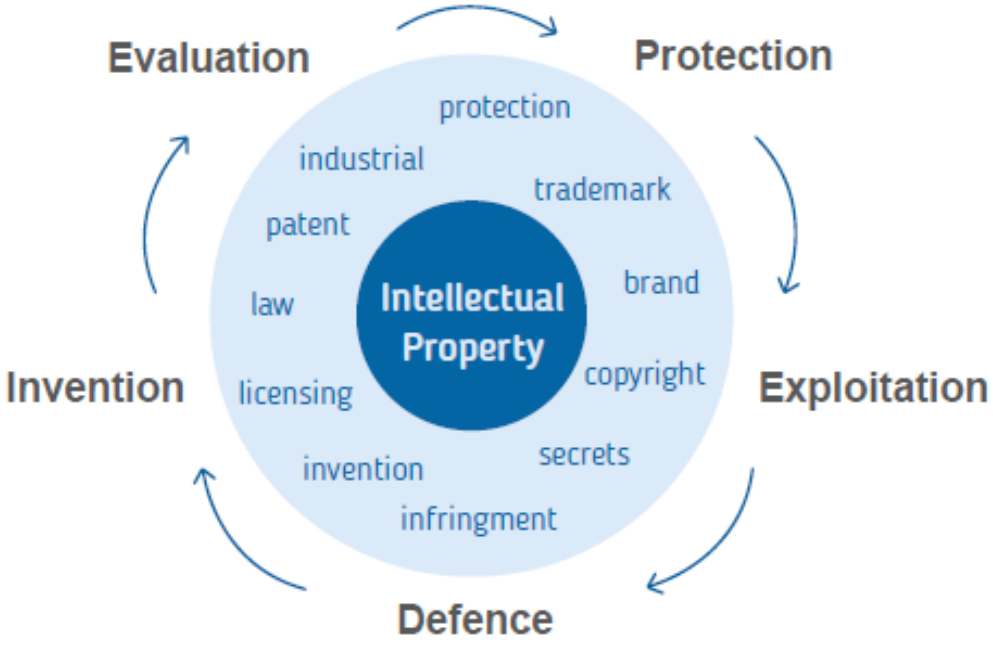

Fig. I.3. The different phases of the intellectual property management process (external circle) and the intellectual property rights and related activities (inner part) [54].

I.3.7. Agile methodologies

Agile is a project management methodology designed to improve the speed, productivity, adaptability and responsiveness of the creative process, both internally and externally. Rooted in the world of IT development, it is suitable for countless processes, but differs slightly in its application to creative tasks [55].

In contrast to the traditional top-down or linear approach to project management, whereby the various stages of a project must be completed one after the other, Agile methodology offers a more modern and flexible team-based management approach, emphasizing the rapid delivery of sub-components of a project rather than its overall completion in a single go [55].

As an example, the traditional model for a website redesign is as follows: mapping the entire project, writing all content for all pages, finalizing the design, then uploading the new

design and content. With Agile methodology, the process is divided into sprints, i.e. two-week periods during which certain components of the project are rapidly completed [55].

In the case of a new website, the first sprint may simply be devoted to designing the menu template and writing the home page content.

Once completed, these two components are loaded immediately. While working on the next sprint, the team gathers feedback from the client company. If the customer feels that the home page menu lacks intuitiveness, the team makes the necessary changes immediately.

Thanks to this ability to change course during the course of a project, rather than waiting until all the components have been finalized, Agile creation teams gain in productivity, collaborate better and manage to speed up launches [55].

The idea is not to work faster, but more efficiently. That's why this approach is increasingly appealing to the creative community.

The idea is not to work faster, but more efficiently.

I.3.8. The importance of teamwork, coworking and motivation

I.3.8.1. Teamwork

According to Chukwudi [56], teamwork was earlier studied as employees combine their efforts to achieve a common objective by keeping in view the interest of the overall group instead of individual interests, and a team is formed when individuals with a common goal come together on a common platform Gupta, [57]. Jones et al [58] narrated that the impact of teamwork on employees‟ occupational performance has been a major research topic done by many academicians and practitioners in the previous years, therefore, understanding the impact of teamwork on performance is very important because teamwork is viewed by some researchers as one of the key driving force for improving a firm‟s performance. Harris and Harris [59] saw teamwork as a workgroup with a common purpose through which members develop mutual relationships for the achievement of goals/ tasks. Murray and Stewart [60] defined a team as a group or collection of people who interact to achieve a common goal. Hanaysha [61] stated that teamwork is commonly considered as a group of people eager to work together to accomplish a mutual objective.

Robbins and Judge [62] viewed teamwork as a group of employees whose individual efforts result in a performance that is greater than the sum of their individual inputs. Milliman et al. [63] claimed that employee teamwork comprises of individuals who have different tasks and duties and who share their work for better organizational productivity. Scarnati [64] observed that teamwork is a cooperative process that allows ordinary people to achieve extraordinary results. Mulika [65] asserted that teamwork is a precise organizational measure that shows many different features in all type of organizations including non-profit According to Keller [49] teamwork refers to a group of individuals who work interdependently to solve problems or carry out tasks. Kline defined teamwork as a group within the organization which is established and maintained in order to complete a common task. Sommer et al [66] argued that teamwork is a core activity in the workplace, involving two or more individuals who

coordinate each other's effort towards accomplishing desirable outcomes, and according to Kozlowski and Klein [67] teamwork operates in a multilevel system comprising both workplace-level elements such as the performance objectives set for the team and individual-level factors such as team members' direct experiences of the work process. Mc Shane and Von Glinow [68] insisted that to work effectively in a team employees must have more than technical skills to perform their own work and the common include cooperating, coordinating, communicating, comforting and conflict resolving.

I.3.8.2. Coworking

The history of the term coworking started with Bernard De Koven in 1999, who was the first person that proposed the term « coworking » [69]. His definition of coworking was « the cooperation and the sharing of the workspace between individuals working independently given mutual relationships formed on the basis of either spontaneous or moderated processes within a temporary-set or a permanent collaborative workspace » [69]. In 2005, the concept of coworking was developed further by Brad Neuberg (see Fig. I.4). Although the origin of the term has not been researched, Neuberg is generally regarded as the first person that developed a coworking space [70]. After this first development, the amount of coworking spaces increased rapidly to over 700 coworking space locations over the world in 2006 [71].

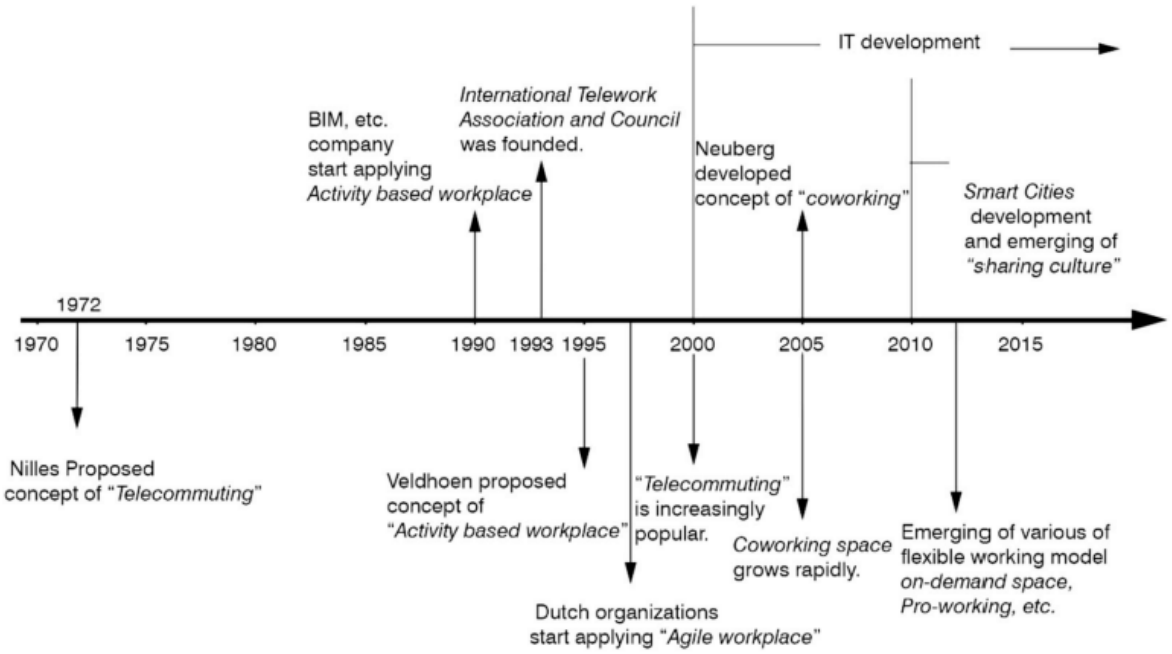

Fig. I.4. Historical evolution of FWM [71].

Characteristics of coworking spaces can be classified along six dimensions: coworking users, social intensity, institution of the coworking-space provider, physical assets, availability and professional focus and competition [72]. These dimensions of coworking spaces can provide potential users information on what coworking spaces generally have to offer and will help making well informed decisions whether to implement coworking.

I.3.8.3. Motivation

According to Webster's New Collegiate Dictionary, a motive is « Something (a need or desire) that causes a person to act ». Motivate, in turn, means « to provide with a motive », and motivation is defined as « the act or process of motivating ». Thus, motivation is the act or process of providing a motive that causes a person to take some action. In most cases motivation comes from some need that leads to behavior that results in some type of reward when the need is fulfilled [73].

I.3.9. Doubt management

Doubt management as a tool for change. The change manager, often referred to as a change agent, is a common trope in the change management literature [74-77]. The change manager is however not easily described as a stable uniform figure, as the image of the change manager is constantly changing. Some common notions and historical developments can be gathered though.

Classically, the role of the change manager was associated with the function of bridging the communication between one social system and another [78]. Lewin [79] used the term « gatekeeper » to refer to the person who channels a novel element into a social system from the outside, a heuristic concept encouraging asking the question, Who determines what goes into a social system? Developed in the context of food habit interventions in American families during the second world war, this was an important consideration. Today, the most common notion of the famous change management scholar, John Kotter's [80] dramatic narrative of change management, in which the leadership component of change management is emphasized. Different perspectives on what organizational change means can be identified across the literature [81], and Kotter writes from a perspective of organizational change as episodic events predominantly led by top down processes. According to Kotter [75], significant organizational change only manifest if the company is ready to replace its managers with 'real leaders,' understood as managers who are capable of promoting and steering the change to success. Real leaders, he writes, do not shy away from making daring decisions. They form coalitions within the organization to bolster the change initiative. The real leader is decisive and makes change happen in the face of complacency. In Kotter's narrative organizational change is generally framed as dangerous and unpredictable, and the organization will tend to resist its realization. A remedy exists though, as the « the carnage » [80]. Resulting from badly led organizational changes can be avoided if the change manager follows Kotter's 7-step model. This narrative on the change manager has been written in a form that both presents organizational change in a certain way, while also supplying a prescriptive text to the change manager telling how to plan and lead the organizational change to success.

Generally, the change manager is often described as one who leads the change by attending to the meaning making and the emotions revolving around the change [74, 82, 80]. Thus, organizational change is not merely managed, the literature insists, but is led by charismatic and engaging individuals who are able to break the organizational inertia. Kotter's [80] famed encouragement for the change manager to create « a sense of urgency » by establishing a burning platform, an analogy to Lewin's notion of an « emotional stir up » [79],

has traveled through the change management world and has often been used as a guiding metaphor for mobilizing organizational change. Over the years, change management literature gradually shifted its focus on emotions though, as it began developing softer connotations. Rather than merely stirring things up, the change manager was also expected to enact a sort ofemotional caretaker [83]. This meant that the change manager had to learn to recognize different types of emotional responses and act accordingly to prevent negative emotions from interfering with the organizational change [84, 77, 85]. Change managers were now expected to be solution-oriented rather than problem-oriented to lubricate the change process [86]. Also Kotter joined this turn towards softer change management in his later writings, as he reformulated his encouragement, noting that it was not about scarring people with 'a burning platform' but to motivate them authentically by establishing a « burning desire » [87]. Note that there is some historical circularity here. This softer version of change management resonated well with the classical change management literature, which advocated democratic and participatory methods for managing organizational change, a counterargument against Tayloristic management [88-91]. In a similar fashion, the softer change management arose as a counter argument against fear driven top down change management approaches.

As noted, besides debating on hard versus soft approaches to organizational change, change management literature also discusses the different types of changes and their implications for the ideal change manager. Although the common notion of organizational as episodic and abnormal events stands strong [80] counter-narratives exists. Through the writings of notable change management scholars such as Weick [91], the notion « that change is continuous » has been brewing for decades. It would come to be used to challenge Kotter's [80] narrative by its highlighting of organizations' inherent instability. Rather than destabilizing the organization, change managers should consider how to stabilize it, and steer the inherent continuous changes in a desirable direction. Nested in such arguments, continuously changing organizations was promoted as a better framework for evaluating and describing organizational change [92]. Further, it has been pointed out that the sheer complexity of organizational change makes it an illusion to assume that it can be steered in any meaningful way by an individual change manager [93].

Regardless of the theoretical positioning of change management, the change manager has developed into somewhat of a mythical figure in the common notions of change management—a messiah who transforms and converts the organization for the better [94]. The consultancy industry has proven ready to exploit this narrative of change management to increase their sales of change management education. McKinsey & Company for instance tell their clients that « The role of the change agent is among the most important, and difficult, in any lean-management transformation » and stresses that this person should have both know-how and charisma to succeed [95]. Further, they stress that the 'poaching' that the change agent is subjected to brings about a need for ongoing professional development. They write that the change manager needs « An explicit learning ladder with a detailed program » [95]. Following this kind of thinking, a true change manager is not just a trait of the personality; it is something aperson becomes through adequate guidance, education, and experience. Or pushed further in the rhetoric of leadership development literature, the true change manager is 'discovered' in the self through « reflection » [96].

Yet, locating and pinning down the nature of the good change manager competency is a slippery task. The tendency of abstracting organizational change, as if a uniform phenomenon risk reducing practitioners' and academics' sensitivity to the specifics of actual organizational changes [97] and tend to give rise to generalized misconceptions on what change managers, and managers in general, actually do [98, 99]. Considering such cautionary reminders, it only seems more relevant to inquire into the tools that participate establishing, challenging and reaffirming the common notions on change management.

I.3.10. Technology Readiness Levels

The Technology Readiness Levels (TRL) were created by NASA [100] and later improved [101], as a way to measure how ready a certain technology is in order to decide if that technology should or should not be used in space missions and systems. Later on, other government agencies such as DoD (Department of Defense) and DoE (Department of Energy) started to use the method, and more recently some private companies are looking to adapt and implement the method to their technology management processes. To put it in simple words, the main reason why it is an issue to determine technology readiness is because if the organization fails to do so, it will certainly lose time and money. Choosing the wrong technologies to invest in and inserting not-ready-enough technologies into new products or systems will definitely result in budget and schedule overruns, plus additional work to be done and possibly a considerable amount of damage to the organization`s image and reputation. According to [102], quality issues and failing to identify a technology`s readiness accurately are among the main reasons that cause cost overruns. Moreover, according to [103], a well-performed technology assessment is key to avoid problems with cost, schedule and performance goals.

The TRL is a scale from 1 to 9 that measures to what extent a technology is ready to be applied. In its original form, the scale was created with the aerospace industry in mind (Table I.1), but now there are other versions of the scale, tailored for a variety of different industries/sectors.

There are not plenty of metrics and tools developed to measure how ready a technology is. The most popular method is the Technology Readiness Level (TRL), a scale developed by NASA to help them assess the technologies they were considering to include into systems for space missions. The TRL is a nine-point scale that ranges from the very basic ideas (level 1) up to mission-proven technologies (level 9) – Table I.1. The scale has been gaining popularity and is being acknowledged as the main method to measure a technology readiness, a standard way to inform organizations over their developing technologies [104-109]. Moreover, TRLs are proven to be beneficial in managing a technology portfolio and choosing technologies to invest in [110-114].

Table. I.1 : TRL definitions by NASA, adapted from [115].

TRL	*TRL Definition*
1	*Basic principales observed and reported*
2	*Technology concept and/or application formulated*
3	*Analytical and experimental critical function and/or characteristics proof of concept*
4	*Component and/or breadboard validation in laboratory environment*
5	*Component and/or breadboard validation in relevant environment*
6	*System/subsystem model demonstration in relevant environment*
7	*System prototype demonstration in relevant environment*
8	*Actual system completed and qualified through test and demonstration*
9	*Actual system proven through successful mission operations*

In order to use the method, one should analyze the characteristics of the technology being assessed and compare it with the definitions contained in the scale – thus finding the technology readiness level of that particular technology. The result would be a snapshot in time of the degree of development concerning that specific technology, and decisions could be made based on this information.

TRL`s were born at NASA around 40 years ago, when scientists from the space agency realized they needed a way to assess and compare technological developments prior to deciding which technologies to insert in space mission systems. The first version of the scale had only seven levels [100], see Table I.2. Later on, the first version was improved, when the eight and ninth levels were included [115].

Table. I.2. First version of the TRL scale, adapted from [100].

TRL	*TRL Definition*
1	*Basic principales observed and reported*
2	*Potential application validated*
3	*Proof-o-f concept demonstrated analytically and/or experimentally*
4	*Component and/or breadboard laboratory validated*
5	*Component and/or breadboard validated in simulated or real-space environment*
6	*System adequacy validated in simulated environment*
7	*System adequacy validated in space*

After being confined within NASA for an initial period, the method was ‘discovered’ by other federal agencies, andultimately it started to be adopted by companies. The NASA scale was not, however, perfectly replicable for all other companies and institutions that were willing

to have a technology readiness measurement. NASA introduced the scale and all the concepts around it were developed with the aircraft/aerospace industry in mind. Moreover, it had also been primarily thought to measure hardware technology readiness (any technology involving manufacturing processes). Soon, the basic question for other organizations was: how to adapt the scale to our specific needs?

The Department of Defense (DoD) and the Department of Energy (DoE) have made some modifications to the levels definitions in order to reflect their own applications/requirements [116, 117], – see (Fig. I.5 and Table I.3) below. As explained in [118], « …the basic idea associated with these other applications and uses remains the same as in Mankins' TRL scale ».

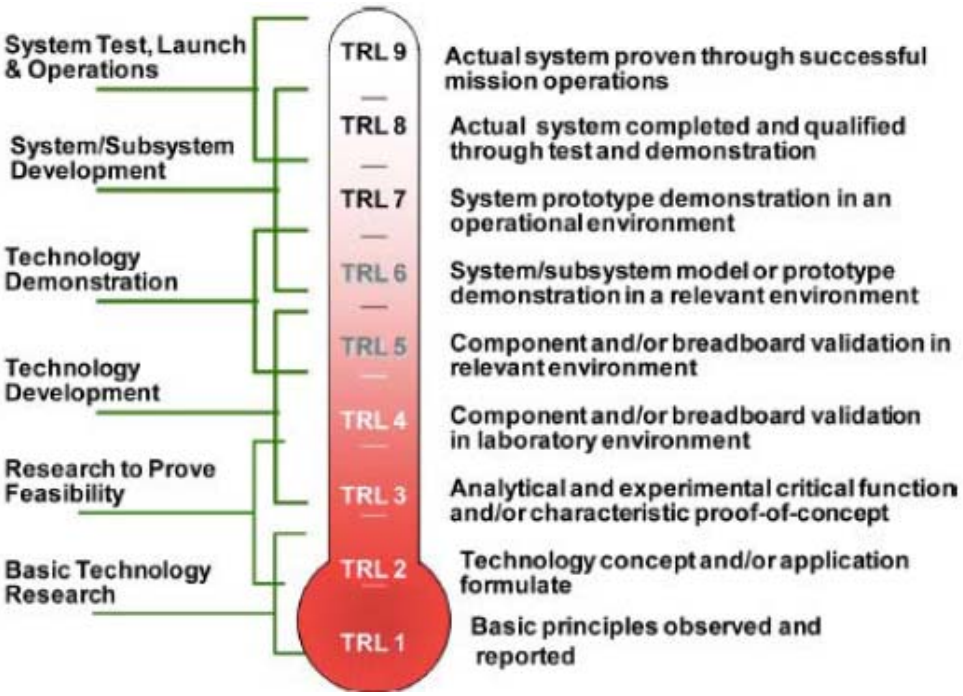

Fig. I.5. TRL Definitions for DoD [116].

Table I.3 : TRL Definitions for DoE [117].

Relative Level of Technology Development	*TRL*	*TRL Definition*
Basic Technology research	1	*Basic principales observed and reported*
	2	*Technology concept and/or application formulated*
Research to prove feasibility	3	*Analytical and experimental critical function and/or characteristics proof of concept*
Technology Development	4	*Component and/or system validation in laboratory environment*
	5	*Laboratory scale, similar system validation in relevant environment*
Technology demonstration	6	*Engineering/pilor scale, similar (prototypical) system validation in relevant environment*
System comissioning	7	*Full-scale, similar (prototypical) system demonstrated in relevant environment*
	8	*Actual system completed and qualified through test and demonstration*
System operations	9	*Actual system operated over the full range of expected conditions*

Private companies are acknowledging the usefulness of TRLs as they start to implement the method, but unlike many managerial innovations, TRL`s were born, tested and evolved in the public sector, e.g. NASA and DoD. Due to the nature of these agencies (non-profit and oriented towards breakthrough technological innovations), in most cases the technological development occurs within the 'product development' process, i.e. the system/product is envisioned counting on technologies yet to be developed/matured, and investments are made even though these technologies have not yet proven to be ready. Conversely, in the private sector, organizations usually wait until a technology is mature in order to consider it for a product/system, so that they lower the risks of a new product development project. Thus, for private firms, the notcompletely mature technologies would be blocked at the beginning of the innovation funnel, giving way to proven and functioning ones. Nevertheless, the accelerated pace in which high technology firms compete nowadays might have forced them to start considering less mature technologies for new products/processes. Furthermore, using TRL`s can potentially bring other benefits rather than just providing a snapshot of the development stage of a technology.

The method, however useful and innovative, also presents some shortcomings and limitations. As its popularity grows, the willingness for scholars to study it grows as well, and some of its downsides start to surface. Some of these downsides are listed and defined in [119, 120]. The lack of objectivity is one of the most notorious downsides. Once all the analysis relies on subjective observations and no quantitative aspects are involved, subjectivity is pointed as a weakness, as in [121].

Researchers also note that TRLs are effective for measuring a single technology readiness, but most of the technologies work integrated with other technologies. This integration assessment is also considered one of the major weaknesses, as mentioned in [122]. As aforementioned, TRLs provide a frozen image representation of the technological development stage. This, for some researchers, such as [103], is a shortcoming because the method fails to measure and communicate how difficult a further development will be, e.g. how difficult it is to bring technology A from TRL 'x' to TRL 'y'. Another commonly pointed weakness is the generality of the scale definitions. As the scale was conceived to serve as many different technologies as possible, there is a lack of accurate definitions on the scale, which can pose some challenges for practitioners, as stated in [123]. Other downsides identified in the literature are the lack of a standard implementation process [124], the lack of a comparative analysis of different technologies TRLs [125], the problem of 'updating' the TRL once the technology is obsolete [126], how to deal with the TRL when a new component is added to the technology or when a new application is tested [127], the lack of a system-based assessment (derives from the integration weakness) [128], the problem of applying TRLs for non-hardware technologies [129], and the lack of the assessment of the technology`s criticality to its system or program [130].

Although challenges and downsides seem to be plentiful, researchers also started to address some of these weak points. Some new methods and complementary tools are being studied and developed in order to tackle and mitigate TRLs weaknesses. In [125], Sauser presents the basic concept of its System Readiness Level (SRL) – a new metric, derived from

TRL, which aims to deal with the system and integration downsides. A few years later, Sauser improves SRL and presents its final version along with another nine-point scale called Integration Readiness Level (IRL) [122]. In 1998, John Mankins developed a new metric called Research and Development Degree of Difficulty (R&D3) [131], which attempts to alleviate one of the most recurrently mentioned flaws of TRL-the inability to assess/forecast the hardshipsone will encounter should one chooses to continue the development of a technology. Other metrics created by Sauser is the Integrated Technology Index (ITI) and Integration Maturity Metric (IMM) [132]. Some of these metrics are further explained in [133, 134] and combined in [135]. Although advancements have been made since the introduction of these tools, there are still several problematic points to be tackled when it comes to dealing with TRL's weaknesses, as evidenced in [136-139].

I.3.11. Sustainable innovation

Innovations acquainted with sustainability incorporate economic, social and environmental carefulness into the consumption and production patterns of society and the business. Research has indicated that the emphasis on sustainability is removing or reducing the unfavorable effects of manufacturing or operation activities to generate comprehensive changes that are suitable and beneficial to society and the environment [140]. Sustainable innovation requires intense cooperation of R&D and organizations aiming to pursue sustainable innovation get benefitted by engaging groups and external stakeholders who can influence the objectives of the company. Traditional innovations have become a thing of the past and companies aiming to extend their businesses and attract more consumers opt for sustainable innovations. Usually, sustainable innovations are inherent, intricate, and have a multistakeholder emphasis and therefore mandate a specific extent of acute cooperation and exterior process. The relationships of the stakeholders assist in dilating the coverage of the firm's external search for innovation while decreasing its search expenditures [141].

Research on sustainable innovation revealed that famous brands like BMW moved from regulators, infrastructure planners and mayors of one country to another to monitor futureoriented and sustainable concepts [142]. This means that all the efforts to come up with sustainable solutions are made to satisfy the consumers, the core asset of any business. The ability of businesses to adopt sustainability depends on their internal capabilities and the approaches they adopt to make their products functional. To make the innovation process it is essential for a business to incorporate the knowledge and expert power of stakeholders. In the past, social and environmental issues were considered factors that pressurized firms to make their operations better but now social and ecological problems are regarded as the source of motivation for transforming the business models, services and products [143]. This latest perspective of businesses is showing sustainability challenges as opportunities paving the path to success for them.

Sustainable innovation conceptualizations vary from philosophies concentrating on ecological progress, marked as green innovation concerning the product or eco-innovation, regarding sustainability as the sum of all three essential and bottom-line entities-economic, social, and ecological-throughout the life-cycle of the product [144]. All these three entities are crucial to attaining a win-win situation which from a business perspective is scalability and that

aids sustainable products to pull market share out from orthodox products and to generate favorable societal impact. Simply, sustainable innovation is an effort through which firms reduce the negative influence of their operations on the natural environment. This does not just help in spreading a positive message to competitors of the same sector but it also preserves the environment and coming generations.

Some innovations aim to make improvements in the territory of the renewable resources, others alleviate unsustainability in the empire of the nonrenewable resource and yet other innovations play the role of both unsustainability and sustainability in the nonrenewable and renewable resource domains [145]. The conception of sustainable innovation has greatly modified the consumer preferences which compelled businesses to utilize their major marketing capabilities and connect them with sustainable innovation and produce a product that captures immense profit and customers. For designing such offerings, companies surely need environmental experts in their product team so that they follow the right process to generate meaningful and eco-friendly products. Businesses for quite a long period were of the view that the implication of sustainable innovation is expensive, has a long restitution time and benefits the environment at a smaller level [146].

Despite negative and unfavorable suppositions in the past, recent research disclosed that sustainable innovation improves the ability of the firm to compete with its rivals, enhances organizational efficiency and draws intensified profit [147]. Organizational experts believe that innovation transforms the organization and that usually happens as a reaction to the external or internal environment or as a preemptive measure to exploit an atmosphere. When the term sustainability is placed with innovation then the meaning accumulates in scope and merges present and future generations and the eco-friendly approaches through which both will meet their necessities [148]. Companies in this current era try to execute activities that intend to solve social and environmental issues in a profitable and strategic manner.

Usually, past researchers limited the scope of sustainable innovation by only associating it with innovation aimed to improve the environment which made it a one-dimensional phenomenon [149]. However, modern research embedded economical and social concepts in sustainable innovation and made it a broader notion. Sustainable innovation is nothing when the social pillar or economical pillar is not considered in it. It does not mean that businesses can consider social aspects in one process and another they will consider the economic aspect, anorganization must regard and consider all three aspects simultaneously and profitable to retain and sustain their business [150]. To ensure their survival in the market and to develop positive perceptions in the consumer mind, businesses innovate their products or processes.

I.4. Invention and innovation

Following Schumpeter [151], for whom there was on the one hand the production of knowledge (made freely available to interested companies), and on the other hand the transformation of this knowledge by companies, the literature is unanimous in differentiating invention and innovation, two notions that are too often confused in everyday language.

Morvan [152] radically separates invention, which is a « production of new scientific knowledge, whether primary (new scientific concept), secondary (practical use creating a new

use in the range of products or the field of processes), or tertiary (improvement), considered as exogenous to the economic space', from innovation 'which is situated in the economic space ». In the purest Schumpeterian tradition, [153] clearly shows, using the emblematic example of the laser, that what differentiates invention from innovation is the intervention of the entrepreneur: 'Invention is an advance in knowledge, and as soon as the experiment has worked in the laboratory, there is success. Innovation is a more complex, interactive process, each stage of which requires specific skills.

We too have adopted this distinction between invention and innovation: it is the company that attributes an economic utility to the invention and that mobilizes the resources needed to go from the laboratory result to a new product or process. If the entrepreneur does not intervene, or if he fails, there may be invention without there being innovation for all that.

I.5. The importance of innovation

Faced with increasingly fierce competition and constantly changing markets, innovation is an essential lever for the development and long-term survival of businesses. Not only does it enable companies to stand out from the crowd, it also enables them to anticipate future consumer needs and respond effectively to current environmental and social challenges. Companies that integrate innovation into their overall strategy enjoy a significant competitive advantage, enabling them to increase their market share and generate sustainable growth. Investing in innovation is therefore essential for any company aspiring to successful expansion and long-term recognition [154].

I.6. The strategic importance of innovation

As part of the company's overall strategy, the innovation strategy defines the company's path to achieving its objectives by allocating the necessary resources and identifying the appropriate techniques and tools [155]. One of the reasons for innovation failure is the launch of products and services that do not match the company's competencies. The importance of innovation for a company is reflected in the fact that it enables it to:

I.6.1. Seizing opportunities in the environment

Drucker identified seven sources of opportunity in the business environment. These sources could constitute starting points for innovation and the launch of continuously innovative products and services [156]. Transforming these opportunities into innovation should enable companies to build real strategic advantages. Indeed, a company's competitiveness depends on its ability to launch new products and react more quickly than its competitors. Developing new products is an extremely important opportunity in a constantly changing market. In most OECD countries, 5 to 7% of company sales come from new products.

I.6.2. Increasing efficiency and improving performance

Several studies highlight the link between a company's results and its capacity for innovation. The global ranking of companies that invest in innovation highlights the strong correlation between innovation and sales growth. Companies whose 40% of sales come from products launched less than three years ago have experienced above-average growth rates. In

the United States, 86% of companies consider innovation capability to be one of their managerial priorities and innovation to be one of the main areas for improvement.

I.6.3. Creating and strengthening competitive advantage

A company can innovate to defend its competitive position, but also to establish its competitive advantage. Innovation can be a kind of reaction to prevent others from taking market share. It can also be the result of a proactive philosophy, to achieve a strategic market position through the technical development of its products [157]. In this respect, innovation strategy is the cornerstone of a company's overall competitive strategy and one of the most important ways of dealing with the strongest competitors [158].

Finally, although the current state of knowledge agrees on the strategic importance of innovation, it is generally limited to a subjective description of the processes and activities linked to innovation, without providing empirically justified results on the paths to follow to complete an innovation project. The models designed for innovation management are often specific to the environments in which they were developed, which makes them difficult to reproduce or standardize.

I.7. Different types of innovation

Innovation results from the interaction of internal and external components. The internal components are the company's knowledge: its know-how, its research and development capabilities, and, of course, the financial realities specific to its structure. The external components include the elements that help to trigger innovation from outside the company: customers, suppliers, and consultants through the use of open-lab innovation platforms. There are four types of innovation: incremental innovation, adjacent innovation, disruptive innovation, and radical innovation.

Incremental innovation and disruptive innovation are linked to technological advances, and adjacent innovation and radical innovation to market development. It is important for a company to choose the right type of innovation or to combine the two, as this choice will be decisive for its development. This decision can propel a company forward, stabilize it or make it disappear.

I.7.1. Incremental innovation

Incremental innovation, or continuous innovation, is the most widespread. It consists of improving a product or service already present in a mature market by optimizing its performance or use. This type of innovation takes place in stages. These changes are made gradually and are the result of technological innovation.

Examples of incremental innovation (Fig. I.6) include the automotive industry, where different versions of the same model arrive on the market one after the other, and the smartphone market, where Apple and Samsung manage product life cycles and keep their community of users on their toes with each new product launch.

a) Automotive industry.

b) Smartphone.

Fig. I.6. Incremental innovations [159].

I.7.2. Adjacent innovation

Adjacent or competitive innovation is one of the most widely used strategies for extending the life of a product, service, or market. There are two cases:

- The company integrates an existing product or technology from another market into its product while remaining in the same market. This is known as adjacent product innovation.
- By staying within its area of expertise, the company launches an existing product but gives it a new use, thereby creating a new market. This is known as adjacent market innovation.

One example of adjacent innovation (Fig. I.7) is Uber, which launched its application for city transport. This service already existed for taxis and Uber simply adapted it to its market and the example of 3M (Minnesota Mining Manufacturing).

a) Uber.

b) 3M's post-it note.

Fig. I.7. Adjacent innovations [159].

I.7.3. Disruptive innovation

Disruptive innovation favors access to a certain product or service to make it available to as many people as possible in terms of cost and use. It does not necessarily involve technological innovation.

In the short term, the aim of a company launching a disruptive innovation is to destabilize the competition and rapidly gain market share. In the medium and long term, the disruptive company aims for leadership in its sector of activity by acquiring a community of users committed to its cause.

One example of a disruptive innovation (Fig. I.8) is Free Mobile, which took a leading position in the French telephony market in 2012 by offering more attractive deals than its competitors, including an unlimited package for €20, thanks to limited network coverage. This innovation destabilized its rivals, SFR and Bouygues, who were already experiencing financial difficulties. It was the start of a price war. Competing operators such as SFR and Bouygues Télécom did not take kindly to this arrival on the market, but some of them counter-attacked by proposing competing offers with low-cost brands such as Sosh or Red. In the space of two years, Free's entry into this market has seen average prices fall by 30%.

Fig. I.8. Disruptive innovation examples [160].

I.7.4. Radical innovation

Radical innovation consists of marketing a completely new product and creating a new market that does not respond to any existing problems in society. This type of innovation creates new uses and new paradigms. It therefore generates a very high business risk, but companies that succeed in this type of innovation quickly become market leaders.

The world of music is a perfect illustration of this concept of radical innovation, with the various media on which people can listen to their favorite songs: audio cassettes, CDs, MP3 players, online platforms, etc.

I.8. Managing Innovation

The first step in making the most of innovation in your business is to recognize that it is an interdependent process that needs to be well-defined and effectively managed to generate meaningful and sustainable results. There are four key stages.

All four components (Fig. I.9) are important, but first, you need to ensure that you have effective procedures in place to continually generate new ideas for the business.

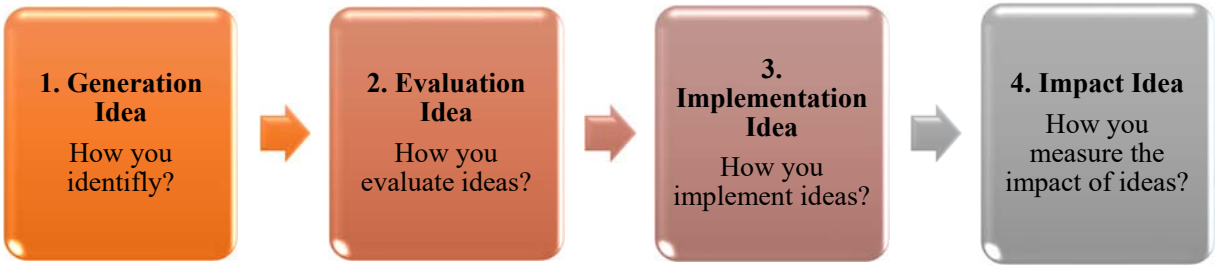

Fig. I.9. The components of an innovation process [161].

I.8.1. Generation idea

Naturally, the foundation of any significant innovation process lies in the number and quality of the ideas it generates, which means that both internal and external sources of ideas must be taken into account.

I.8.1.1. Internal sources

One of the potentially most valuable channels for new ideas can come from those who work in your business and you should do all you can to maximize their contribution to identifying new and better ways of doing things.

However, while this may be an obvious consideration, many businesses solicit ideas from employees in the wrong way and therefore see little long-term benefit in the ideas generated. With this in mind, you should think long and hard about this issue to ensure you don't make similar mistakes.

Many companies use the ‘suggestion box’ approach to gather ideas from employees. While this is undoubtedly a commonly applied method, it rarely works well, and certainly not in the long term. There are many reasons for this, but the following factors are important:

- If you think about it, the use of the suggestion box approach serves to separate the activity of idea generation from an employee's day-to-day working life; in other words, it subconsciously sends the message that offering ideas or suggestions is optional, or somehow beyond the scope of their normal roles and responsibilities.

- In addition, it draws an unwelcome distinction between "thinking″ and "doing″, whereby ideas are seen as something "extra″ that requires the design of a special box to capture them.

These are dangerous signals to send to your employees and you need to make it clear that idea generation is not an optional activity. Some of the most successful companies require their employees to come up with at least one new idea a month, no matter how small.

Another common approach to generating ideas from employees is to create an 'innovation team' or similar, made up of employees from across the business. While this approach tends to work better than the suggestion box model, it still sends the message that idea generation is the responsibility of the few, not the many. However, this approach works if it is well managed and when team members change frequently.

Flow idea

Perhaps a better approach is to embed the idea-generation process into everyday working life and make it a must-do activity rather than something that people feel they can choose or not choose at will. One way of doing this might be to introduce an idea generation section into existing meetings so that every month there is a flow of ideas through the organization. This could be structured as follows:

A new idea

Every manager or Head of Department (HoD) should meet with their employees at least once a month to discuss work-related issues. This is something that should already be happening in all companies, as it brings many benefits. To better integrate idea generation into daily life, part of this monthly meeting could be dedicated to collecting ideas from every employee in the department. Employees could be told to come to this meeting each month armed with a new idea, no matter how small. (They can come up with this idea individually or with other team members).

To target the nature of the ideas generated, employees could also be allowed to suggest ideas under one of the following four headings:

- Ideas that help improve sales or reduce costs.
- Ideas that help to better involve employees or improve teamwork.
- Ideas that help improve customer service experiences.
- Ideas that help improve operational efficiency.

These four headings cover the company's key activities and give employees plenty of scope to identify new ideas. When you really think about it, it's no exaggeration to ask employees to come up - individually or in small groups - with one new idea a month in one of the four areas above.

Applying this approach would make the idea generation process an integral part of what employees do, rather than a stand-alone activity.

Effective feedback

In addition to your employees, your customers can also help you identify new ways of doing things. This can be partly achieved through an effective feedback system that you analyze closely to identify problems or bottlenecks that can be solved by a new approach. However, you also need to proactively organize 'focus groups' with your key customer segments so that you are constantly in tune with their evolving needs and expectations and, through these interactions, you will discover new ideas on how to offer them a better experience.

The key to a successful innovation process is to have lots of ideas and you should even think about a target for the number of ideas you want to generate in a given month in order to steer this activity.

Adapt, don't adopt

I.8.1.2. External sources

Of course, finding new ideas is not limited to what employees can suggest or what you can learn from listening to your customers: there are many good ideas out there in the tourism industry and beyond.

However, a word of warning before we move forward: some businesses are idea generators, while others are idea copiers or thieves, and it's not a positive sign for your business if you end up depending on other businesses to find new ideas for you.

Simply copying an idea you see elsewhere actually makes you less innovative, not more; and in most cases, when a business simply copies an idea seen elsewhere, it can rarely do it as well as its originator, due to differences in factors such as culture and employee engagement levels. So the message here is that you should, of course, look outside for new ideas, but it's about adaptation, not adoption - when you see a new idea you like, shape it to fit your organization and your people, and try to make it uniform. Better still, don't just copy it.

The search for external ideas can involve both informal and formal elements. For example, perhaps you, or one of your managers or employees, will come across an interesting idea from outside the company and these ideas can be brought back to the monthly meetings described above. More formally, you'll also need to do a lot of what's known as "process benchmarking". This is a planned activity in which you choose a particular business process, for example, reservations, and seek to learn how the best in the business - and beyond - manage that particular process.

This means building relationships with the best companies (in this process), site visits to find out how they do it so well, and again adapting without adopting what they do to suit your business. This takes planning, organization, financial resources, and significant effort to do meaningful benchmarking of processes, but it does yield results in terms of finding better ways of doing things.

I.8.2. Evaluating ideas

If you get the above right, you increase the number of ideas identified every month from internal and external sources. The evaluation of ideas should then take place at several levels.

I.8.2.1. Departmental level

Following the monthly meeting with his team, each Manager/HoD must examine the ideas identified and will probably group them into three categories:

1) Small ideas that can be implemented immediately within the department.
2) Bigger ideas require input and decisions from the whole management team before they can be implemented.
3) Ideas that are not suitable for implementation.

For those deemed unsuitable, the manager/HoD should explain to the employee in question why it is unsuitable and encourage them to continue to put forward ideas. For small ideas that can be implemented immediately, the Manager/HoD must put in place the necessary measures within the department to achieve this. For ideas that require input from the whole management team, they should be discussed at the monthly senior management meeting, as outlined below.

I.8.2.2. At company level

The entire management team of any company should meet monthly and, again, part of this meeting can be devoted to evaluating the most important ideas generated within the company during a given month. This could work as follows:

- Each manager/CEO provides a quick summary of the small ideas implemented in their department during the month, then outlines the "bigger″ ideas generated for discussion and decisions should then be taken accordingly.
- If process benchmarking activities have been carried out during the month, the findings and proposals should also be presented for discussion by the relevant manager(s) and appropriate decisions made.
- This approach ensures that all managers are aware of the range of ideas that arise within departments and are equally involved in deciding on the most important and substantive ideas.

This simple "bottom-up″ approach to generating and evaluating ideas is used to integrate the first two stages of the innovation process into existing management meetings; this alone will send the message that innovation is part of what you expect people to do on a daily basis, not something they can participate in when and if it suits them.

Yes, it may add to the length of these meetings, but it's still a better use of time than holding separate meetings around innovation. Also, because the process is integrated into existing meetings, managers and employees can never use the excuse that they haven't had time to come up with ideas.

I.8.3. Implementing ideas

As mentioned, small day-to-day ideas generated at the departmental level, once agreed, should be implemented systematically and without too much fuss. For larger ideas that require senior management approval, how these ideas are to be implemented can only be decided on a case-by-case basis, as the route to implementation will naturally depend on the idea in question.

However, when a new, broader idea is approved that is likely to have an impact across the business, it can be useful to form a cross-functional implementation team to guide the process. Wherever possible, those who proposed an approved idea should be involved in this team. This team would then be responsible for bringing a particular idea or group of ideas to life.

I.8.4. Impact of ideas

Once an idea has been approved for implementation, thought also needs to be given to how its impact will be measured in the future, so that the benefits of implemented ideas can be measured over time. The monitoring process can be described as follows (Fig. I.10):

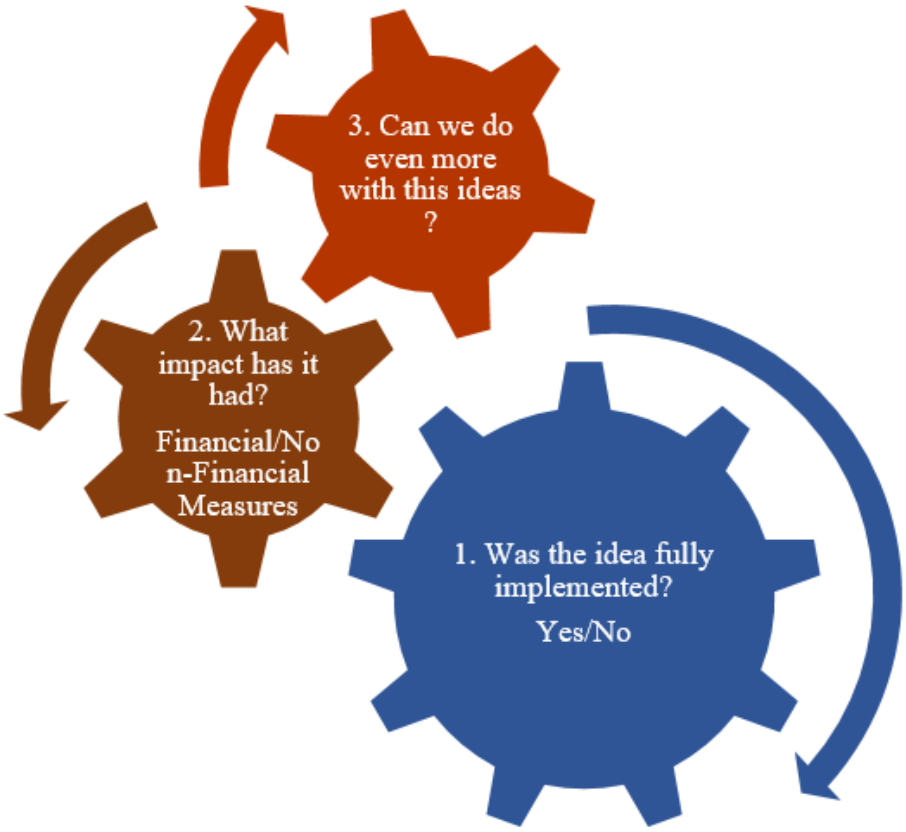

Fig. I.10. Monitoring process [161].

Implementation can be monitored by the cross-functional team set up to guide the implementation of a particular idea, and the monthly senior management meeting can also monitor implementation progress.

As for assessing impact, this of course takes time, but the management team should track the relevant financial and non-financial metrics attached to each idea implemented to see how it has helped the business over the long term.

I.8.5. Recognition of ideas

When it comes to planning a new approach to innovation or revising your existing approach to innovation in your business, the issue of recognition is very important. On the one hand, you don't want to ‘reward’ people simply for making suggestions which, as we've seen, should be part of their job description anyway. On the other hand, you need to recognize every idea, and when a suggestion is implemented and makes a major contribution to the company's performance, you might consider sharing the reward.

Again, to decide how to approach this problem, you need to use common sense:

Every idea or suggestion received, whether good, bad, or indifferent, should be acknowledged and the employee thanked.

When an idea is not used, the employee should be informed of the reason and encouraged to continue proposing ideas.

The employee who proposes an approved idea should, as far as possible, be involved in its implementation.

All ideas that are implemented should be recognized, and there are many ways of doing this. Some companies have an ‘idea wall’ that shows which ideas have been approved each month; others have an "idea of the month award″ (often one of the four idea categories above) and an "idea of the year award″. There are many ways to make employees feel comfortable making suggestions, without requiring financial compensation.

As mentioned, when a great idea emerges, it makes a significant difference to the company's performance; you should think about how the employee who made the suggestion can be rewarded.

The four stages of the innovation process described above provide an effective but simple approach to managing the flow of ideas within any business. The main benefit of this framework is that it seeks to ensure that idea generation is part of an employee's job and not a ‘nice to do’ activity from time to time. The process also reduces the number of extra meetings needed to manage innovation, which is always welcome for busy tourism professionals.

I.9. Conclusion

Innovation has always been a more or less ambiguous phenomenon. However, its increasingly recognized importance has made it a favorite subject for study and research. Most studies consider innovation to be the process of transforming ideas into new or improved products, according to various classifications relating to levels of novelty (radical or incremental), the object of innovation (products, services, or processes), and its extension to partial and total innovation (business model).

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CHAPTER II

ELABORATION OF BUSINESS PLAN OF AN INNOVATIVE PROJECT

II.1. Introduction

In a constantly changing world-marked by rapid technological advances and intensified competition, project innovation has become a strategic necessity for companies. It is a vital lever for staying competitive, adapting to market changes, and meeting the growing expectations of consumers. In this context, companies must rethink traditional approaches and integrate innovative practices to ensure long-term sustainability and growth.

The Algerian economy is entering a new phase of transition toward a market-based system. Unlike the previous socialist model, the State is now committed to liberalizing markets, encouraging private initiative, and promoting competition and privatization. This time, the development strategy promotes private entrepreneurship by increasing the number of small and medium-sized enterprises (SMEs).

Today, although entrepreneurship is relatively well supported, a high failure rate persists, more than one in two businesses close within the first five years. In response, Algeria has, for several years, been implementing measures to promote investment and support business start-ups. These measures aim to:

- Encourage entrepreneurship.
- Simplify the formalities involved in setting up a business.
- Facilitate the creation and long-term survival of companies by providing appropriate support for project owners.
- Adapting financing mechanisms to new companies.
- Stimulate investment through targeted tax measures.

Becoming a boss and running your own business is hard-earned and hard-earned. This field is reserved for the most tenacious, the most persevering, and those who believe in their abilities. The public authorities have set up reception and guidance structures, as well as assistance and guarantee schemes to support and mentor young people and promoters driven by the desire and dream of setting up their businesses and succeeding as entrepreneurs and managers. That's why there are management tools to help them think through their projects and bring them to fruition. Among the management tools available to entrepreneurs, there is a tool that is almost universally accepted by the various players involved in setting up a business: the business plan. In recent years, the business plan has become a widely used tool in entrepreneurship.

A business plan is a summary of the strategy that an entrepreneur intends to implement in his business project and develop the necessary and sufficient activities to succeed. It is written for internal management and planning purposes, as well as for external communication and to convince banks of the need to access finance.

The business plan is an essential tool for launching a new company, developing it, or obtaining finance from lending institutions.

Drawing up a business plan for an innovative project involves a structured and detailed approach that highlights the idea, innovation, market strategy, and financial viability of the project. A well-developed business plan is a key tool for attracting investors, guiding the project's management, and ensuring its long-term success.

With this in mind, our study is divided into two parts: the first will enable us to define the business plan and its usefulness. In the second part, we will describe the various stages of drawing up a business plan.

II.2. Foundations and definition of the business plan

II.2.1. Definitions of a business plan

The business plan (Fig. II.1) is a compulsory exercise for any company founder; a detailed feasibility study is the first stage in launching the company. The preparation and drafting of the plan must be well-planned and are just as important as the final document. The business plan is the result of a research process, a document that presents the company's future activity, sets the objectives of each of its stakeholders (internal or external), expresses the needs (financial, material, human), and solicits everyone's support and interest in taking action.

The business plan helps to structure the project, set objectives, and show the logic of the company, giving it a guideline for its development [1]. The business plan is a means of linking the various technical areas of management (marketing, finance, strategy, etc.).

It also enables third parties (bankers, partners, initial collaborators, customers, suppliers, investors, family members, etc.) to assess the financing plan and the capabilities of management, to appreciate the professionalism and clarity of a project, to minimize risks, to support and to better understand the project. It is a dynamic document because each company is unique and the business plan must highlight this specificity.

Fig. II.1. Business plan [2].

The business plan, which should not exceed 20 to 30 pages, includes [3]:

- A summary of the business plan,

- A presentation of the company to be created (CVs of managers and decision-makers, legal form, location, internal organization, etc.),
- A presentation of the proposed products and services (characteristics, quality, strengths and weaknesses, planned development, etc.),
- A market study (size, growth rate, customer base, competition, current regulations, etc.),
- SWOT analysis (strengths, weaknesses, opportunities, risks),
- Marketing plans (pricing policy, promotion, distribution, range policy, etc.) and sales plans (sales targets, sales process, cost estimates, etc.),
- A financial plan (sales forecasts, overheads, investment, cost price, method of financing, etc.).

II.2.2. The purpose of a business plan

The business plan aims to establish, through its rigorous construction and system of logical deduction, the feasibility of the project or, if the conclusion is unfavorable, to redirect it (or even abandon it). This document, which is often voluminous, also offers the advantage of being able to provide the detailed explanations required by an investor or banker at a later date, the first step being to present them with a summary of a few pages in a dynamic and convincing form on the expected profit (hence the importance in the summary document of the financial tables) to assess the interest and relevance of a project proposed to them. It is also a very useful tool for building the communication brochure when the time comes to make yourself known and meet customers.

The business plan as a management tool makes it possible to determine the resources necessary to achieve objectives allocate income to priority actions and anticipate the impact of external circumstances.

II.2.3. Business plan modeling elements

Concretely, the business plan aims to present the development strategy of the company and/or its project. All aspects of the activity (products, markets, marketing, production, research and development, financing, organization, entrepreneur profile) will be reviewed to try to provide as much information as possible on these different elements. It therefore makes it possible to evaluate the project at two distinct and complementary levels:

- The maturity of the project: making the difference between a simple idea and a real entrepreneurial opportunity.
- The different points of coherence of the project [4].

It is made up of three main parts which aim to bring together:

- The carrier and his team. This part emphasizes the coherence between the leader and the project, and the complementarity of the skills combined.

- The project and its environment (market study, market players, positioning, strategy, etc.).
- The project and financial summary (3-year income statement, 3-year financing plan, 12-month cash flow plan, etc.). This summary is only the numerical translation of the elements of the business plan.

Based on these different elements, it is possible to model the business plan in the entrepreneurial process [5]. The business plan is part of a design-realization-valorization triptych (Fig. II.2) which is intended to be recursive and evolving. This modeling reflects the asymmetry between the position of the "client" and that of the entrepreneur [6, 7], corresponding to the uncertain and risky nature linked to the notion of entrepreneurship.

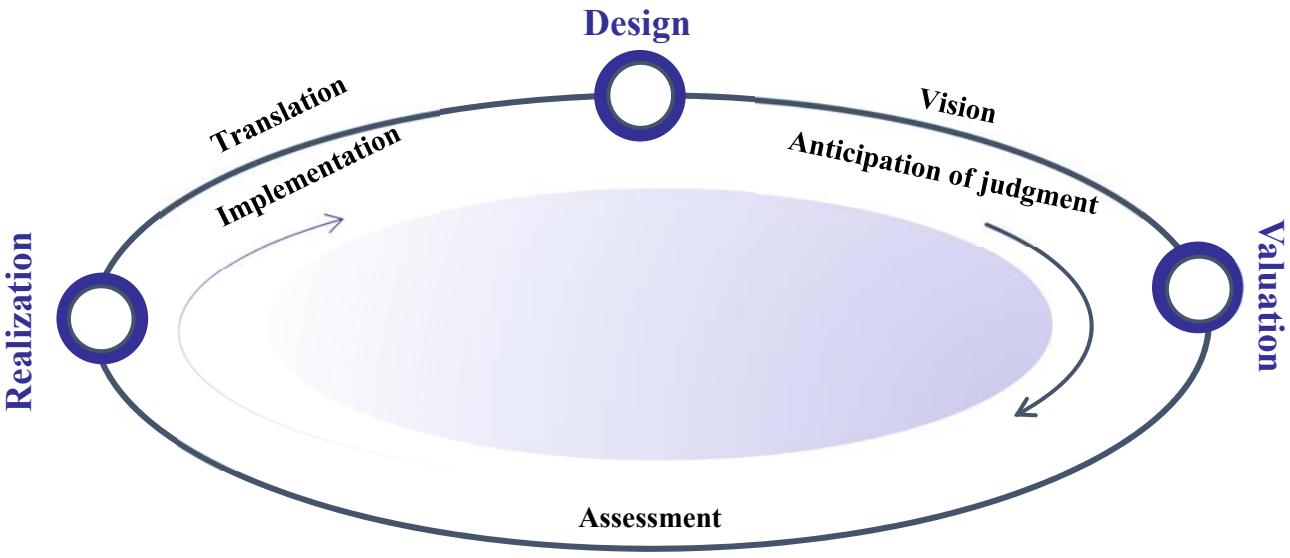

Fig. II.2. The business plan: between vision, translation and judgment [6].

II.3. Business plan development process: from idea to business creation

The entrepreneur is a project leader who never stops refining it, working on it, specifying it until it materializes into a prosperous economic business (the company). The birth of business results from the combination of several factors: a good idea, market demand, capital, and a good dose of enthusiasm and goodwill. The business plan must be developed using the following presentation:

II.3.1. Project presentation

II.3.1.1. Project idea

The idea often takes the form of an intuition or desire that deepens and matures over time. Every business creation project begins with an idea. Whether it arises from experience, know-how, creativity, or a simple combination of circumstances. There are no good or bad ideas per se, but only ideas that can be suitably developed by those who conceive them. Appreciation of

the merits of an idea is therefore inseparable from the personal project of the person expressing it.

There is a wide variety of forms of ideas: the newer the idea, the more questions will need to be asked about the ability of future customers to accept it; the banaler it is, the more it will be appropriate to question its real usefulness about the already existing offer on the market. Whatever its origin, the idea does not initially represent anything very concrete. To move on to a realistic project, the first thing to do is to define it well, that is to say, to force yourself to summarize it in a few precise, concise, and strong lines. This exercise will allow us to put this famous idea on paper, to be able to identify the different aspects by mentioning the following:

- The characteristics of the product or service envisaged,
- Its usefulness, its use, the expected performances,
- The company's main operating principles are to be created.

At this stage of reflection, we must strive to become aware of the "minuses" (weaknesses, shortcomings) of the product or service offered, but also, the "pluses" (innovative or specific character) and its competitive advantages.

The idea is found in the middle of work. In this case, the business creation project is linked to a profession already practiced and to an activity known to the entrepreneur. This type of creation has the best potential for success. It is also found in exchanges with the environment, traveling abroad; reading the specialized or professional press; exploiting the ideas of others; attending economic events; at the level of the ANSEJ and CNAC systems; project files by sector of activity or monographs of cities kept by administrations and local authorities as well as the different nomenclatures of activities such as the nomenclature of CNRC activities, the terminology of activities of the chamber of crafts and trades and the nomenclature of regulated activities.

II.3.1.2. Personal project of the creator

Unfortunately, project leaders too often neglect this step to focus solely on the economic, commercial, and legal feasibility of their project. This is a mistake! The maturation of an idea must imperatively take into account more personal elements. Choosing to create is not just a choice of goods and services to produce and market, it is also the choice of a particular way of life, which must be consistent with the project requirements. Verifying this consistency therefore supposes:

- To define the personal project of the creator.
- Analyze the constraints and requirements inherent to the economic project, ensuring they can be overcome.
- To check that there are no contradictions between the two projects (personal and economic).
- To evaluate, where applicable, the deviations and the corrective actions to be undertaken.

The project leader or the company creator, whether a man or a woman, must face the constraints and demands arising from their project. For this, he must:

- Think about your real motivations,
- Take stock of your personality, skills, experience, and potential (what we call "taking your assessment″),
- List your constraints.

His motivations

The company is not created without a specific reason! Looking for the motivations that push us to get started will allow us to check the degree of will, ambition, and energy that we are ready to devote to our project. Among these motivations:

- Create to find a solution to your situation (unemployment, lack of income, family separation, etc.).
- Create to develop a business. This type of motivation reveals a strong desire to create with a medium-term strategy. It follows a calm and reasoned approach.
- Create to live a partnership.

Other examples of motivations: are independence, the search for power, the simple exploitation of know-how, and the search for a certain social position, etc.

Whatever the motivation, it is important to check that the nature, size, and perspectives of the project remain compatible with the creator's expectations.

Personal assessment

You need to ask yourself about your personality, your skills, your physical, emotional, and intercultural abilities, your potential, your professional, and extra-professional experience, and finally your main needs.

Personal constraints

Among the constraints we cite:

- The financial resources available and achievable,
- The irreducible and desired income,
- Family responsibilities,
- Constraints of time, environment, and living environment,
- Health problems of the creator and those around him.

II.3.1.3. Project objectives

Formulate measurable and achievable objectives for your project, what are the targets to achieve, and the results to obtain? Make a list of your short-term (6-12 months), medium-term (2 years), and long-term (3 years or more) goals. This is a series of concrete objectives to achieve your mission and make the project profitable. Each objective is defined by a specific action, must be realistic, measurable, and have a deadline. If several concrete steps have already been taken, let's start the section with a list of the objectives achieved to date. To end this section, you can briefly mention future development plans to ensure the sustainability of the business.

II.3.1.4. Completion schedule

Describe what has already been achieved, what is in progress, and what is to come (example: development of the business plan, mobilization of financing, construction and development, purchase of equipment, negotiation with suppliers, development of the production plan). Communication, staff recruitment, the start of production, official opening).

II.3.2. Market research

This fundamental market research stage is a must for any future business leader. The latter must demonstrate that there is a real need and that this need is great enough to justify the start of your business and ensure its growth. You must therefore show that there is a market segment with sufficient sales potential to position you advantageously compared to the competition. This will reduce the risks of offering the wrong product or service, locating your business (especially for retail businesses) in the wrong location, setting prices too high or too low, targeting the wrong clientele, and making bad decisions. This step is essential to choose the marketing strategy best suited to the needs of your target customers. It allows:

- To better understand the major trends and market players, and to check the opportunity to get started.
- To gather sufficient information which will make it possible to establish turnover hypotheses.
- To make the best commercial choices to achieve the objectives (determine your strategy).
- To set, as coherently as possible, the "product", "price", "distribution" and "communication" policy (marketing mix).
- To provide concrete elements that will be used to establish a forecast budget.

II.3.2.1. SWOT analysis

The analysis allows us to understand the sector and highlight opportunities and threats. Thus, make an objective critical examination of the project's strong and weak points. An outsider’s perspective can be helpful during this examination (Fig. II.3).

Strengths

The technological, ability to manage project promoters, commercial experience, a network of relevant relationships, etc.

Weaknesses

Not mastering foreign languages, lack of experience, etc.

Opportunities

Financial aid for particular projects, etc.

Threats

Competition, opening of markets.

Fig. II.3. SWOT analysis [8].

There are several tools to determine the business dynamics, potential, and general trends of your sector of activity (PESTE, Porter, MOFF, etc.) besides numerous sources of information. In addition, each business case is different and it is difficult to standardize tools and methods. They must be adapted to each individual's needs. In the business plan, it is not a question of detailing all the results of your research, but of drawing the relevant conclusions. The basic idea is to show that you know the rules of the game and the success factors that affect your sector of activity. Note your sources of information carefully.

II.3.2.1.1. SWOT Applications Team

The SWOT Applications Working Group (SAWG) is made up of the project Leads and members associated with the project. Its role is to guide the scientific objectives of the

applications, provide links with operational agencies and data users, and advise on solicitation and funding opportunities.

The SAWG will support applications development integrating their relevant scientific interests, assess requirements and benefits of data products, disseminate information about SWOT and data products to the wider user and scientific community. The SAWG is comprised of the following members:

- Margaret Srinivasan, Craig Peterson, NASA Applications Leads.
- Alice Andral, Michel Dejus, CNES Applications Leads.
- Yi Chao, Remote Sensing Solutions, U.S. Ocean Science Lead.
- Ed Beighley, Northeastern University, U.S. Hydrology Science Lead.
- Rosemary Morrow, LEGOS, CNES Ocean Science Lead.
- Jean-Francois Cretaux, LEGOS, CNES Hydrology Science Lead.
- Bob Arnone, U. Southern Mississippi at Stennis Space Center.
- Sylvain Biancamaria, LEGOS.
- Phil Callahan, Caltech Jet Propulsion Laboratory.
- Faisal Hossain, University of Washington.
- Laurence Houpert, CNES.
- Gregg Jacobs, Naval Research Laboratory.
- Pierre-Yves Le Traon, Ifremer & Mercator Ocean.
- Dennis Lettenmaier, U. Washington.
- Delwyn Moller, Remote Sensing Solutions.
- Steve Nerem, U. Colorado.
- Tamlin Pavelsky, University of North Carolina.
- Robert Saint-Jean, Canadian Space Agency.

II.3.2.2. Market analysis

This stage (Fig. II.4) concerns all information relating to the market, namely the meeting between the demand and supply of a good or service. This information can be obtained by collecting existing information (specialized journals, official publications, national statistics, dissertations doctoral theses, etc.); or by collecting information specific to the project, in the field by answering the following questions:

- How does the market work in general?

- What is the climate like?
- Is there a leader or not?
- Can little ones operate there?
- Is the market highly regulated (constraining legislation subject to change)?
- What is the purchasing process?
- Is the buyer the consumer? Is there a prescriber?

It is important to validate your market through concrete steps. Through visits, interviews, and/or surveys, using your social networks if applicable, verify the needs of your target clientele and that demand is sufficient to generate profits. What is the value of the potential market?

Fig. II.4. Market analysis [9].

II.3.2.3. Products and services offered

Provide a detailed description of your product or service and its features (quality, weight, durability, style, ease of maintenance, packaging, warranty, etc.). Identify what needs your product or service addresses and whether are they different from those of the competition. If yes, in what way? However, do you think the targeted customer segments will appreciate this difference? If yes why? And have you planned services that accompany your products (home delivery, after-sales service)?

Marketing strategy: All the techniques and tools you use to make your product or service known to your potential customers.

- **Product policy:** What is the likely evolution of your product or service? What guarantees are offered? How is after-sales service provided?
- **Pricing policy:** Describe your company's prices, credit policy, terms, and payment terms. What are the market prices for a comparable product or service?

- **Promotion policy:** Describe the means to implement to make your company known, and to reach your customers.
- **Distribution policy:** How do you plan to get your product to the consumer? What is the planned distribution channel?

II.3.2.4. Customers

You must be able to answer the following questions: Who are your customers? What motivates them? What are their purchasing habits? Who makes the purchasing decision? How often do you buy? How many are there? Where are they? Have you already established contact with your potential customers? What is the current demand? What is the nature of seasonal or continuous demand? Where are customers buying these products now? What are the criteria that influence the purchase, the quality of the product, the quality of the reception, the sale price, the delivery time, the after-sales service, the payment conditions, etc? Are customers price-sensitive? What is their purchasing power? What is your advantage? Why do you think customers will prefer your products?

II.3.2.5. Competitors

A good project recognizes its existence but positions itself differently. Saying that your product has no competitors is a way of avoiding the question and constitutes an admission of ignorance of the market. Since there are competitors, it is necessary to show how the offer is different and more advantageous for the customer (competitive advantage).

Market research is therefore still neglected by many creators who are not aware of its usefulness. If it does not represent a guarantee of absolute success, its purpose is to reduce risks as much as possible by allowing us to better understand the environment of the future company, and thus to make adequate and adapted decisions: "I know my market, I am therefore able to decide.

II.3.3. Funding

II.3.3.1. Financial forecasts

Establishing financial forecasts consists of translating, into financial terms, all the elements gathered during the previous stages and verifying the viability of the company by projecting these elements over a relevant and sufficiently readable period: three years. For large projects, it is not uncommon for forecasts to be made over five years or even more. But, in the majority of cases, a three-year period is more than sufficient.

After having delimited the choices which concern the nature of the products or services, their marketing, the way of managing the future business, etc. These choices require the use of certain technical and human resources, which must now be precisely evaluated. To do this, a simple method consists of answering, for each function of the company (purchasing, storing, manufacturing, prospecting, selling, etc.) the following questions: How? With what? With whom? Then, draw up a table showing all of these means with their translation in terms of costs, except for the capital implicitly resulting from the operating cycle. This approach must lead to

building a coherent and viable system since each of the options taken finds its financial translation and its impact on financial balances. If the imbalance is too significant, the project must be reworked and its financial structure adapted accordingly. A very simple method can be used to establish a forecast plan. It consists of bringing together, in bulk, the information that feeds the different tables: financing plan, forecast income statement, and cash flow table.

Each decision taken to sell, produce, and manage the activity has a cost that corresponds to:

- Either to a permanent need (sustainable investment and not consumed by the company's activity),
- Or an expense (expense generated by goods or services consumed during the activity).

It is therefore by taking these elements, by naturally classifying them, that most of the forecast accounts will be formed. This approach may lead to the search for information on points that have not been covered, such as energy and postal costs, social charges, etc.

The construction of turnover hypotheses is a delicate and crucial step; the assistance of professionals is very useful in helping business creators pose coherent and realistic hypotheses. It is necessary to present the estimates to experts or support staff at the ANSEJ, CNAC, and nursery agencies.

We can cite the steps of a methodology to follow:

1) List the predictable inflows and outflows of money (without classification),

2) Then distribute them in the financing plan and the income statement. Depending on their nature (permanent need or expense) each of the inputs and outputs is allocated either to the financing plan or to the income statement.

Table II.1: Initial financing plan.

Sustainable needs		***Sustainable resources***	
- Establishment fees - Investments excluding tax - Working capital requirement		- Share capital or personal contribution - Associate current accounts (if applicable) - Subsidy or equipment bonuses - Medium or long-term loans.	
Total		***Total***	

II.3.3.2. Personal contribution

- Personal savings,
- Family help (donation),
- The loan between individuals.

II.3.3.3. Investment measures and systems

Measures and schemes to promote investment and support business creation have been put in place for several years in Algeria:

ANGEM

National Micro Credit Management Agency. Micro Credit is a loan allowing the purchase of small equipment and start-up raw materials to carry out an activity or profession. This system is intended for any citizen over 18 years old without income or with unstable and irregular income as well as housewives. It aims for economic and social integration through the creation of activities for the production of goods and services [10].

ANSEJ

National Youth Employment Support Agency. It is reserved for young unemployed people aged 19 to 35. The support process provided by this system covers the stages of creation, launch, and expansion of the business. It concerns creative projects whose total cost does not exceed 10 million dinars [11].

CNAC

The National Unemployment Insurance Fund. This system is reserved for unemployed promoters aged 30 -50, who have lost their job for economic reasons and registered with ANEM for at least 1 month. The maximum investment cost is set at 10 million dinars [12].

ANDI

The National Investment Development Agency is a government institution whose mission is to facilitate, promote, and support investment and business creation through incentive schemes that essentially revolve around tax exemption and reduction measures. Two benefit plans are planned [13]:

- The general regime applies to current investments made outside the areas to be developed;
- The exemption regime applies to current investments made in areas to be developed and to those of particular interest to the State.

II.3.3.4. Bank financing

Assistance in accessing bank financing is done by one of the following methods:

- **The mutual guarantee fund for microcredits**

The purpose of the fund is to guarantee microcredits granted by banks and financial institutions members of the fund, to beneficiaries who have obtained notification of aid from the national microcredit management agency, ANGEM [14].

- **The mutual guarantee fund for risk/credit guarantees for young promoters**

The Fund was created to further support banks in taking the risks inherent in financing companies created under ANSEJ schemes [15].

- **The mutual guarantee fund for risk/credit guarantee of investments of unemployed promoters aged 35 to 50**

The fund was created to further support banks in taking the risks inherent in financing companies created under CNAC schemes [16].

- **FGAR**

The SME Credit Guarantee Fund (FGAR) is a public institution designed to facilitate SMEs' access to bank financing when launching business creation or expansion projects, by granting credit guarantees to banks, to complete the financial package of the projects [17].

- **CGCI**

The investment credit guarantee fund is a public institution set up to support the creation and development of SMEs by facilitating access to credit. The CGCI-Pme aims to cover the risks attached to investment credits granted to SMEs [18].

- **Private equity companies**

Private equity is a financing technique by taking minority and temporary stakes in the capital of a company. It takes several forms including [19]:

- Risk capital to finance business creation.
- Development capital is intended to finance the development of the company.

II.3.4. Legal forms and standard statutes

Choosing a suitable legal form is decisive in the development of a business project. This is a crucial step that must be studied carefully, taking into account factors such as the number of partners, protection of assets, the scale of the project, capital, taxation, etc. This step consists of adapting to the business creation project, a legal framework that will allow it to see the light of day completely legally. Project promoters have the choice between several legal forms, including the following:

- The sole proprietorship (a single person).
- The general partnership (two or more people).
- The joint venture (at least two people or companies).

- Incorporation (single person or two or more shareholders).
- The cooperative (three or more people).
- The non-profit company (community or social organizations).

The creator must choose whether he wishes to create his business alone or wishes to create his business with one or more partners. In the first case, there are two legal forms [20]:

- The sole proprietorship (natural person).
- The single-member limited liability company (EURL) is a partnership. The minimum share capital required is 100,000 DA.

In the second case, there are several legal forms [20]:

- The general partnership (SNC) is a partnership, generally a family business. Requiring no capital. The minimum number of partners is two.
- A Limited liability company (SARL), is a capital company. The minimum share capital required is 100,000 DA. The minimum number of partners is two.
- Joint stock company (SPA), This is a company whose capital is divided into shares. The minimum share capital required is 5,000. 000 DA in the event of a public call for savings and 1,000,000 DA otherwise. The minimum number of partners is seven.
- A Limited partnership (SCS), very rare in Algeria, is a hybrid company of people for the general partners and capital for the limited partners.
- A Partnership limited by shares (SCPA), is a hybrid company of people for the general partners and capital for the limited partners. The minimum share capital required is 5,000. 000 DA in the event of a public call for savings and 1,000,000 DA otherwise.

The choice of a structure is generally based on the following criteria:

- The nature of the activity,
- The desire to associate,
- Heritage organization,
- Financial needs,
- The functioning of the company,
- The social regime of the entrepreneur,
- The tax regime of the entrepreneur and the company,
- Credibility about partners (bankers, customers, suppliers, etc.).

II.3.5. Setting up the business

Choosing suitable premises is important: it often reflects the company's image with customers and suppliers. This should not change address frequently, as this entails significant costs: administrative formalities for transferring headquarters, moving, notices to customers, printing of new commercial documents, etc.

List the physical characteristics of the chosen location: geographic location, immediate environment, building structure, surface area, accessibility, parking, rent or mortgage costs, etc. Explain the improvements that will need to be made to the premises to make it operational and provide, if available, a layout plan as well as the associated costs.

II.3.6. Taxes and fees

Being a business manager requires making a certain number of tax decisions at any time. To avoid being surprised and be able to dialogue with the administrations concerned, it is essential to know and understand the basic principles that govern business taxation in Algeria and the accounting obligations that result from it [21].

II.4. Conclusion

The development of a business plan should help the project leader refine their idea while providing a clear guide for action. In this way, the business plan becomes a tool for identifying potential obstacles and risks related to its implementation, allowing them to be anticipated or, at the very least, avoided. It not only connects design and production but also addresses the complexity of entrepreneurial and professional realities, such as decision-making, networking, information gathering, individual and collective work, and strategy implementation. No amount of preparation is valuable if the actions don't bring ideas to life. The goal cannot be achieved in a single day. With each action, task, and sale, the goal becomes closer. Perhaps, after gaining a better understanding of the market, the product, or the entrepreneur, the business plan will need to be updated. It is always evolving, just like the business itself. A well-developed business plan for an innovative project must demonstrate the project's feasibility, growth potential, and profitability. Being clear, precise, and detailed will help you convince investors, secure necessary financing, and effectively structure the development of your business.

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CONCLUSION

Conclusion

Traditional management tools designed to manage resources internal to a given company are not adapted to the management of these complex innovative projects, which lie at the interface of several organizations. Companies wishing to embark on technological innovations of this kind must first innovate in their organization and in their relations with their stakeholders. Innovation management and the creation of innovative companies require a holistic approach, combining idea gathering, collaboration, structuring, strategic alignment, risk management and the implementation of an innovation-friendly corporate culture.

Integrating sustainable development issues into the strategy of an innovative organization is a source of complexity, due to the multiplicity of these issues (environmental, social/societal, economic) and the stakeholders involved. To meet this challenge, it is necessary to invent a form of governance based on principles of general interest, transparency and loyalty. These governance principles can be implemented within innovative, collaborative and responsible projects involving several organizations.

Having acquired an in-depth understanding of innovation processes, entrepreneurial environments and the management of innovative projects, the student is well prepared to become a future innovative manager.