DIGITAL ENTREPRENEURSHIP MANAGEMENT MODEL

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Dedication

I dedicate this work

To my father MOHAMED EL MOCTAR, DAHOUD, to my mother ZEINEBOU and to the whole KEBOUD family.

Those who have never stopped believing in me; their advice which has always pushed me forward, to support me and help me to give the best of myself, and which have always surrounded me throughout my studies.

Hoping to one day be able to give them back a little of everything they have been able to offer me May the Almighty God offer them health, happiness and joy.

Thanks

This modest research would not have been possible without the help and support of a considerable number of people, who, I hope, will find here the expression of my deep gratitude.

First of all, I would like to thank my thesis director for his relevant advice and recommendations, his enriching ideas which have been of great use to me in the development of this thesis.

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Finally, I would like to thank the research staff and the administrative services of selinus university who spared no effort to make this research possible.

Epigraph

"That's been one of my mantras - Focus and Simplicity. Keeping it simple can be harder than making it complex because you have to work hard to clear your mind and design a simple product. » Steve jobs

This modest research work is an attempt at simplification that concentrated an effort to explore a complex universe, that of digital entrepreneurship. This universe, very little exploited by the sphere of academic research, has literally turned our lives upside down over the past thirty years. With so many heroes, this universe of digital entrepreneurship remains a risky investment sector whose success is often linked to innovation and above all to a particular management. This research focuses on this management with the aim of describing a model.

During this expedition, a stopover is mafde in the three stages of digital entrepreneurship, and in each era it is a question of going through one of the most beautiful works of this entrepreneurship. The final port of this expedition will be reached with the common Mangement points identified during each stopover.

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List of abbreviations, Keywords

ED: Digital entrepreneurship

MM: Management model

ME: Model entrepreneurship

MVP: Minimum Viable Product

POC: proof of concept

CZ: Changpeng Zhao

ICO: Initial coin offering

R&D: Research and development

Keywords: Entrepreneurship, Digital Entrepreneurship, E-Entrepreneurship, scalability, Management

Introduction

The beginning of a historical development in the field of digital entrepreneurship is noted mainly by the establishment of Internet technology. This technology became available to the general public in 1993 (Schatz and Hardin 1994). The fundamental advantages of Internet technology, especially in terms of efficiency and effectiveness (Weiber and Kollmann 1998), has enabled a wide range of entrepreneurial opportunities through commercial activity through digital channels. Early developments in the field of "internet economics" (Feindt et al. 2002, p. 51) were accompanied by emerging research on these topics (Kollmann 1998). The first terms to describe the impact of Internet technology on the field of entrepreneurship were "the

It turns out that the field of digital entrepreneurship is increasingly seen as a holistic research field in its own right. In this holistic system, where digital technologies are considered ubiquitous (Steininger 2019), researchers recognize the growing popularity of digital technologies and try to include all aspects and explore entrepreneurship in a digital context (Nambisan 2017). There is no sign of this approach slowing down yet. At the same time, since 2020, the focus on digital technologies has been fueled by the COVID-19 pandemic. As the resulting economic crash reached levels not seen since the Great Depression of the 1930s, the

The global pandemic has also affected research and led to conferences and workshops adopting virtual formats. However, the boundaries of entrepreneurship are increasingly blurred, as evidenced by the trend of digital technologies to facilitate what has been called "everyday entrepreneurship for everyone" (van Gelderen et al. 2021, p 1260), allowing everyone to exploit opportunities and be an entrepreneur. This evolution has, in turn, led to an evolution of the phenomenon of entrepreneurship as a whole.

Today digital entrepreneurship invades almost all sectors, this study is an exploratory attempt to invest the subject by first seeking an adopted definition and then analyzing the stakeholders and the profiles of entrepreneurs with the aim of establish a reliable management model.

Methodology

In order to meet the objectives of this research, an exploratory approach is adopted (Miles and Huberman, 2005; Thiétart, 2014). Through its inductive approach, this approach makes it possible to better understand the phenomenon studied, namely digital entrepreneurship.

A convenience sample of global digital companies has been identified. These are four global companies namely Google, Facebook, Airbnb and Binance that have been the subject of exploration of the management model. The data analysis was carried out in such a way as to carry out a thematic analysis to meet the research objectives.

Research objectives

The general objective of this research is to better understand digital entrepreneurship and, more specifically, to establish a management model, indeed it was important to understand the role of stakeholders and the profiles of entrepreneurs in the digital innovation process. To do this, it will be important to answer four specific questions:

1. What is the definition of digital entrepreneurship?
2. What are the implications of stakeholders in digital entrepreneurship?
3. What is the right profile for the digital entrepreneur?
4. What management model can make digital entrepreneurship more reliable?

Chapter 1: Literature review

The rapid development of companies democratizing digital innovations has created a new entrepreneurial sphere called digital entrepreneurship.

The Internet and more particularly the "world wide web" and mobile applications have been at the origin of public engagement with information and communication technologies.

Interactions in the virtual world, an online world, have therefore become crucial in relations with consumers. Indeed, this phenomenon attracts many young internet addicts who quickly turn into innovative entrepreneurs and are moving towards digital entrepreneurship. These digital businesses have disrupted certain areas such as communication and dissemination of information (Social networks) an upheaval in the social responsibility of the company ment in this sector whose startups work have become unheard of the Meta Group leader in the field with facebook, instagram and whatsapp .

They are nevertheless present at the heart of many projects and operate in various fields: Agri-food, Catering and consulting.

In addition, they have widened their perimeters and attacked regulated markets, thus constituting increased competition and a real threat for "offline" companies.

The example of Binance for the financial sector, AirBnb for the hospitality sector is the absolute proof.

From another perspective, digital entrepreneurship is now considered to be one of the most important sources of a country's development. This is argued by the figures of this entrepreneurship. The digital sector is the one that has progressed the most in recent years.

In 2020 While the broader stock market ended the year with a positive performance of 16.3% according to the MSCI All Country World Index (MSCI ACWI), it was the digital sector that top of the charts, with growth of 45.6%.

This allows economies to create new jobs as well as those capable of eliminating and improving living conditions. Citizens, companies, universities and governments become connected. This is radically changing people's lives, the way they work, shop, build relationships, communicate, and educate. More so, digital entrepreneurship is transforming the business environment and reshaping traditional industries; from clothing to energy distribution. These companies are in turn seeking to switch to digital mode to face these new competitors. Growing at a higher speed for some time, the phenomenon of digital entrepreneurship has not been sufficiently addressed by the scientific community.

This study extends the earlier findings of Zaheer et al. (2019) by identifying three relevant eras based on our analysis of publications by quarter and by year: the SeedEra (1990-2000), the Startup-Era (2001-2015) and the Expansion-Era (2016-20xx).

The purpose of this chapter is to study and compare the definitions given to digital entrepreneurship in the literature.

1-Draft on the digital entrepreneurship phenomenon

The term "digital entrepreneurship" has gained greater visibility since the late 2000s. to understand the concept.

The use of New Information and Communication Technologies has changed the way of doing business. This development results from the emergence first of the Internet and then of digital commerce. Entrepreneurs of a new generation have taken their place trying to seize the various opportunities of the web while responding to the demands of consumers eager for innovation. But despite this increase in popularity, the concept of digital entrepreneurship remains vague, poorly understood and not fully recognized due to theoretical shortcomings.

This is surprising as digital entrepreneurship is often seen by many as an important process through which economic change occurs: growth, job creation and innovation (Zhao and Collier, 2016). In order to better understand the development of digital entrepreneurship, it would be useful to trace its origins. The term digital entrepreneurship is relatively new.

The concept began to make its first appearances in the literature during the 2000s. McKelvey (2001) was probably the first to use it under the term "Internet entrepreneurship" to refer to attempts to capture business processes on the Internet. innovation involving knowledge-intensive products in the modern economy. Carrier et al. (2004) spoke more specifically of the phenomenon of small and medium-sized enterprises created to trade exclusively on the Internet under the term "cyber entrepreneurship". Other terms such as "e-entrepreneurship" (Matlay, 2004) and more recently "digital entrepreneurship" (Hull et al., 2007) have been used with a similar meaning.

However, the latter term is better suited today to designate the phenomenon we are dealing with.

There is still little research promoting the term "digital entrepreneurship".

Digital-related literature is relatively new in academia. This field of research is still in its infancy and very recently it has started to capture the attention of academics and opened a new gap for them to fill (Badaruddin et al., 2015).

2-Review of definitions of digital entrepreneurship

As previously announced, in order to provide a new, clear and functional definition of digital entrepreneurship, we conducted a review of existing definitions on this subject in the literature.

This review aims to discuss those given to the concept according to different authors and to highlight the dissimilarities and similarities between them.

An exploitation of a large scientific database was carried out to carry out this research. The first search conducted is based on the main keyword: Digital entrepreneurship. A second search was carried out using the keyword: E-entrepreneurship. One last search under the keyword: Internet Entrepreneurship.

The documentary research was carried out in French and in English with the following equivalent terms in particular: Digital entrepreneurship, e-entrepreneurship and Internet entrepreneurship. This search returned 1360 Articles found on Google Scholar.

Then The search for these expressions was concentrated at the level of the titles of the articles in order to come out with documents defining the concept with the absence of a filter applied with regard to the year of publication.

The result of these queries resulted in a total of 200 documents that could be consulted for review.

Table N°1: Definition search results

Terms	Number of documents
Digital Entrepreneurship	46
Technology entrepreneurship	66
E-Entrepreneurship	66
Virtual Entrepreneurship	26

After reading the pre-selected documents, a second filter was applied, resulting in a total of 10 resources to analyze.

The selection criteria were based on the availability of a clear and unique definition of the concept of digital entrepreneurship.

Table 2 presents the different definitions of digital entrepreneurship that we managed to identify thanks to the previous research and that we retained for analysis.

Table N°2: Definitions retained during the literature review

Author	Year	Selected definitions of the concept
Yan Castonguay	2019	digital entrepreneurship is distinguished by its innovation process, which revolves mainly around the creation of a technology
WASSIM BENSAID AND HASSAN AZDIMOUSA	2019	Digital entrepreneurship is a form of entrepreneurship that consists of seizing opportunities exclusively on the Internet, via new digital technologies, for the creation of totally or partially digital business, regardless of the nature of the product or service offered, as it brings a purely digital added value for the consumer
Giones and Brem	2017	Digital entrepreneurship is defined as the identification and pursuit of entrepreneurial opportunities based on the creation of digital artifacts, platforms and infrastructures that provide services through technology
Mankevich and Holmström	2016	Digital entrepreneurship is the ability to allocate resources and skills to develop an activity on the Web. It is a pursuit of entrepreneurial opportunities that give rise to exclusively digital products and services
Ziyae et al.	2014	A new way of doing business in the form of digital business
Guthrie	2014	The sale of digital products or services on digital networks
Nandanwar	2013	Process of creating companies that operate only on the Internet

To analyze the data collected, we relied on an in-depth study of the selected definitions to understand the meaning of each definition given to the concept. This in order to be able to compare and highlight the differences and similarities.

3-staves

The review carried out on the keywords of digital entrepreneurship revealed various definitions of the concept. The study of these has shown that the concept is perceived in a unanimous way as a form of entrepreneurship since it pursues more or less the same objectives as traditional entrepreneurship: to seize opportunities in an environment for create business.

This environment corresponds in this case to the Internet coupled with new digital technologies which also seem to constitute a vital element of digital entrepreneurship.

Indeed, unlike multichannel companies, also called "Brick & Clicks", which use online services to complement their traditional store, the digital entrepreneur has no in-store presence and sells his products or services exclusively via the Internet (Xing and Grant, 2006).

It will be well noted one point of contention most notable, concerns the nature of the product or service. Indeed, some authors associate digital entrepreneurship with the creation and formation of companies offering exclusively digital goods and services (Mankevich and Holmström, 2016; Guthrie, 2014; Quinones et al., 2013; Balachandran et al., 2013). While other authors are of the opinion that digital entrepreneurship can concern the digitization of part or all of the entrepreneurial process (Yaghoubi et al, 2012; Jelonek, 2015; Hull et al., 2007). In other words, products and services can be digital as well as physical.

In this context and on the basis of the analysis carried out, this discrepancy prompted us to deepen our research in order to decide on a clear and complete definition of the concept, by asking the following question: does digital entrepreneurship refers only to companies offering dematerialized products or can also include any company using exclusively new digital technologies despite the nature of the product?

Hull et al. (2007) propose in their study on the subject a typology of digital entrepreneurship corresponding to degrees of digitalization: light, moderate and extreme digital entrepreneurship according to different criteria: digital marketing practiced, digital sales, the digital nature of the good or service, the digital distribution of the good or service, the digital interactions with the main external stakeholders in the value chain and the digital potential of the virtual internal activities of the business.

For their part, Xing and Grant (2006) referred to the proliferation of pureplayers to designate online retailers who only sell their physical products via the Internet in recent years. These have made it possible to intensify competition in the online sales market. So the success of companies like Amazon demonstrates that these pure players have a bright future and are also better placed to make a fresh start and establish new channels that build trust.

The notion of cyberspace is also often put forward when discussing digital entrepreneurship, justifying that this concept also concerns young companies with a material stock. Since this eliminated most of the physical limitations, such as the need for locations in market avenues, warehousing, exhibition spaces, limited opening hours and dependence on the performance of the sales staff (Kiskis, 2011). The early limits of cyberspace, such as the limitation of payment and delivery infrastructure, are also mostly unimportant today.

The business model concept offers another alternative to address a final issue. Broadly speaking, a business model refers to the way an organization operates (Zott and Amit, 2010;

Zott et al., 2011) and consists of several interrelated building blocks that express the core elements of organizational design (Casadesus-Masanell and Ricart, 2010).

Kollmann (2021) discussed the concept of value that can be created by digital business activities in digital data networks independently and differently from a physical value chain.

By way of illustration, Kollmann has perfectly demonstrated how a company that sells physical products such as Amazon cannot be excluded from the field of digital entrepreneurship.

Indeed, although the products are physical, the way in which they can be digitally selected, compared and ordered creates digital added value. This does not mean that these digital companies do not need real resources (staff, logistics, etc.). They also possess the digital creation of value.

After having exposed this point of contention, the study retains the approach putting digital exclusivity as an element of differentiation, indeed the definition retained will be that Digital entrepreneurship is a form of entrepreneurship which consists in seizing opportunities exclusively on Internet, via new digital technologies, for the creation of digital businesses. Based on this element, the scope of this exploratory research is limited in order to reduce the margin of error of the management model to be established.

Nevertheless, it is important to expose a historical overview of the support of this entrepreneurship, namely the internet. Real revolution. Over the years, the web has undergone great changes, major technological developments (artificial intelligence, blockchain, crypto, etc.) which make it possible to respond even more to the needs and expectations of Internet users.

Web 1.0: The birth of the web

The internet has literally changed the world. Little by little, he integrated himself into everyone's life and knew how to make himself indispensable. In its early days, the Internet had its limits. Users who used this new platform could present their business to a wider audience. However, the information posted on the Internet was static without any feedback or comments from users. The professionals were on one side and the Internet users on the other side without any interaction. There was no connection and exchange between these two parties. Content was published on the Internet and could be read, but that was the end of it. At that time, we called it web 1.0, it represented the beginnings of a future revolution on many levels.

When it was created, many people did not really believe in the future potential of the web. But some have bet on it, which has allowed the Internet to experience dazzling success in the space of a few years and become a strategic lever for companies and therefore to digitize.

Web 2.0

It began in the early 2000s with, in particular, the massive arrival of social networks and interactions between users around the world. It was from this moment that it was finally possible to share all kinds of information and data between users. Whereas with web 1.0 only professionals published content for individuals, now with web 2.0 individuals can also create content and share it with other individual users.

In addition to social networks, the creation of blogs has also become possible. But, the 2000s brought significant changes for the Internet. At the beginning of the web, only textual content could be published and shared, but after the 2000s many sites were created that allowed images, photos and videos to be shared and viewed. Blogs and social networks have become more customizable.

Web 3.0

Web 2.0 can be considered as the second generation of the Internet and with all the developments it has brought about, we can now say that the Internet is entering the third generation: Web 3.0. The web is becoming more and more human and the customizations have become endless. Websites get to know you better and react to you. Unlike web 2.0, web 3.0 makes it possible to read and interpret data and offer the best information for the user.

Web 3.0 is a web that really puts the user first. The content on the web is no longer static, it evolves over time and according to consumers. It really takes into account the expectations and needs of consumers. And for professionals, web 3.0 allows them to be closer to their customers, which aims to increase customer satisfaction.

Figure 1 and 2 show the evolution of the web and connected objects of digital entrepreneurship.

Figure N°1: web evolution
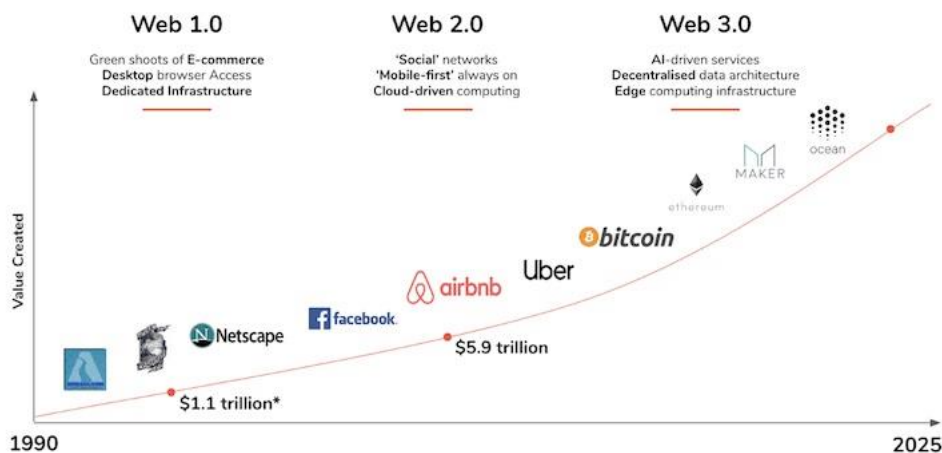
Figure N° 2: evolution of connected objects
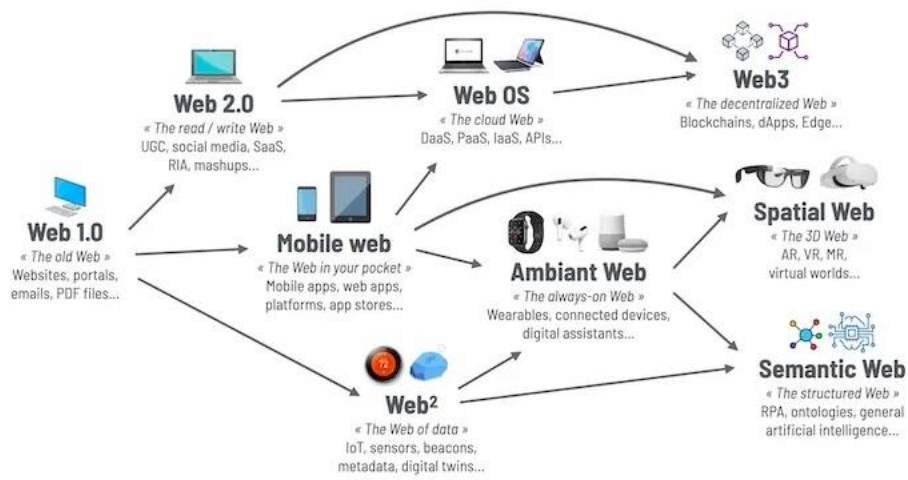
Chapter 2: Stakeholders and founder profiles of digital entrepreneurship

Digital entrepreneurship is essentially based on an innovation project (Bailetti, 2012; Shane and Venkataraman, 2003). Therefore, it is relevant to identify the different phases of this type of project. To do this, the choice of an analytical framework that makes it possible to understand the different roles of the stakeholders is essential. And since individuals have their own personality traits, the personal characteristics of entrepreneurs can of course vary, being more pronounced in some and less in others (Fillion, 2001).

If a person's entrepreneurial profile is close to that of entrepreneurs, we can expect that person to demonstrate entrepreneurial behavior and greater motivation to start a business.

The entrepreneur innovator may have similar characteristics that encourage him to start his own digital business. If events prompt them to do so. Enterprising individuals are generally more adept at building on their strengths and compensating for their weaknesses to take advantage of situations.

This chapter will focus on the innovation process and the stakeholders involved in this process in a first then the second part will focus on the profile of entrepreneurs

1-The innovation process and the stakeholders

Although the innovation process is not always linear, the systematic literature review carried out by Wirtz and Daiser (2018) based on 20 distinctive approaches between 2000 and 2014 made it possible to identify a generic model composed of 7 phases in the process business model innovation: analysis, ideation, feasibility, prototyping, decision-making, implementation and sustainability. This generic model from Wirtz and Daiser (2018) provides a lot of information about the activities of each of these phases.

The simplified innovation process of Tiwari (2007) remains more concise than that of Wirtz and Daiser (2018). It concentrates the activities of the innovation process in three phases: design, implementation and marketing.

Table 3 presents the phases of the models of Wirtz and Daiser (2018) and Tiwari (2007) as well as the activities of each of these phases.

It should be noted that the sustainability phase of the Wirtz and Daiser model touches on both the implementation and marketing phases of the Tiwari model. The simplicity of Tiwari's model grouping the activities of an innovation project into three phases will allow us to study digital entrepreneurship in a way that better answers the research questions.

Table N°3: Innovation process

Business model innovation process (Wirtz and Daiser, 2018) Stages and activities	Simplified process of innovation (Tiwari, 2007) Phases and activities
1. Analysis • **Analysis of current business models** • **Analysis of products and services** • **Analysis of customers and target groups** • **Market and competition analysis**	1. Design • **Analyse of needs** • **Idea generation** • **Idea evaluation** • **Project planning**
2. Ideation • **Determining the mission of innovation business models** • **Generation of customer insights** • **Development of customer scenarios** • **Visual Thinking/Network and Storytelling**	
3. Feasibility • **Business Environment Assumptions** • **Analysis of interdependencies** • **Analysis of potential internal or external business model alignment**	
4. Prototyping • **Analysis of different designs of alternative innovation business models** • **Creation of different designs of alternative innovation business models** • **Development of several detailed concepts** • **Refinement of components/partial models**	2. Implementation • **Development/ construction** • **Prototype** • **Applying a driver** • **Test**
5. Decision making • **Evaluation of each alternative innovation business model design** • **Selection of the final innovation business model design** • **Final harmonization of components** • **Realization and testing of the innovation business model**	
6. Implementation • **Development of the implementation plan** • **Communication and team building** • **Realization of the innovation business model step by step** • **Completion of implementation**	
7. Sustainability • **Innovation business model monitoring and control** • **Potential adaptation of the innovation business model** • **Sustained growth through organization-wide learning** • **Creation of isolation mechanisms against competition** • **Obtaining a long-term competitive advantage** • **Innovation business model transition**	3.Marketing • **Production** • **Market penetration** • **Launch (national and in-international)**

The analysis of this process made it possible to identify the stakeholders of the entrepreneurial ecosystem involved in each phase of the innovation process, but also their implications.

The first phase of Tiwari's simplified innovation process (2007) is the design phase. It includes needs analysis, idea generation and evaluation, and project planning.

Table N°4: Stakeholders

Stakeholders	Roles in the innovation process		
	Phase 1: design	**Phase 2: implementation**	Phase 3: marketing
Clients	• Technical input	• Networking	• **Access to resources**
Suppliers	• Technical input	• Access to resources • Networking	
Family	• Networking • Research offunding	• Networking • Funding	
Government agencies	• Research offunding	• Access to resources • Access to services • Funding	• **Access to services** • **Networking**
Professional Affiliations	• Networking	• Networking	• **Access to resources** • **Networking**
Legal body	• Structureof the project	• Access to services	• **Access to services**
Incubators	• Structureof the project • Networking • Research offunding		• **Access to resources**
Managersventure capital	• Technical input • Networking • Research offunding	• Access to resources • Funding	• **Access to resources** • **Funding**
Consulting		• Access to resources • Access to services	• **Access to resources**
Distributors			• **Access to services**
institutions financial			• **Funding**

2-the profile of entrepreneurs

The characteristics of the profile of the entrepreneur are first of all antecedents predispose to entrepreneurship: having a relative who owns a business or works on his own account, seeing relatives start a project or having work experience himself. in SMEs. It is easier to start on your own when you have been able to demystify what the business world is like, when you know how small businesses work and when you already have a network of contacts. It is noted in a second place the technical competence. It is most often developed in a company and knowledge of the sector proves to be another significant asset. On the other hand, the education received may have favored the creative spirit and the capacity for autonomy (Gasse et al., 2002).

In this part it is exposed the attitudes the capacities the motivations and the preparations as well as actions of the entrepreneurs in the digital sphere.

2-1 Attitudes

Attitudes are influenced by perceptions. These are conscious or unconscious positions taken in relation to hypothetical or real situations. If they do not in themselves trigger the intention or the action, they will influence their orientation and their development.

Innovative entrepreneurs have a competitive spirit. They see competition as a factor of business efficiency. They like to compete against opponents of their size. They see the opportunity to compete as a boost to performance. They like to test themselves and outsmart the competition in business. They believe in the need for change to achieve success. Be ready to adapt, to change. They create the opportunities for change. They are open to the opportunities that change brings. They hold a particular belief in the importance of research and technology in the creation and development of new businesses. These are all attitudes that can directly or indirectly influence entrepreneurial intentions and actions.

2-2 Capacities

Abilities are a combination of characteristics involving the ability to develop organized responses to situations. These are, in a way, latent skills, which have developed through experience and success and which the individual can call on depending on the circumstances. Entrepreneurs display several types of abilities.

Be confident in yourself and your potential. Trust yourself. Believe in your ability to succeed in what you undertake. To feel up to the task and the decisions to be made. Be confident of getting good results. Have a positive view of yourself and your abilities.

Release energy and vitality. Have great working power and long endurance. Like to be constantly busy and have a thousand and one things to do. Adopt an intense work rhythm and demand the same from those around you. Like to be active and produce. Invest fully in what you do, when you do it.

Go to the end of what we undertake. Be tenacious in pursuit of goals. Persevere in problem solving. Do not be intimidated by difficulties or obstacles. Don't be afraid to work hard and over long periods of time to get what you want. Putting all your effort into success and warding off failure.

Being able to withstand a high level of stress before reaching its endurance limits. Ability to work in difficult or unusual working conditions without performance being affected. Be

tolerant of uncertainty. Ability to easily adapt to challenging corporate social responsibility situations and not be afraid of change. See stress as a positive stimulus, an incentive to action, a signal to redouble your efforts, an exciting one.

Being able to represent situations, to identify the important elements and their interrelationships. Have a personalized vision of things. Demonstrate the ability to resolve complex issues. Have a capacity for all-encompassing judgement. Being intuitive in applying facts or principles to new situations. Quickly give yourself a clear vision of the results to be achieved. Consider several alternatives at the same time for solving a problem. Easily borrow from other fields of activity. Ability to adjust in a multi-skilled environment. Demonstrate leadership skills, train others to follow him, be able to plan, organize, mobilize and control.

2-3 Motives

What pushes you to create a business is most often the need for accomplishment, for self-realization. The need for power is also present, but it is generally less pressing. And the needs for autonomy and creativity are always the basis of the development of one's own business project.

Take on the challenge. Enjoy doing difficult things and facing demanding projects. Set your own goals. Have their own criteria of excellence. Wanting to exploit your full potential and progress. Be efficiency and results oriented. Seek control of resources related to the realization of projects and strive for ownership of results. Enjoy working with experts and seek to constantly improve performance.

Wanting to be the boss and not having to follow other people's directions. Enjoy directing and influencing people to get them to do according to his plans. Commit to mobilizing resources and people in the service of one's own objectives. Take charge of responsibilities and people. Seek to stand out and take center stage. Wanting to gain status and establish your reputation.

Liked being independent of people, constraints and restrictions. Not accepting conformity. Set aside pre-established constraints and directives. Wanting to decide alone and act as one pleases. Not being dependent on the emotional or social support of others. To insist on being free to choose one's dependencies according to the needs and the price to be paid. Look for situations that leave plenty of room for maneuver and that allow full initiative and creativity to be exercised.

Love original ideas. Wanting to do things differently. Imagine new ways of using commonly used objects or processes. Look for more efficient methods to get the job done. Love to have creative ideas and love to bring them to life. Search for new products.

Several of these motivations emerged as representative of innovator-entrepreneurs.

2-4   Preparation and Action

The typical preparation of the potential entrepreneur most often takes the form of a business plan. It is about the very particular conception of the entrepreneur, his vision, the anticipation

of the evolution of his company; it will demonstrate not only the desirability and relevance of the project, but also its feasibility, profitability and development potential.

The entrepreneur can plan his project alone, but more often, he will be able to call on help in the form of training, advice or consultation. The perception he will have of the availability and accessibility of relevant, effective and competent assistance may condition his decision to take action within a favorable timeframe. To do this, three types of resources are usually necessary for a successful business start-up.

Efficient and motivated human resources must be mobilized at all stages of business development, particularly at start-up where the entrepreneur must see to everything and at the same time learn his new trade. Being able to build a competent and enthusiastic team is the basis of success, and even more crucial in new economy companies.

Material resources include the technologies, equipment, processes, buildings, and information needed to run the business.

Financial resources are often the sinews of war; it is not so much their availability as their accessibility that creates the problem.

Once again, the characteristic of the entrepreneur is the appropriation and management of resources to satisfy needs and solve problems; the latter still has to believe that these resources exist and that they are normally accessible.

For innovator-entrepreneurs, it is above all the expertise of people that constitute the most valued resources.

Motivations, abilities, attitudes and intentions condition entrepreneurial behavior. We find the effects at the affective level, where feelings, nuanced by experience, encourage a certain relationship with people; at the cognitive level, where well-established beliefs affect the approach to information and learning; at the level of action, where experiences of success encourage taking action, either in terms of a business project, creation, or even growth.

In other words, be convinced that it is up to you to put in place the means necessary to carry out your projects. Know how to find the "right people". Be on the lookout for opportunities and be ready to seize them. Remain flexible to adapt. Quickly structure your strategic thinking and rely on your intuition and decisiveness. Prioritize global and dynamic planning. Quickly take action.

In addition, personal factors will push to action or hasten the decision to start a business project: too much energy or experience to exploit, having time or money to grow, the discovery of an opportunity, a facilitating infrastructure; the same is true of breaks in the course of one's personal or professional life: blocked progress, loss of job, mid-career reorientation.

Other factors can also hold you back from going into business: an opportunity cost deemed too high, a promising career, a satisfying job, lack of experience, age, family responsibilities.

Contrary to many claims that the entrepreneur is an innovator and that modern entrepreneurship is the main source of innovation, it is found that the typical entrepreneur, the one who creates the big companies with which we all do business days, is someone who has thought about this option for more than two years, who has chosen an area or sector where he had knowledge and experience, and whose project has few elements of real innovation . Most of the time, the idea

of the service already existed, and the entrepreneur believed that there was a sufficient market there to support another company in this field. A number of entrepreneurs exhibit a service of "high tech" elements and induce that the research and development had been carried out by them.

Some authors have also begun to relate this state of affairs in their works. Among others, Bhidé (Bhidé, A., 2000), who, having studied the 500 American companies with the strongest growth, noticed that the latter were not the result of exclusive and innovative ideas. Moreover, their founders were not very well trained and did not have considerable amounts of capital to provide. (Fortin, PA, 2002).

To succeed in business, you have to sell! This adage of entrepreneurs and experienced business people is confirmed once again in digital entrepreneurship. Entrepreneurs who have successfully made their business operational and profitable within the first three years have all been able to sell their product or service quite early in the start-up process, usually within two years of starting operations. These entrepreneurs who created their business from a simple product or service concept, in a field they mastered, thus had an easier time satisfying the needs of a targeted clientele, and therefore more accessible.

This is a situation that obviously seems obvious, but which is often unfortunately overlooked by many business creators, especially in the digital fields, where the nature and originality of the product takes precedence over the market. . Moving from a product orientation to a market orientation is not within the reach of all potential entrepreneurs, especially in specialized fields. However, those who are quick to succeed soon realize that revenue comes from sales, with that same revenue being reinvested into growing the business.

As we know, entrepreneurs are often ambitious and reckless, and it takes a good dose of it to create a business. The question is how to adjust these two characteristics to the planned project. A project of which we do not master the elements in a field that evolves with the speed of light is difficult to carry out, even more so if it is a new and complex activity such as the creation of a company. The winning strategy in these situations is often small steps. This is the advice given by entrepreneurs who have managed to make their business operational fairly quickly: start slowly, carry out profitable operations as quickly as possible and develop at a reasonable pace.

This strategy makes it possible to manage in a certain way the insecurity generated by the status of entrepreneur. Indeed, the vulnerability of young businesses to external elements, the impacts of which are difficult to control, leads entrepreneurs into sometimes precarious situations. Bhidé (Bhidé, A., 2000) also makes the distinction between tolerance for ambiguity, which is this ability to accept not knowing what will happen in the future, and risk. Since entrepreneurs have become objects of study, one of the characteristics attributed to them is that of risk taking. However, it seems that it is more the tolerance for ambiguity that characterizes entrepreneurs, that is to say their ability to take action without necessarily having all the information,

Many potential entrepreneurs, at least those who have already thought about starting their own business, often mention being blocked in their ambitions by a lack of means, especially funds. However, several studies, including this one, explicitly show us that most successful entrepreneurs actually had few means, including very limited financial capacities at their

disposal. Even if the lack of funds was often their initial fear, they managed to create their business and bring it to the stage of profitability in less than two years, with very limited personal funds, often almost non-existent. Obviously, many of these business projects are found in service sectors where start-up investments are often less demanding.

In terms of human resources, we also see that most did not hire any staff at the beginning, or hired few people, and did not plan to do so in the near future. In addition, even if many have invested many hours in starting the business, we see that they have not exceeded the average in this area either.

One of the reasons why most entrepreneurs have not invested more than forty hours in starting their business and in its development, lies in the fact that they have maintained another full-time work activity. or part-time. This approach can actually slow down start-up activities, but it still provides some financial security and ease of life for budding entrepreneurs. This situation is also explained by the fact that the majority of these entrepreneurs did not have external financial means allowing them to devote all their time to business creation activities.

several studies have shown that entrepreneurs are mainly motivated by the need for accomplishment or personal achievement, by the desire to become their own boss, by challenge, power, money, etc. Without denying the importance of these legitimate motivations among the entrepreneurs in this study, it is above all practical reasons combined with an environment of stakeholders that led them to take the digital entrepreneurship highway.

Chapter 3: The foundations of management models

We can find the foundations of management models in the history of management. This is punctuated by three major developments - scientific management; human relations ; structural analysis - and resulted in a naturally abundant literature (Etzioni, 1964; Guillen, 1994a; Guillen, 1994b; Perrow, 1988; Scott, 1987) and major key works (Barnard, 1938; Fayol, 1916; Follett , 1918).

Apprehended a management model is an organizational ideology, scientific management consists of a set of techniques developed to solve a number of organizational problems. The proposed model is based on the rationality of the actors and on the definition of a single, unique way of management, the famous one best way. Born in the first half of the previous century, the model of human relations gives a central place to the human dimension. Individuals are seen in this regard as managerial and non-selfish, endowed with group identities and emotional dependencies, emanating from psychosocial norms and needs. The model thus integrates individual and social characteristics, retains rationality while limiting it and takes into account contingency and the visible hand of managers.

Appeared in the 1960s (30 years before the beginning of the first era of digital entrepreneurship) in relation to the proliferation of large bureaucratized firms, the structural analysis model indicates that the analysis of technology and competitive environment should guide the design of the organizational structure. Similar to the human relations model, it postulates the bounded rationality of organizational actors and believes that professional managers have responsibility for the organization, based however on contingent factors.

Consideration of values and people is also at the center of management models stemming from corporate social responsibility. Four approaches characterize this (Boudier and Bensebaa, 2008). The first approach is based on ethical theories. Bowen (1953) is considered according to Carroll (1999: 269) model management by being the first author to have defined the social responsibility of the modern company, by underlining what is desirable for the company. This approach makes the responsibility of the individual leader a crucial theoretical point. Are considered in this respect, on the practical level, the "right" actions launched by the leaders of the companies. Substantial contributions emerged in the 1990s (the beginning of digital entrepreneurship) to propose a formalized system of what is desirable, based on economic, social and environmental responsibilities. This so-called trial system of 3 Ps (profit, people, planet) has spread, in a substantial way, to companies, States and various social groups. Work has also been carried out to analyze the absolute requirements, basing the behavior of responsible companies in the social and environmental spheres. This has led to the development of approaches linked to universal rights to sustainable development. Establishing what is desirable for society is also addressed by normative stakeholder theory. This theory,

The normative theory of stakeholders considers in this respect that the responsibility of the company is not towards society taken as a whole, but only towards the stakeholders considered legitimate.

The second approach is related to instrumental theories. This approach fundamentally studies corporate social responsibility as a management model and strategic tool for wealth creation and concerns the theories that emerged in the early 1960s in response to the debate on the nature of corporate social responsibility. , launched a few years ago. The main contributor to this current is Friedman (1970), who, adopting the approach linked to shareholder value, considers that the maximization of profit is the sole responsibility of firms. It is also interesting to indicate in this context the studies on the management of (political) risks related to corporate social responsibility, and aimed at protecting the firm from external threats, and those allowing to take advantage of external opportunities (development of new products through partnerships with NGOs). Moreover, studies recommend that firms consider a group as stakeholders only if they depend on its resources.

The third approach relates to integrative theories. This approach focuses on the management of critical social issues, on the principle of public responsibility, on the management of stakeholders, on social performance and examines the way in which companies integrate social demands by considering that companies depend on the society for their existence, sustainability and growth. Social demands are generally considered as illustrating the interaction of society and firms and granting them legitimacy and reputation. Consequently, companies are pushed to take these demands into account and to integrate them in such a way as to make their activities correspond to the social values of the moment.

Finally, the last approach relates to political theories and suggests that companies have social power and must use it in a responsible way. Social power can be defined as the ability to influence the outcome of societal processes relevant to the solution of public issues, independent of political institutions. What is emphasized, compared to theories focused on social demands, is the responsibility of companies to play an active and socially positive role. Subsequent to the introduction of concepts such as corporate constitutionalism and the integrative social contract, this approach led in the 1990s and 2000s to the theory of corporate citizenship, from which emerges the local community as the main element. .

In addition to generic management models and those derived from corporate social responsibility, the socio-economic approach to business and enterprise management (Savall and Zardet, 2005; Savall et al., 2009) also deserves attention. . Focusing on dysfunctions and hidden cost-performance, it considers that the human activity of an organization simultaneously produces correct functioning (ortho functioning) and anomalies or disturbances (dysfunctions). Any company generates, at any time, good products which feed its profitability and prepare its development and undergoes disturbances which absorb part of its energies and its financial resources, causing a shrinkage of its results.

However, whether it be the generic models mentioned above or the contributions emanating from these models and corporate social responsibility made over the past few decades, the emphasis has been placed primarily on leadership, to the detriment of management, understood as the day-to-day work of defining objectives, motivating individuals, coordinating activities and designing decisions (Birkinshaw and Goddard, 2009). Then comes the MANAGEMENT

MODEL as a tool for organizing organizational activity in order to meet the desired requirements.

Table N°5: typology of definitions of the Management model

Concept	Contents
Theoretical model	**Offers the principles of a management theory: scientific management, human relations, structural approach, resource theory*, corporate social responsibility.**
Instrument model	**Support on a management tool: balanced scorecard, Lean Six Sigma, EFQM, etc.**
Business model	**Expression of a mode of operation, principles and values based on the development and success of a company**
Model of values	**Expression of strong values to which a company tends, often in relation to its history and its culture. Example: the insurance firm MAIF defends its positioning as an activist insurer by proposing a tree of values.**
Strategic model	**Declination of the organization's strategy at a given time. Example: Renault's model is defined by its "Renault Commitment 2009" strategy, which aims to make the French company the most profitable general car manufacturer.**
Business model	**Promotion of the business expertise of the company with a view to know-how, quality and customer service. Example: the industrial company Vallourec displays the slogan "World leader in the production of seamless steel tubes".**

The different meanings of Table N°5 can be categorized into theoretical models and applied models. The first want to be standard and universal but do not constitute an identity and a singularity. Although the resource-based management model relies precisely on idiosyncratic resources, but the analytical approach underlying it is not singular. The latter, from companies, are very close to the reality on the ground. Their strong focus (on strategy or values, for example) reduces their generalizing scope.

Entrepreneurial management is part of a procedural definition of entrepreneurship, leads us to study the identification and pursuit of opportunities when the necessary resources are not (necessarily) controlled by the subject. This postulate has strategic consequences: the

individual or organizational entrepreneur is not content to make the most of available resources. It also has operational consequences: the entrepreneur will have to set in motion a set of processes in order to gather the resources he needs.

We are currently witnessing the emergence of another project management model, adapted to competition through repeated "intensive innovation" (Chapel, 1997; Hatchuel & al, 1999). The acceleration of the pace of technical change or the desire to accentuate product differentiation, in fact lead companies to develop increasingly innovative products, in their components and/or in their architecture. The projects are then based very directly on the research and/or the pre-projects, contrary to the hypotheses founding the effectiveness of the heavyweight model. This shift has been analyzed by recent research (Ciavaldini, 1996; Chapel, 1997; Brown & Eisenhardt, 1997; Iansiti, 1998; Ben-Mammoud-Jouini, 1998; Le Masson, 1999; Lenfle, 2001) who study the management of highly innovative projects (modular or radical innovations of the typology of Henderson & Clark, 1990). After showing the problems posed by this backward shift in design processes, we will present the contribution of this research.

1-Challenges of innovative design in Management

The shift to an intensive innovation regime raises new questions for design management. The challenge here is no longer to succeed in an isolated project, but to be able to market a steady flow of new, highly innovative products. As shown by Ben Mahmoud-Jouini (1998), the manager must therefore be simultaneously interested in the articulation of three spaces:

Innovative offers under development. The aim here is to develop the knowledge necessary for the development of the offer and to coordinate the contributions of the various actors involved in development. The project is the typical organizational form for the development of innovative offers.

Skills that serves both as "sources of the developments of innovative offers and [is] a result of these developments" (Jouini, p. 249). The projects will indeed use the company's knowledge and skills to achieve their objectives. But, at the same time, the project is a place of creation of new knowledge which, in turn, could be used by the company within the framework of its current activities or other developments.

Strategy that drives the two previous spaces. It will consist in selecting the projects on the one hand and on the other hand in defining the skills to be acquired or developed.

Developments at the same time as we design the products. This leads to a crisis of the traditional research-to-development model. The concurrent model as we have previously described it refers to a design management model that clearly distinguishes two roles:

• Researching the design of technical innovations based on the exploration of specific scientific fields (physics, chemistry, materials, etc.);

• The development of the realization of these innovations once the concept has been validated by research.

Between the two takes place a transfer process ensured in particular by the participation of actors from research to development.

One of the advances of recent research is precisely to show the inadequacy of this model in the current context of competition through "intensive innovation". The work of Hatchuel (1996) and Hatchuel & Weil (1999), in particular, shows the need to think simultaneously about research and development. It is the interaction of the two dimensions that makes it possible to find a middle way between the two pitfalls which are, on the one hand, research disconnected from market trends and, conversely, research totally driven by short-term concerns and unable to offer truly innovative offers.

This is in line with the conclusions of research conducted by Marco Iansiti (1998) on the development of new products in the computer industry (mainframes, components such as microprocessors, software). In this hyper-dynamic technical environment Iansiti shows the inadequacy of the traditional design management model. In this context, there is indeed a good chance that the concept developed by research will be outdated once marketed. In addition, the separation between research and development is a source of additional delays. It is reflected in particular by the late discovery of the problems of implementing new concepts on an industrial scale. The reader will note that we find there, but this time shifted upstream of the design, the problems that had led to the adoption of the concurrent model following the difficulties encountered by the standard model. The concurrency principles set out above therefore retain their relevance; what will pose a problem is their implementation. While it used to be a matter of integrating product design and process design, the challenge now is to operate this integration between product development and preliminary projects and/or research.

These different studies actually underline the growing role of the upstream phases (research and pre-project which corresponds to the area of skills in the previous diagram) in the design process (Ciavaldini, 1996). From the moment when, given the commercial constraints that weigh on it, the project is only the place of assembly of already validated solutions, saving time and creativity can only be done by reorganizing the upstream phases and the pre-project/project report. This is what Jouini & Midler (1999) show in their analysis of the evolution of project management methods in different industrial sectors. For them, the tensions in terms of project management have clearly moved towards the organization of the creation of knowledge outside the project (the space of skills), in order to accelerate the progress of ever more innovative projects. Indeed, when the evolution of techniques is too rapid or the uncertainty is too great, the separation between the elaboration of the concept and its development, the basic assumption of the model developed by Clark & Fujimoto, is no longer possible. conceivable. On the contrary, the company must seek to delay as much as possible the freezing of the "concept" in order to be able to modify it based on the knowledge developed along the way. It is by carrying out research and development at the same time that we can quickly market a stream of innovative products. basic hypothesis of the model developed by Clark & Fujimoto, is no longer conceivable. On the contrary, the company must seek to delay as much as possible the freezing of the "concept" in order to be able to modify it based on the knowledge developed along the way. It is by carrying out research and development at the same time that we can quickly market a stream of innovative products. basic hypothesis of the model developed by Clark & Fujimoto, is no longer conceivable. On the contrary, the company must seek to delay as much as possible the freezing of the "concept" in order to be able to modify it based on the

knowledge developed along the way. It is by carrying out research and development at the same time that we can quickly market a stream of innovative products.

2-Organization of design for intensive innovation

The organization of design for intensive innovation is a relatively recent subject of study in management science. Recent research highlights three central themes: the link between development projects and the upstream phases, the management of upstream projects which, as we will see, differs radically from product development projects, and finally the question of the strategic management of the design process.

The upstream / development phase articulation

The new role granted to the upstream phases leads to rethinking their organization to enable them to meet the objectives of the competition through intensive innovation. We then see the upstream phases being structured around new "objects" which will make it possible to federate energies while organizing relations with development projects. It may be a subset or a function of the vehicle in the automotive industry (Weil's multi-business networks, 1999) or even a job in the pharmaceutical industry (Charue, 2000). We can then find around these new "objects" a projected functioning insofar as it is possible to set objectives and measure progress. Note, however, that the objective here is not to develop a complete product but what Moisdon & Weil (op. cit.) call "semi-finished products". This is an intermediate state between research and the industrial prototype. Using the new technique, they correspond to a potential application and have undergone validations which make them a credible proposal to submit to the customer. The different applications of this concept will constitute as many contextualizations which, in turn, make it possible to enrich the semi-finished product and make it more robust. The example of Philips Car System (PCS) studied by A. Kesseler is typical of this organization: between the two poles of research on basic technologies (provided by the various Phillips laboratories) and development projects, PCS develops platforms that serve as the basis for product development. A platform is thus used by several projects which, in return, enrich it. It makes it possible to test new techniques before integrating them into the various products.

We are thus seeing the emergence of new types of projects whose objective is to prepare developments by designing semi-finished products that exploit technical advances.

Upstream project management

Still, the piloting of this type of project differs radically from that of a development project. The whole difficulty here is to simultaneously explore the technical possibilities and the use values of an innovation and/or the integration problems it raises. Nothing therefore makes it possible to determine ex-ante the progress of the project, which makes any separation into distinct tasks or determination of ex-ante objectives impossible. This radical uncertainty upsets management methods. Current research highlights four major changes in the organization of upstream phases (Lenfle, 2001):

Management tools allowing a reformulation of the problems along the way. "Classic" project management organizes convergence towards an objective defined ex-ante. The design heuristic is quite different here. Initially, the exploration is guided by a problem which can be the

development of a technology or, on the contrary, the satisfaction of a customer need. The process of exploring an answer will generate knowledge that can completely question the relevance of this question or problem. Exploration is not a journey from a question to an answer, it is an exploration of an adapted question-answer couple that can evolve along the way. In the absence of a clear objective such as the realization of a product, and given the uncertainty inherent in any innovative process, it is difficult to determine whether a project is progressing or not. Performance is judged here on the increasing return of iterations (Lenfle, 2001). The gradual focusing of attention around recurring questions, which appear as obligatory points of passage (Vissac-Charles, 1995), constitutes a good indicator of the progress of the project.

A knowledge/action dialectic. Unlike development projects that exploit the company's skills, POIs are characterized by high uncertainty. It then becomes difficult, if not impossible, to anticipate the problems that could arise based on past experience, or through cooperation between players very early on. The elaboration of a research program must then be understood as a temporary structuring of the field to be explored, which will make it possible to begin learning (Van de Ven & al., 1999). The challenge is then to test these initial ideas. Here we find the theories of design and innovation (Lynn & al., 1996; Brown & Eisenhardt, 1997; Thomke, 1998; Hatchuel & al. 1999; Van de Ven & al., 1999) which underline the need for action in the absence of clear preferences, action which will make it possible to discover the problems and the solutions. It is by trying that we can judge the relevance of the representation of the issues that guided the development of the initial research program, and that we discover the real interest of the innovation. We therefore believe that the test, both an event that creates knowledge and a tool for coordinating actors since it allows deadlines to be created, must be the unit of work at the center of the management system. The intensity of learning will indeed depend on the team's ability to generate, carry out and exploit a continuous flow of challenges over a period of time. It is by trying that we can judge the relevance of the representation of the issues that guided the development of the initial research program, and that we discover the real interest of the innovation. We therefore believe that the test, both an event that creates knowledge and a tool for coordinating actors since it allows deadlines to be created, must be the unit of work at the center of the management system. The intensity of learning will indeed depend on the team's ability to generate, carry out and exploit a continuous flow of challenges over a period of time. It is by trying that we can judge the relevance of the representation of the issues that guided the development of the initial research program, and that we discover the real interest of the innovation. We therefore believe that the test, both an event that creates knowledge and a tool for coordinating actors since it allows deadlines to be created, must be the unit of work at the center of the management system. The intensity of learning will indeed depend on the team's ability to generate, carry out and exploit a continuous flow of challenges over a period of time. both a knowledge-creating event and a tool for coordinating actors since it makes it possible to create deadlines, must be the unity of work at the center of the steering system. The intensity of learning will indeed depend on the team's ability to generate, carry out and exploit a continuous flow of challenges over a period of time. both a knowledge-creating event and a tool for coordinating actors since it makes it possible to create deadlines, must be the unity of work at the center of the steering system. The intensity of learning will indeed depend on the team's ability to generate, carry out and exploit a continuous flow of challenges over a period of time.

The central role of knowledge management. Upstream, each test (research sheet, customer study) associates a knowledge production process with a turnover creation process. A management system must then take into account these two different dimensions of performance (Lenfle, op. cit.). Thus, a study can lead to the commercial plan, without bringing any new knowledge other than the existence of a specific market for this part. Conversely, another may not lead to a turnover but generate decisive knowledge on the understanding of the technique or the definition of its potential field of application. This makes it possible to increase the yield of the exploration at each iteration. Depending on the accumulated knowledge, technical uncertainties are reduced, the tests to be carried out become clearer, as do the potential applications… and little by little the exploration converges or stops if the technique turns out to be less interesting than expected. We then understand the central role of knowledge management, which should make it possible to enhance the knowledge generated by the project for its own progress but also with other projects in the organization (Lenfle & Midler, 2001).

The importance of the temporal focus of exploration Innovative projects take place in an extremely dynamic competitive environment. Use values, strategies and technologies move at the same time as they are explored. The answers that are satisfactory at a given time are no longer so some time later because the questions evolve as they are studied... Dealing with the different explorations sequentially therefore increases the risk that a partial answer, a moment adequate, is no longer so once the other dimensions of the problem have been resolved. Here we find the idea of concurrent engineering, but the objective is not so much speed to market (key argument in low uncertainty developments) as increasing the probability of success (the desynchronization of the "technical" and "market" dimensions increases the risk never to converge). As in the field of "classic" new product projects, the application of this principle is generally in contradiction with a logic of resource management which seeks to smooth out the workload. Here, in fact, the projects concentrate significant resources at the start, even if it means stopping suddenly once the certainty (rapidly) has been acquired that the innovation is not promising in the current state of the context.

Finally, it remains to address the issue of strategic management of the design process. The selection of projects and skills to be developed is indeed a key moment in the design process. Without going into the details of a complex literature, we can distinguish two major types of non-exclusive strategies.

The first seeks to make maximum use of the firm's skills to develop lines of innovation. A lineage is defined as "the alliance between a type of product, or more generally a type of profit opportunity and a set of skills necessary to design and sell this type of product. In dynamics, a line represents both the succession of projects for new products and the accumulation of knowledge, apprenticeships in the professions relating to these products" (Hatchuel & al., 1998). The case of Tefal studied by V. Chapel (1997) is typical of this strategy which consists in systematically exploiting the skills of the company to market new products.

Another strategy will consist of spreading the risks associated with the various developments by diversifying the project portfolio. This is for example the case of the pharmaceutical industry which, given the low probability of success of the various new drug projects (less than 5%), is obliged to simultaneously launch a large number of explorations. The whole difficulty is then

to manage the project portfolio, which will suppose the development of selection methods adapted to the context of the upstream phases (Cooper & al., 1998).

Chapter 4: Case Study, Discussion and Results

In this chapter we present the convenience sampling of global digital companies: Google, Facebook, Airbnb and Binance. Then let's analyze their management models.

1-Presentation of the sample

1-1 Google

It was in 1995 that the 2 founders of Google Larry Page (then 22 years old) and Sergey Brin (21 years old), computer science students at Stanford University in the United States met.

A year later, freshly graduated, they decided together to create a search engine. Called BlackRub, this first tool took the name of Google in 1997. The term Google is directly inspired by the number 1 followed by 100 zeros, in English "Googol" or number "Gogol", which describes Page and Brin's ambition to create a search engine to organize a huge volume of information.

Google Inc. was then created on September 4, 1998, thanks in particular to funding from Andy Bechtolsheim (one of the founders of Sun Microsystems and an extraordinary investor who had detected the already immense potential of the work of Page and Brin, in particular on their invention PageRank technology).

The continuation of the adventure of Google's debut continues in Menlo Park in Susan Wojcicki's garage, which she rents to the 2 acolytes soon joined by Craig Silverstein, also a former Stanford student.

Less than a year later in February 1999, the company already had 8 employees and moved to more appropriate premises in Palo Alto.

It was in August of the same year that the Google company made its mark in the so-called Mountain View district in California. It is therefore only a few kilometers from their former university that the team set up the world headquarters: the Googleplex at 2400 E. Bayshore, also not far from Silicon Valley.

In June 2000, Google signed a partnership with Yahoo! and has over a billion URLs already in its index.

In October the very first Adwords service was launched and in December the firm set up the now famous browser toolbar which allows each user to no longer have to go through the search engine's home page to perform a search.

The year 2001 is that of the arrival of Eric Schmidt as Chairman of the Board of Directors and then his appointment as CEO. At the end of the year, the Google index is estimated at more than 3 billion documents.

Launch of Google News in September 2002 and of Froogle which will become Google Shopping.

In 2004, the index rose to more than 6 billion entries and the company had more than 800 employees.

In August 2004, Google entered Wall Street with a stock price of $85 at the opening.

In February 2005, Google inaugurates its service which offers satellite images and routes: Google Maps.

Summer 2005, Google search on mobile phones is finalized and Google Analytics in November.

In 2006, Google Trends was created and allowed Internet users to find out about current research trends. In October 2006 Google bought YouTube.

In 2007, these were the beginnings of what would later become Universal Research (research integrating results in various formats: images, videos, news, books, news).

In July 2008, it was during the Tour de France that images from Street View were used for the first time in Europe. The index now has over a trillion unique URLs.

Autumn 2008: a new practical feature appears: semi-automatic completion, which avoids spelling mistakes and saves time when the Internet user types a request.

The open source Chrome browser is unveiled in September.

At the end of 2009, a total of more than 51 languages are now available in Google Translate.

June 2010, the implementation of Caffeine allows the indexing system to be much faster and to provide Internet users with more recent results.

At the start of the school year in September 2010, Google set up instant search to display results as the Internet user types in his request.

In January 2011, Larry Page, co-founder of Google, was named CEO of Google. Eric Schmidt, the former CEO, then took over as Executive Chairman.

In February, it is the filter of the algorithm of the name of Panda which is born and impacts almost 12% of the requests.

In December 2011, Google opened its very first offices in France in Paris.

Google continues to grow from year to year and is much more than just the search engine of its beginnings. In 2013, Google wants to expand into the robotics sector and buys 8 specialized companies.

In 2014, Google bought a startup specializing in the field of video games.

In 2017, Google paid Apple $3 billion to continue being the default search engine for iOS devices.

In 2018, Google launched "Google Pay" for Android users.

In 2019, Alphabet (Google) completed two notable company purchases: Fitbit, a company that develops fitness trackers, and Looker, a cloud company.

Google inspires a number of remarks, the main ones being linked to its position as a web monopoly; the other players, the former Altavista and the current Bing and Yahoo not being able to fight against the Mountain View firm.

On December 4, 2019, the founders of the search engine, Larry Page and Sergey Brin, announced their departure from Alphabet (parent company of Google).

They believe that Alphabet and Google "no longer need three heads" and therefore leave the reins to Sundar Pichai, the current CEO of Google.

In 2021, the company is valued on the stock market at $1.185 billion and has more than 103,500 employees around the world.

Google continues to improve its search engine daily. As presented in this article, it is far from being the only activity of the Mountain View firm.

1-2 Facebook

On February 4, 2004, Mark Zuckerberg, 19, a student at Harvard University, near Boston, launched TheFacebook with three roommates, an online gallery that was quickly exported to other establishments.

In May, Mr. Zuckerberg left Harvard and moved to Silicon Valley.

Facebook arouses envy

The social network, renamed Facebook, received $500,000 in July (almost as much in francs at the current rate) from investor Peter Thiel, then, the following year, $12.7 million from the Accel Partner fund.

The success of Facebook arouses the greed of Viacom and Yahoo, which in 2006 tried to buy it for respectively 1.5 and 1 billion. Offers rejected.

It is also the time of the first controversies. In December, Mark Zuckerberg apologizes for privacy "mistakes" made with a new advertising system, Beacon.

Facebook had 100 million members in mid-2008, dethroning MySpace on the social network charts.

Facebook launches its Spanish, German and French versions and, taking advantage of the boom in tactile smartphones, releases its first mobile application the following year.

Now claiming 300 million members, the network says it generates enough cash to cover its operating costs.

Organizations defending the rights of Internet users filed a complaint at the end of 2009 against Facebook's lack of confidentiality.

Faced with the sling, Mark Zuckerberg admits in 2010 "a package of errors". The social network will sign an agreement at the end of 2011 with the American authorities, its privacy practices will be monitored for 20 years.

"The Social Network" by David Fincher was released in October 2010 at the cinema, delivering the portrait of a Mark Zuckerberg who betrays his comrades, in particular the Winklevoss twins, with whom he created Facebook. Justice will validate the following year an agreement to 65 million dollars concluded with his accusers.

In December 2010, Mark Zuckerberg was named Man of the Year by Time magazine.

The social network acquired the photo-sharing site Instagram in 2012 for $715 million. It will offer in 2014 the mobile messaging application WhatsApp for 19 billion.

On May 18, 2012, Facebook raised $16 billion in the biggest IPO ever by a technology company, valuing it at $104 billion. But the action disappoints and falls to its historic low in early September, at 17.73 dollars. It will quickly raise the bar, peaking at nearly 380 dollars in September 2021 and exceeding 1,000 billion in capitalization.

Facebook surpasses one billion members at the end of 2012.

At the end of 2021, Mark Zuckerberg announced that Facebook's parent company was renamed Meta. Meta as the Greek word for "beyond", but also as metaverse, the virtual world which he believes represents the future of the internet.

1-3 Airbnbs

It was at the end of 2007 in San Francisco two young Californian designers Brian Chesky and Joe Gebbia created the AirBed & Breakfast concept. They got the idea while living in San Francisco. They knew a major design convention was coming to their city, but all the hotel rooms had been booked. They then decided to rent a room in their apartment with three inflatable mattresses (air bed), a breakfast (breakfast) and a local welcome to a few foreigners attending the event. From there remained the name "Air bed and breakfast".

In February 2008, Nathan Blecharczyk, a Harvard University graduate and technical architect joined them and became the company's third co-founder. During the early stages of setting up the company, they focus on high profile events where it is difficult to find a place to spend the night. The Airbedandbreakfast site was officially launched on August 11, 2008.

In order to finance the website, the three founders created a special edition of breakfast cereal boxes, drawing inspiration for the design of the American presidential candidates of the time, Barack Obama and John McCain. They thus create the "Obama O's" and "Cap'n McCain". In two months, 800 boxes of cereal are sold at 40 dollars each and they thus earn more than 30,000 dollars for the development of their business. They are then noticed by the co-founder of the startup financing company Y Combinator Paul Graham. They transformed their site in November 2008 and offered properties between the hotel market and the CouchSurfing market. In January 2009 Y Combinator invites Brian Chesky and Joe Gebbia and Nathan Blecharczyk to join its incubator of undertaken during a three-month training course. While the website is already created, they use the $20,000 in funding allocated by Y Combinator to go to New York to meet users and advertise the site.

In March 2009, the name "Airbedandbreakfast.com" was shortened to "Airbnb.com". The site's content expands from shared spaces with air mattresses to entire homes and apartments as well as private rooms. A year later, fifteen people work in Brian Chesky and Joe Gebbia's loft in

San Francisco. The company grew rapidly during the year and in November 2010 raised $7.2 million with funds from Greylock Partners and Sequoia Capital. The three founders then announced that out of 700,000 nights reserved on their website, 80% took place during the last six months. In July 2011 the company raises 119.8 million dollars.

Three years later In July 2014, the design of the website, as well as the mobile application, were reviewed and a new logo was created. In March 2015, Airbnb raised a new round of financing that valued the company at $20 billion.

In March 2017, following new fundraising, Airbnb's valuation rose to $31 billion.

When the 2020 economic crisis linked to the Covid-19 pandemic brings a halt to travel around the world Airbnb sees its turnover fall sharply and estimates its income reduced by half compared to 2019. Brian Chesky declares in an email sent to employees: "We are collectively experiencing the most atrocious crisis of our existence". As a result, Airbnb is raising nearly $2 billion. Nevertheless, the company laid off a quarter of its employees worldwide, i.e. nearly 1,900 people out of around 7,500. In May 2020, its valuation fell to 18 billion dollars the group postponed its IPO following the health crisis of Covid-19. However, a resumption of local tourism in short stays gives hope to Airbnb which finally files a file of

This IPO finally takes place in December 2020. The company, which had valued its share at $68, sees it end the IPO day at nearly $146 on Wall Street, i.e. 115% of its initial valuation and recovers in passing $3.4 billion in new money. Airbnb is now valued at $100 billion according to Bloomberg.

1-4 Binance

Binance is a digital currency wallet and global cryptocurrency exchange that allows you to buy, sell, and store over 600 cryptocurrencies.

The site was launched on July 14, 2017 in Hong Kong. The CEO is Changpeng Zhao (known as "CZ"), who will become a billionaire in a few months and will be on the cover of the American financial magazine Forbes in February 2018.

Since the beginning of 2018, Binance has been considered the largest cryptocurrency exchange in the world by volume.

On April 2, 2020, Binance officially announced the acquisition of the cryptocurrency market data provider CoinMarketCap (570th most visited site in the world) for an amount that will not be made public. The company announced, the same month, its intention to launch its own non-fungible token marketplace where users can create, buy and sell digital collectibles.

As of April 2021 Binance is the largest cryptocurrency exchange in the world by sales volume.

Table N°6: the financial figures of the sample

Business	Creation date	2021 revenue in $bn	net income	October 2022 market capitalization in $bn
Google	1998	257.63	76.03	1320
Meta formerly Facebook	2004	117.92	39.37	349
Airbnb	2008	5.99	-0.35	76
Binance	2017	15.2	12.9	56

2- Analysis of the Management model

2-1 Google

In order to improve the performance of the company, the founders of Google were able to find a formula which preserved them with wide margins of autonomy while sheltering them from some of the most frequent faults among managers, including that which consists in surrounding oneself with docile collaborators.

Mutual respect and admiration. Engineering culture and concern for ethics. Decision-making and informal coordination mechanisms are all ingredients found throughout the analysis of this method of business management.

"Google only wants to recruit the best" can be read on the pages of the site devoted to recruitment. A very particular context of an IT industry which, when the economic situation is favorable to it, is the seat of universities to hire students.

Money is not the only driving force behind doctoral students: they have proven it by preferring their studies to a well-paid job. They are therefore more motivated. More rigorous. But the founders of Google trust math and rationality more than any other. The experience of their research has taught them autonomy and controlled innovation.

The crisis of the Net economy in 2001 allowed the recruitment of excellent inexpensive engineers (paid in shares). The importance of recruitment at Google can be measured: in 2005, 1 employee out of 14 was employed in recruitment (1% in traditional American companies). In a rapidly growing company, the quality of recruitment is essential. Increase in staff should not rhyme with degradation of human capital.

Ram Shiram (one of Google's first investors): "Recruit big names and they will hire other big names. If you recruit less good people they will recruit mediocre or bad people".

Google has developed its originality in the recruitment process with an industrially organized recruitment process management (recruitment segmentation). The selection process is the most original: up to 8 peer interviews to assess the technical capabilities of the candidate and the ability to understand and solve the technical problems of the company.

The mechanism is based on peer review: proposing ideas to colleagues. It thus gives priority to ideas likely to interest the company, which will work seriously on their realization. This intrinsic motivation implements a triple lever: recognition, self-monitoring system (if I'm good,

I can release 20% of my time) and challenge in terms of reputation (convincing respected colleagues of the relevance of one's ideas).

In the same spirit, the working environment made available to employees is a way of making them stay longer by providing them with a healthy lifestyle.

The team that has developed a project presents it for validation to colleagues from other departments and not to the hierarchy. This group of colleagues selects the projects and stops certain research. It is a non-academic use of skills which strongly favors the involvement of the oldest engineers in these working groups.

These peer reviews help create a parallel hierarchy based on technical competence and reputation (transversality). Eric Schmidt: "If you don't want to lose your geeks, you have to find a way to offer them promotions without making them managers".

This peer review is also a tremendous vector of quality. In-depth discussions between colleagues promote the emergence of a common language (essential in computing).

This principle requires writing the documentation at the same time as writing the code. This is true for the tests and all the quality control too: it is no longer entrusted to specialists within the framework of a traditional division of labor but supported by the working community.

This work model therefore has advantages (quality, exchanges between colleagues, product management, very motivating), but also disadvantages (takes time and energy, development of political behavior, clientelism, alliances between experts).

Google's Swiss army knife makes each tool autonomous. It does not replace the existing, but enriches and completes it. This approach requires the development of small tools. It allows users to choose the tools that suit them.

At Google, it is the search function that plays the role of the articulation of the knife tools (with an interface as simple and recognizable as the red knife with a white cross).

Google's offer has evolved over the past few years in two parallel directions:

The improvement and segmentation of research (tailor-made) and The development of tools that aim to make Google the basis of a workstation

Confidence in figures is evident everywhere: pricing policy, decision-making, exchanges between engineers and choices for developing new products. Computing power is used for the most day-to-day management. User behavior is constantly scrutinized, analyzed and processed. We no longer rely on intuition, but on the data that we make speak, that we explore to better understand but also to predict the behavior of users. The large volumes of manipulated data make it possible to segment the population very finely, to discover niches that would be invisible on narrower samples.

Mathematical culture encourages abstraction, seeking the general behind the particular. Google interests the scientific community in its problems, which have become thesis subjects for researchers.

At Google, nothing can be advanced that is not based on data and cannot be proven. This avoids the hazy developments and the most common errors of reasoning: the impression that an event that has just been discovered is recent, that it is repeated frequently, classic confusion between volume and duration (the increase in the number of prisoners in prisons can be explained, for example, by the lengthening of the length of sentences).

However, "span of control" studies lead to the following result: the hierarchical structure is effective if it consists of at least one manager for every 7 employees. This ratio is not applied at Google (it was 1/20 at the end of 2005 and 1/40 at the end of 2004). Northcope Parkinson speaks of the natural propensity of management to inflate the workforce unnecessarily: "the volume of work increases with the number of people to do it".

Brin and Page were able to limit coordination costs (meetings, reports, negotiate and explain decisions, control, etc.) by playing on several parameters such as the 20% rule and above all by creating small, very autonomous teams, by putting at their disposal tools to communicate, exchange and share.

Google's differentiation was to entrust small teams with projects with limited objectives and close deadlines: rarely more than 6 weeks. This model has other benefits, such as improving productivity and efficiency.

Small teams make it necessary to maintain a certain versatility and above all make it possible to reduce control costs. They can be reduced for employees who work in small groups whose mission is better defined and who monitor each other. It is difficult to behave like a "free rider" when everyone is under the gaze of their colleagues. Peer pressure contributes at least as much to team effectiveness as supervising a manager against whom employees can gang up.

Google chose teams of 3 to 6 people. Several studies show that peer pressure in small teams is particularly.

Supervising 20 or 30 people rather than 7 or 10 changes behaviors. No more question of controlling the work of its collaborators in the smallest detail. The manager must go to the essential: to the objectives upstream, to the results downstream, which imposes a management that is more rational than charismatic. The entrepreneurs of the new economy are reversing the classic tendency in all companies to associate knowledge, truth and hierarchical position: the higher one is in the hierarchy, the more things one officially knows, the more what one says is likely to be true or at least judged as such. Intuition, flair, can give way to analysis.

As teams grow, the work of managers grows exponentially. The only solution is then to flesh out the technostructure (bureaucracy). Google has developed an organizational model that is closer to the rosette than to the classic (networked) organizational chart. This is the one imagined by Douglas Englebart in 1992. Computer networks have served as a model for networked organizations. Google's management system continues the tradition of crossing IT models and organizational models.

Part of Google's success comes from its ability to invent or implement a very powerful production system that its competitors cannot copy, simply because it's the company's best-kept secret.

From the huge computing capacity constraint, Google is making a trump card by piling up large amounts of low-end PCs. Redundancy quickly became one of the centerpieces of the plant they

were going to build. The solution to fit all the PCs in one place: very simple cabinets that can be moved. Rather than entrusting distributed computing (network management) to a computer scientist who was a prisoner of yesterday's models, they recruited a doctor, Jim Reese, a neurosurgeon who is interested in medical computing, to apply models to the problems encountered. borrowed from what we know of the organization of cerebral matter. This entire factory is based on a "killer application" developed internally which secures data and the network, facilitates maintenance and upgrades,

One can quickly build an army of PCs with money, but it is much more difficult to quickly develop a system for managing these machines. It is therefore this specificity which constitutes a major barrier to entry. Google has integrated technologies and innovations from other fields.

"Take care of the users first, the rest will follow…" Google is above all the inventor of the automatic selling logic applied in a systematic way. It is the transaction itself that is automated. This reduces transaction costs and makes it possible to reach customers that no one would have gone to see because they were too small. This scalability naturally has consequences in terms of organization and management.

Conflicts between salespeople and marketing teams do not exist (the information produced by the customer arrives directly, tensions between salespeople who want to sell products that sell quickly and marketing those with high margins do not exist) .

This automation also removes an indirect obstacle to innovation by making it unnecessary to train sales staff on new products.

This automation is what most surely puts company managers in touch with their customers and users. It eliminates the biases of surveys and sales reports.

The treatment of customer disappointment is moving from the private domain to the public domain (blogs). The customer exerts a much stronger pressure on the company. The reverse of this automation of the commercial relationship is the emergence of consumer power.

It was not known until the last few years of companies permanently under the gaze of thousands of observers all over the world. Each time that Google is mentioned somewhere, there is a good chance that one of the observers will share it with the members of his group… Google does not have to communicate during a company takeover, for example.

Only 30% of blogs are written in English. A rather particular geography of information is created, with gray areas and terra incognita.

The Internet user is not doomed to take the information at face value: he has immediate access to sources, comments, and reviews.

Google is the first company to have understood the benefits it could derive from these communities and how to make them a source of growth. Google makes Internet users work (indexing images and captions for example, or translating pages; Internet users correct each other).

The search engine has quickly established itself thanks to these communities, real pools of skills from which to draw collaborators. The trends are there, in their raw state, in the conversations that evaluate innovations.

On the diffusion of innovations, the Rogers curve has aged… Franck Bass, often presented as the founder of scientific marketing, has developed another model which is based on three elements: the size of the market, the coefficient of innovation and the coefficient of 'imitation. The coefficients are variable. Basss introduces the notions of skills, learning and duration. Communities have pulled the Rogers curve up and to the left: opinion leaders are more numerous and the depth of their social network is greater.

The notion of conformism replaces in certain evolutions of this model the notion of learning. She explains that these are not the best products that work.

A psychological dimension, propensity to consume, to buy, was also added to the model to improve its predictive quality. Some pioneers are not afraid of risk, but approach each other, inform each other. Communities reduce risk. Communities not only accelerate the adoption of innovations, they help create dominance. But the multiplication of exchanges between pioneers promotes the selection of the best solutions and avoids the development of mediocre products.

Every day, engineers and managers receive detailed reviews of what is said on the company's web, of its products so as to immediately correct defects. Analysts and journalists read these blogs. Questions about strategy eventually convinced the founders to make their goals more clear.

These communities hold their power of influence thanks to their power over the major asset of the company: its reputation. However, a study conducted on eBay showed that a good reputation sells more and more expensively. Other studies in blind tests have shown a clear increase in customer satisfaction thanks to the good reputation of Google.

The communities do not have elected representatives on the boards of directors, such as shareholders or employees. But by giving the floor to consumers who usually don't have it, they move the lines, modify the balance and the balance of power within the company itself, becoming a full stakeholder.

These communities intervene in the political debate, as networks of citizens faced with the lobbying of cable and telephone manufacturers, for example (who want to regulate activity on the net).

Stakeholders are generally associated with the notion of ownership (of part of the company's assets, capital for shareholders, skills and know-how for employees). These communities allow customers and consumers to appropriate this other intangible asset that is the reputation or rather, the brand.

2-2 Facebook

If you have a Facebook account, you may feel like nothing ever changes there. And yet at every moment (or almost) something happens there. Every Tuesday, a new version of the site is put online. "Each month, the equivalent of 12,000 modifications are made", calculates Cyril Vart, vice president of Faber Novel.

The latter considers that one of Facebook's strengths is its formidable technical reliability. These permanent changes are made on a site that continues to produce 24/7. Breakdowns are rare.

For this, the organization is relatively simple. The developers are constantly working on fixing errors and other bugs, while developing new features that they first test on a beta site, before putting them online every Tuesday morning.

When they communicate with each other, the developers do not use a priori the Facebook chat, but a good old IRC chat as geeks love them. "Zuckerberg has a geek culture," recalls Cyril Vart.

Facebook or Meta currently has thousands of developers who work according to three precepts:

- Act fast and break things (move fast and break things in the original version);
- Developers are personally responsible for their codes. It is an exception in the profession;
- Mark is always right.

A recruitment machine: Many people come to Facebook because the company needs skills for its growth, the exit can be quick for those who do not adapt to the house culture.

The working methods borrow more from the culture of hackers than from project management as it is taught.

Sometimes presented as a capricious teenager, Mark Zuckerberg appears above all as someone who knows very well what he wants to do. Nothing less than changing the world thanks to the Internet.

In addition, the founder warned: "if he opens his capital, he does not intend to listen to the shareholders. Moreover, despite the opening of the capital, he remains largely in the majority with more than 55% of the voting rights. " Its main concern is and will remain the users, to whom it intends to offer the best possible service. Here again, listening does not mean renouncing one's prerogatives. User requests are integrated into the existing platform.

Facebook is a concentration of resources on a project, that of its leader: "to make the social web". Other companies would have dispersed along the way, would have used their cash for new adventures. Not Zuckerberg. Resources are first devoted to making Facebook more beautiful, better, closer to users, but not at any price.

Thus, an application that does not work is quickly removed, in the name of the principle of "fail fast, fail often". In other words, we do not go after an idea that does not meet with the expected success. Thus, the attempt at online commerce with Facebook Sales was quickly put aside due to the lack of interest from Internet users.

Similarly, Facebook tried for a while to monetize its audience by applying a Google model, based on the conversion rate of clicks on more or less sponsored links. Again, the lack of user interest got the better of the idea and Facebook developed another model, based on the ability to recommend products to a highly qualified audience.

This choice is still reinforced today. Facebook has now become an ecosystem open to other companies. Facebook is expanding the possibilities on its site, without having to invest on its side. This is how the social game publisher Zygna developed online games.

2-3 Airbnbs

Airbnb follows a model of holacracy, or a kind of flat organizational structure, where teams are organized for projects, to move quickly and iterate quickly, thus keeping a lean and flexible approach. Airbnb has also adopted a hybrid model where employees can work from anywhere and meet quarterly to plan for the future and connect with each other.

The five key features of Airbnb's new organizational design.

In April 2022, Brian Chesky, CEO of Airbnb announced a new organizational design for Airbnb, highlighting "five key features:

- You can work from home or in the office, whichever suits you best.
- You can move anywhere in the country, for example from San Francisco to Nashville, and your compensation will not change.
- You have the opportunity to live and work in 170 countries, up to 90 days a year in each location.
- We will meet regularly for team meetings. Most employees will log in in person quarterly for about a week (some more frequently).
- To achieve this, we will operate on a multi-year roadmap with two major product releases per year, allowing us to work in a highly coordinated manner. »

2-4 Binance

Changpeng Zhao, the birth of a management approach. After graduating from university, Zhao completed an internship with a subcontractor of the Tokyo Stock Exchange. He then worked full-time for four years at Bloomberg Tradebook, where he developed futures trading software. As of 2013, he worked for various cryptocurrency projects, including Blockchain.info, and was briefly CTO of OKCoin. In 2014, he sold his Shanghai apartment for around $1 million to buy bitcoin.

A rewarding career and enough learning time for him to found his Binance cryptocurrency exchange in July 2017. It raises $15 million in an initial coin offering.

In eight months, Binance becomes the largest cryptocurrency exchange in the world by trading volume precisely in April 2018.

How does Changpeng Zhao manage to manage Binance's huge teams scattered across the globe? How can he not feel overwhelmed in this fast moving world of cryptocurrencies? A world where the product we are currently offering may be obsolete in a year and, conversely, where tomorrow's service remains to be invented.

Changpeng Zhao explains that Binance's organization is very horizontal. Many employees have the freedom to perform whatever actions they feel are most appropriate given the situation. This makes Binance very agile and responsive to market context and emerging technological developments.

"We operate through a multitude of small teams and each of them does what they deem to be best for Binance. And sometimes, with this operation, things happen, as if by magic. Changpeng Zhao.

The founder also wants to move towards an organization of Binance that would no longer depend on him and would operate entirely independently, without him needing to interfere. He would continue to contribute 100% to Binance's business, of course. But his contribution would become optional.

Table N°7 and Figure N°1 represent the distribution of the sample according to the entrepreneurial era of its launch.

Table N°7: human strengths and the entrepreneurial era of the sample

Business	Creation date	Founders	CEO January 2023	Effective	Era of digital entrepreneurship
Alphabet inc (Google)	1998	Larry Page and Sergey Brin	Sundar Pichai	163,906	SeedEra
Meta (Facebook)	2004	Mark Zuckerberg, Andrew McCollum, Eduardo Saverin, Chris Hughes, Dustin Moskovitz	**mark zuckerberg**	83,553	Startup Era
Airbnb	2008	Brian Chesky, Joe Gebbia, Nathan Blecharczyk	Brian Chesky	5,600	Startup Era
Binance	2017	Changpeng Zhao	Changpeng Zhao	8,000	Expansion-Era

Figure N°3: Distribution of the sample according to the entrepreneurial period

evolution of the digital entrepreneurship eras in relation to the web evolution

Our sample covers the three main eras of digital entrepreneurship, from the time of the search engine to the social networking era and ending with the blokchain era

1,88 BILLION
web in the world

800 K
create per day

03 Expansion-Era (2016-20xx)
WEB 1.0 Read Only

02 Startup-Era (2001-2015)
WEB 2.0 Read Write

01 SeedEra (1990-2000)
WEB 3.0 Read Write Execute

3-Discussion and Results

After having led the exposure of the sample, we thus lead a discussion on the convergence of Management making it possible to work out a model of Management.

The mode of management conceptualized by Stevenson is based on a definition of entrepreneurship centered on the pursuit of opportunities regardless of the resources held. For Stevenson, the entrepreneurial opportunity represents a future state, considered desirable, that the individual considers possible to reach. Managing the tension that exists between the individual propensity towards the pursuit of opportunities and the interest of the organization (what an opportunity can represent for it) is the very essence of entrepreneurial management.

The ME approach suggests that the pursuit of opportunity cannot be the result of pressure from management through traditional managerial mechanisms, including planning and control.

Starting from this basis, there emerges a categorical difference between traditional management and entrepreneurial management. In the first, the company has resources in a more or less predictable environment, in a more or less well-known market, the object of management of which is to plan resources and control results. So much so that in the second the entity does not have resources, it is rather on the hunt for an opportunity in an unpredictable environment, indeed without clear positioning on a market and whose object of Management is to find everything first resources to demonstrate the existence of an opportunity, then exploit the opportunity to create results.

However, traditional management according to Fatol is made up of five pillars: setting objectives (strategic and operational), choosing the means to achieve them, implementing these means (search for efficiency), controlling the implementation and the results obtained, ensure regulation based on this control (Governance). To achieve this, this Management uses two well-known tools such as: The POC, proof of concept or proof of concept, generally designates the demonstration of what it is possible to carry out a project, then the prototype of the product or service and recently the MPV which is a product just mature enough to interest users.

Figure N°4: Traditional Management Functions
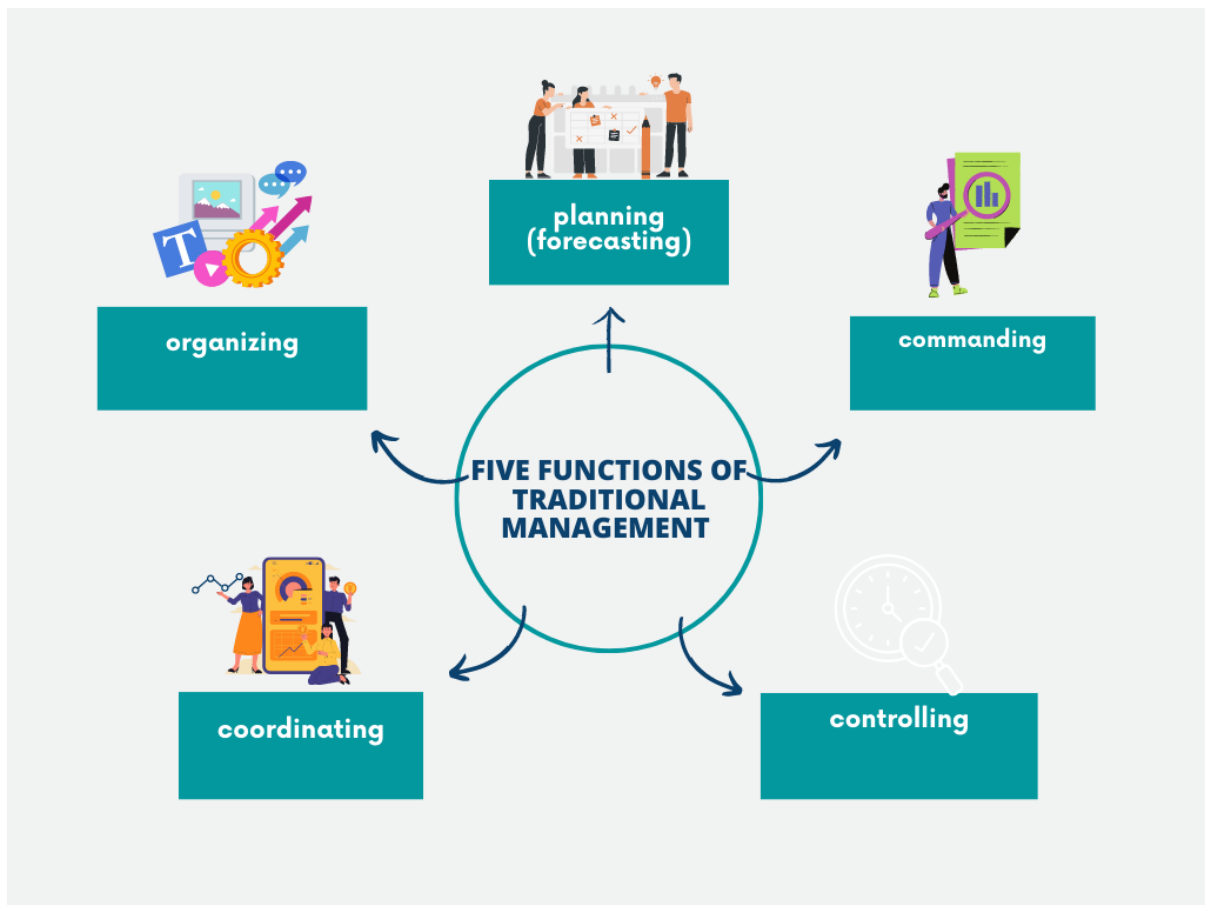
As for entrepreneurial management, it turns out that the analysis carried out on Google with Larry Page and Sergey Brin and Facebook with the Management of Mark Zuckerberg, as well as Airbnb with Brian Chesky and Binance with Changpeng Zhao expresses a more intense Management with a speed worthy of the time in which the four companies were created.

Let's take the first component, that of goal setting, for Google it is a question at the beginning for the founders of creating the computer directory to resell it and not to create the computer giant. This simple objective is the same as when the founder of facebook wanted his site to be used by the majority of students at his university. Setting simple and very short-term goals without using PESTEL or the SWOT method is a recurring component in our sample. Which brings us back to seeing this component like this: 2 weeks, 2 months, 2 years and 200 years infact it is a goal setting technique very different from traditional Management which gives an

incredible agility of pivot to the companies of entrepreneurship technological. Indeed the first component can be recorded as: 2W2M2Y/200Y.

This 2W2M2Y/200Y pillar offers the Management of technological entrepreneurship a very particular focus, because the transition between the two-week objectives and the assignment of tasks in a reduced team is often simple, apart from this operational use it is easier to issue feedback over a short period and therefore recover the slope quickly than when the planning already takes two weeks to be done in the traditional case. And since two weeks may not correspond to other branches of the box, the choice of two months makes it possible to group all the teams. Comes after the two-year projection which is linked to the economic cycle in order to easily quantify and program the update on the results.

The choice of this component by the Management of digital entrepreneurship was dictated by their initial identity, when they were launched they often did not have the means that allowed them to see further than the 2W and this choice was turned out to be judicious and even very competitive, which prompted this Management to keep it. And therefore adapted the size of the teams which remains small in order to comply with this component of ME. This makes it possible to avoid the disengagement of employees and the development of suffering at work.

We must start from this central idea, that management is presented above all as a technique whose goal is productive performance. Indeed, On the second component and the third component, it is during the analysis of the sample of a single component fast execution. Choosing the means to implement by drawing up a POC and then making the prototype and the MPV then controlling this implementation is a very long process worthy of the time of Ford's Management. We noticed that the sample adopts a much faster component in line with digital entrepreneurship. Indeed this component simplifies the process by adopting that the POC is equal to the MVP. Since it's about chasing the opportunity, the choice of means is a step often skipped because everyone at the start had no means except their technical skills and involvement to put into the project. In fact, to justify the opportunity, he put an MVP on the market as quickly as possible, considering that it is the only POC that can present to the various stakeholders.

This pillar is also a characteristic of the Management of digital entrepreneurship, the execution of many risky MVPs offers an exceptional learning capacity and therefore a delivery capacity that does not exist in any other sector because the distance between reflection, decision and execution is reduced to a strict minimum. This does not reduce wasted time as it may claim but creates faster memory management and provides real-time data that reduces margin for error to a bare minimum. In our sample, the different companies have developed a lot of features and products put on the market in record time and in the majority of cases their features end up disappearing because they have not attracted customers.

Before going to the third element, it should be noted that the history of the companies in our sample and of entrepreneurial practices reveals a wide diversity of actor profiles with regard to many of their personal and situational parameters (energy for change, capacities physical, personal and relational capital, status in the organization, social position, etc. associated with various possibilities or capacities to carry out the project, and therefore to design and implement it. It is also a great diversity of more or less inhibiting or facilitating contexts which would require to be approached more frontally to enrich this research.

The third retained pillar of entrepreneurial management is self-learning, which is largely different from implementation control. This is a process of rapid integration of user reactions. This is detected in the various companies in the sample. Nevertheless in this function the peculiarity is one of the sector which contains a branch called artificial intelligence. This branch allows a management function to be executed more quickly. Once the MVP is put on the market, it becomes a database of the reactions of its users allowing its immediate improvement.

The fourth pillar deduced from the analysis of the sample is scalability, this function of the ability to be scaled is also a particularity of the digital entrepreneurship sector. Above all, it is a vital function for the various companies in the sample. Any self-learning resistant MVP is supposed to be scaled. This management function is integrated into the various management processes. This function makes it possible to stagnate fixed costs and therefore create a significant margin for the company on each scalable product.

Figure N°5: The Functions of Entrepreneurial Management

Four functions of digital entrepreneurial management

01 **Short planning**
2W2M2Y/200Y

02 **fast execution**
POC=MVP

03 **Self-preserving**

04 **scalability**
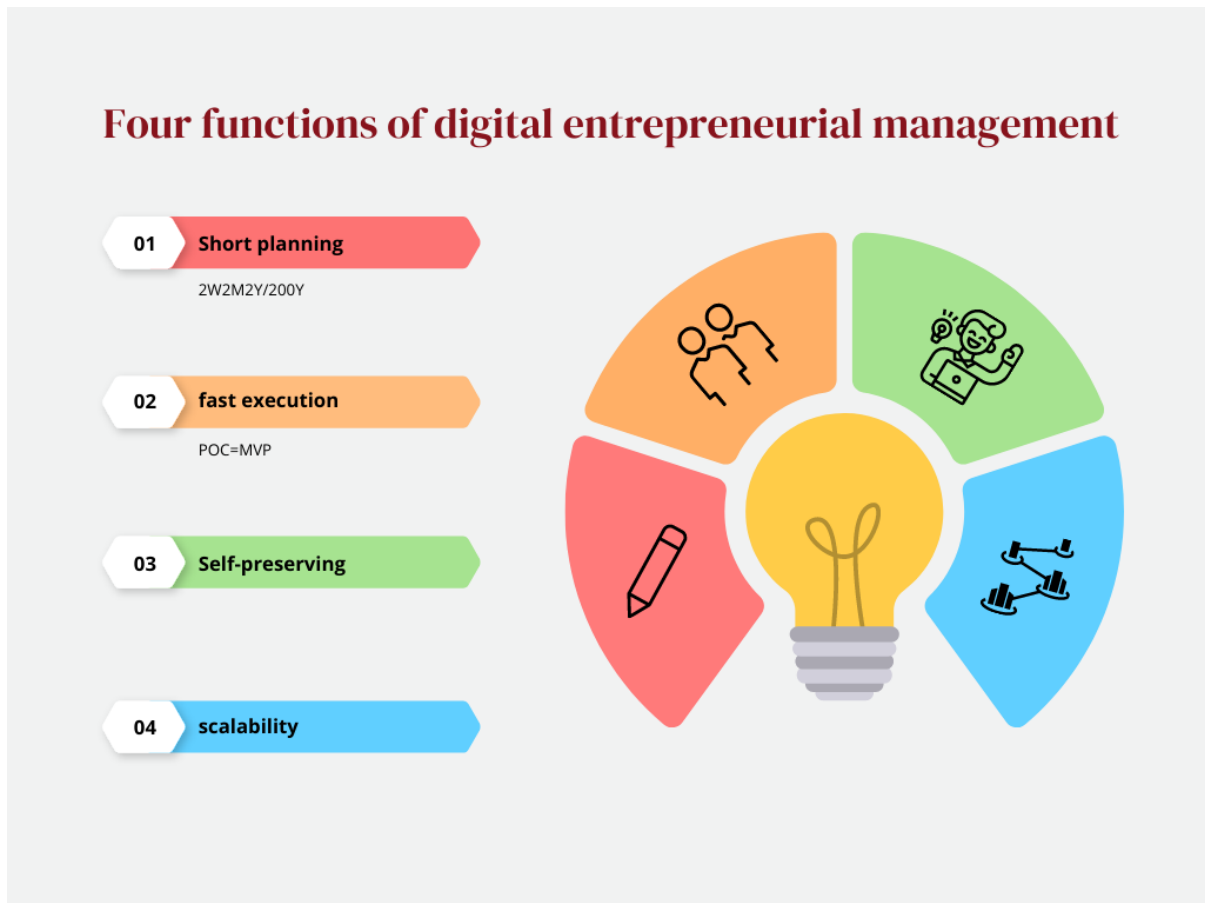
The functions cited are performed by the management of the sample to run their businesses and we believe that they are combined a characteristic of the management of digital entrepreneurship. However, this remains insufficient to build the management model of digital

entrepreneurship. Indeed, the sample represents two essential contours for the body of the MM. These are storytelling and competitive aggressiveness.

Google is a nice story of two student researchers and Facebook is the adventure of a student who leaves everything for his dream. Aibnb is a cute breakfast cereal story and binance is a nice global integration legend. It is above all a mode of action describing a model of management that of digital entrepreneurship. When the product is democratized it is customizable by the personal story of the founder of the company. This contour is not exclusive to digital entrepreneurship but its use has an added value of the emotional order. In addition, According to Flavien Bazenet and Thomas Houy, the media are practically unanimous in considering that the media treatment tends to romanticize entrepreneurial adventures. This belief is particularly rooted in commentators belonging to generalist media and specialized in entrepreneurship. The reasons for this tendency to embellish the epics of digital start-ups undoubtedly come from the methods of the selection of press articles operated by the media. The media indeed assume that it is easier for them to publish news on a start-up when the entrepreneur has already carried out a storytelling of his activity or when the company shows an original value proposition.

To fill this management model, it was deduced from the analysis of the sample a managerial attitude of acquisition of competitors. Google made more than 200 acquisitions between 2001 and 2019 (Appendix 1) and Facebook made more than 50 acquisitions between 2005 and 2019. Airbnb made more than 16 acquisitions between 2009 and 2019 and Binance made more than 3 acquisitions between 2017 and 2019. This illustrates an essential characteristic for the management of digital entrepreneurship. We thus deduce that the acquisitions of the sample are a means of better fulfilling the R&D function.

4-Conclusion

During this research, we tried to explore research on digital entrepreneurship and management, while studying in the chronology of the internet the successful management of the four entrepreneurs.

We have been able to demonstrate that this entrepreneurship centered on the pursuit of opportunities has an identifiable management model. This management model can be concluded in figure N°6.

Figure N°6: Digital entrepreneurship management model

digital entrepreneurship management model

01 **Short planning**
2W2M2Y/200Y

02 **fast execution**
POC=MVP

03 **Self-preserving**

04 **scalability**

storytelling

acquisitions = R&D
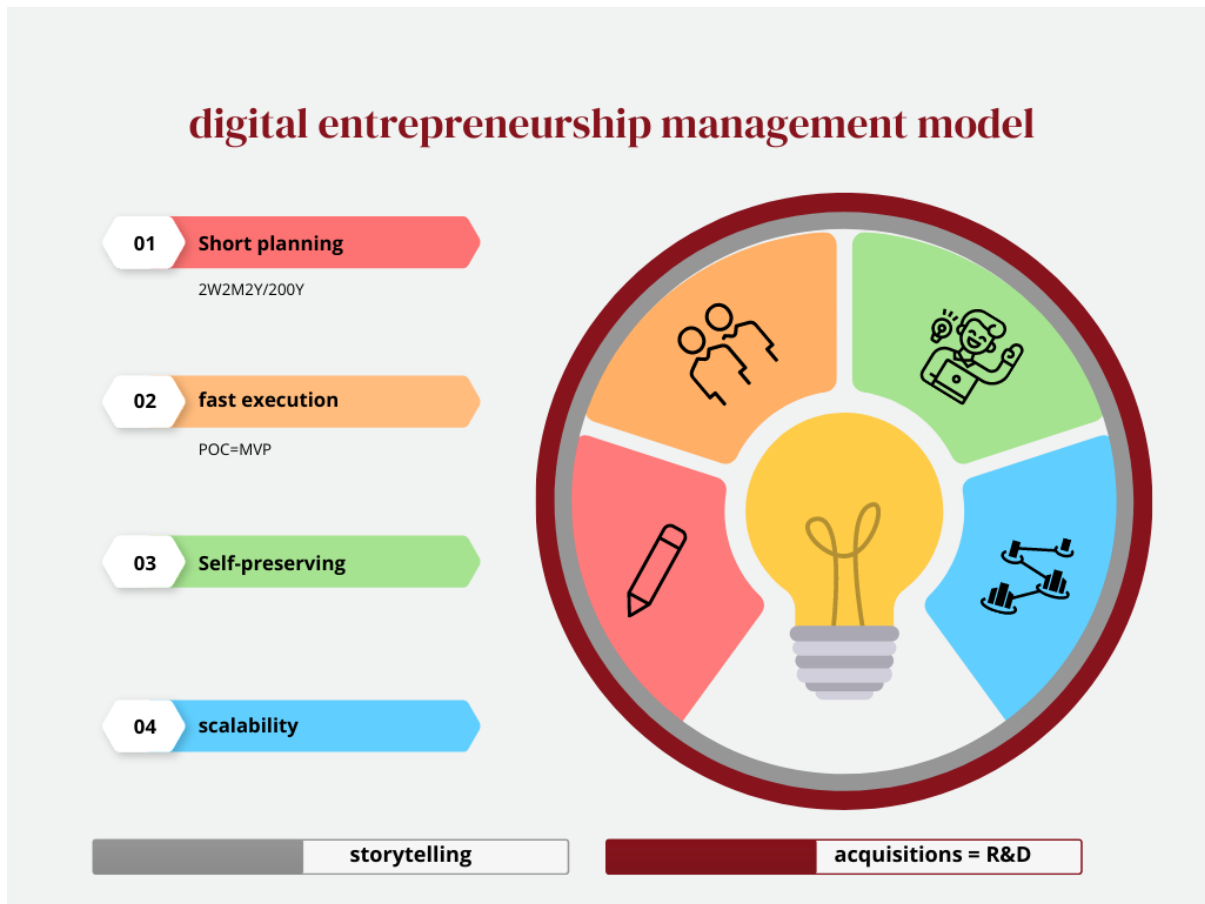
The sample we analyzed proves the presence of the components of this model. Indeed this model is a guarantee of survival of digital entrepreneurship, the absence of a pillar is often linked to the failure of this entrepreneurship.

Finally, this study remains a modest essay on a phenomenon still qualified in 2023 and may be known by the sphere of research. Digital entrepreneurship deserves to be discussed more fully by the community of entrepreneurship researchers. A first task would consist in providing it with a solid integrating framework, which would make it possible to apprehend all the facets of this complex form of entrepreneurship.

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Appendix 1: Google Acquisitions (Alphabet)

Number	Acquisition date	Company	Activity	Country	Price (USD)	Used as/Integrated with
1	12 Feb. 2001	Already	Usenet	USA		Google Groups
2	Sep 20, 2001	Outride	Search engine	USA		Google Personalized Search(iGoogle)
3	feb. 2003	Pyra Labs	Blogging	USA		blogger
4	Apr 2003	Neotonic Software (in)	Customer relationship management	USA		Google Groups,Gmail
5	Apr 2003	Applied Semantics	Online Advertising	USA	$102,000,00 0	AdSense,AdWords
6	Sep 30, 2003	kaltix(in)	Search engine	USA		iGoogle
7	Oct 2003	Sprinkles	Online Advertising	USA		AdSense,AdWords
8	Oct 2003	Genius Labs(in)	Blogging	USA		blogger
9	May 10, 2004	Ignite Logic(in)	HTML editor	USA		Google Sites
10	July 13 2004	Picasa	Image Hosting	USA		Picasa,blogger
11	Sep 2004	ZipDash	Traffic analysis	USA		Google Mapsfor Mobile
12	Oct 2004	Where2	Cartographic analysis	AU		Google Maps
13	Oct. 27, 2004	Keyhole, Inc.	Cartographic analysis	USA		Google Maps,Google Earth

14	March 28, 2005	Urchin Software Corporation	Audience measurement	USA		Google Analytics
15	May 12, 2005	dodge ball(in)	Social networking	USA		Google Latitude
16	July 2005	reqwireless	mobile browsing	CAN		Google Mobile
17	July 7 2005	Current Communications Group(in)	Broadband	USA	$100,000,000	Internet backbone
18	August 17, 2005	android	Mobile apps	USA		android
19	Nov 2005	Skia	Graphics software	USA		android,Google Chrome
20	Nov 17, 2005	Akwan Information Technologies(in)	Search engine	BRA		internet backbone
21	20 Dec. 2005	AOL[#1]	Broadband	USA	$1,000,000,000	
22	Dec 27 2005	Phatbits	widgets	USA		Google Desktop
23	Dec 31 2005	allPAY GmbH	Mobile apps	GER		Google Mobile
24	Dec 31 2005	bruNET GmbH	Mobile apps	GER		Google Mobile
25	Jan 17, 2006	dMarc Broadcasting	Advertising	USA	$102,000,000	AdSense
26	14 Feb. 2006	Measure Map	Blogging	USA		Google Analytics
27	March 9, 2006	Upstartle	Word processor	USA		Google Docs
28	March 14, 2006	@Last Software	3D modeling	USA		Google SketchUp
29	Apr 9, 2006	Orion	Search engine	AU		Google Search
30	June 1, 2006	2Web Technologies	Web spreadsheet	USA		Google Spreadsheet

31	August 15, 2006	Neven Vision Germany GmbH	computer vision	GER		Picasa&Google Goggles
32	Oct. 9, 2006	Youtube	Video Hosting	USA	$1,650,000,000	Youtube
33	Oct. 31, 2006	JotSpot	Web apps	USA		Google Sites
34	Dec 18 2006	Endoxon	Cartography	HE	$28,000,000	Google Maps
35	Jan 4, 2007	Xunlei[#2]	File sharing	CHN	$5,000,000	
36	16 Feb. 2007	Adscape(in)	Video game advertising	USA	$23,000,000	AdSense
37	March 16, 2007	Trendalyser	Statistics software	SWE		Google Analytics
38	Apr 17, 2007	Tonic Systems	Presentation software	USA		Google Docs
39	Apr 19, 2007	marratech	Videoconference	SWE	$15,000,000	Google Talk
40	Apr 13, 2007	DoubleClick	Online Advertising	USA	$3,100,000,000	AdSense
41	May 11, 2007	GreenBorder	IT security	USA		Google Chrome
42	June 1, 2007	Panorama	Sharing of photographs	ESP		Panorama
43	June 3, 2007	FeedBurner	management of RSS feed	USA	$100,000,000	FeedBurner
44	June 5, 2007	PeakStream	Parallel processing	USA		Server (computing)
45	June 19, 2007	Zenter	presentation program	USA		Google Docs
46	July 2 2007	GrandCentral	VoIP	USA	$45,000,000	Google Voice
47	July 20 2007	Picture America	Air Photo	USA		Google Maps
48	July 9 2007	Postini	communications security	USA	$625,000,000	Gmail
49	Sep 27, 2007	Zingku	social network	USA		Google Mobile
50	Oct. 9, 2007	Jaiku	microblogging	END		Google Mobile
51	July 30 2008	Omnisio	video hosting	USA	$15,000,000	Youtube
52	Sep 12, 2008	TNC (Tatter and	blog host	KOR		blogger

		Compan y)				
53	August 5, 2009	On2	Video compression	USA	$106,600,00 0	WebM&Youtube
54	Sep 16, 2009	reCAPT CHA	Security	USA		
55	Nov 9, 2009	Ad Mob	advertisingin mobile telephony	USA	$750,000,00 0	
56	Nov 9, 2009	Gizmo5	VoIP	USA	$30,000,000	Google Voice
57	Nov 23, 2009	Teracent	online advertising	USA		Adsense
58	4 Dec. 2009	AppJet(EtherPa d)	real-time workgroup software	USA		Google Wave,Google Docs
59	12 Feb. 2010	Aardvar k	Collaborative search engine	USA	$50,000,000	Aardvark
60	17 Feb. 2010	reMail	email search engine	USA		Gmail
61	March 1, 2010	picnic	online photo editor	USA	$5,000,000	Picasa
62	March 5, 2010	DocVers e	Microsoft Office file sharing	USA	$25,000,000	Google Docs
63	Apr 2, 2010	Episodic	video hostplatformstart- up	USA		Youtube
64	Apr 12, 2010	PlinkArt	Visual Search EngineMobilestart -up	UK		Google Goggles
65	Apr 20, 2010	Agnilux	Server technologystart-up	USA		
66	Apr 27, 2010	LabPixie s	Gadgets	SRI		
67	Apr 30, 2010	Bump Technolo gies	office environment	CAN	$30,000,000	android
68	May 20, 2010	Simplify Media	Music syncing	UK		android
69	May 21, 2010	Ruba.co m	Travel	USA		Google
70	June 3, 2010	Prompt Media	Advertising	USA	$81,000,000	DoubleClick
71	July 1 2010	ITASoft ware	Travel technology	USA	$700,000,00 0	

72	July 16 2010	meta web	Semantic Search	USA		Google Refine,Freebase
73	August 1, 2010	Zetawire	Mobile payment,NFC	CAN		android
74	August 4, 2010	Instantiations	Java/Eclipse/AJAX Developer Tools	USA		Google Web Toolkit
75	August 5, 2010	Slide.com	social gaming	USA	$182,000,000	
76	August 10, 2010	Jambool	Social Gold payment	USA	$70,000,000	
77	August 15, 2010	Like.com	Visual Search Engine	USA	$100,000,000	boutiques.com
78	August 30, 2010	angstro	Social networking service	USA		
79	August 30, 2010	SocialDeck, Inc.	social gaming	CAN		
80	Sep 13, 2010	Quiksee	Online video	SRI	$10,000,000	Google Maps
81	Sep 28, 2010	Plannr	Schedule Management	USA		
82	Oct. 1, 2010	BlindType	Touch Typing	GRE		android
83	3 Dec. 2010	Phonetic Arts	Speech synthesis	UK		Google Voice
84	3 Dec. 2010	Widevine Technologies	DRM	USA		GoogleTV
85	Jan 13, 2011	eBook Technologies	eBook	USA		Google Books
86	Jan 25, 2011	SayNow	Voice Recognition	USA		Google Voice
87	Jan 26, 2011	fflick	Social network service	USA	$10,000,000	Youtube
88	March 1, 2011	zynamics	Security	GER		
89	March 7, 2011	BeatThatQuote.com	Price comparison service	UK	£37,700,000	
90	March 7, 2011	Next New Networks	Online video	USA		Youtube

91	March 16, 2011	Green Parrot Pictures	Digital video	IRL		Youtube
92	Apr 8, 2011	PushLife	Service provider	CAN	$25,000,000	
93	Apr 26, 2011	TalkBin	Mobile software	USA		android
94	May 23, 2011	sparkbuy	Price comparison service	USA		Google Product Search
95	June 3, 2011	PostRank	social mediaanalyticsservice	CAN		
96	June 9, 2011	Admeld	online-advertising	USA	$400,000,000	AdSense,AdWords
97	June 18, 2011	Sage TV	media center	USA		GoogleTV
98	July 8 2011	Punched	Loyalty program	USA		Google Wallet
99	July 21 2011	Fridge	Socialgroups	USA		Google+
100	July 23 2011	PittPatt (Pittsburgh Pattern Recognition)	facial recognition system	USA		
101	August 1, 2011	dealmap	good business geolocation site	USA		Google Offers
102	August 16, 2011	Motorola Mobility	Patents onmobile phones	USA	$12,500,000,000	android,GoogleTV
103	Sep 5, 2011	Zave networks	Digital Discount Coupons	USA		Google Offers
104	Sep 9, 2011	Zagat	Local Business Customer Reviews	USA	$151,000,000	Google Places
105	Sep 19, 2011	DailyDeal	Group Sales - German Groupon Clone	GER	$114,000,000	Google Offers
106	Oct 12, 2011	SocialGrapple	Specialist in the analysis of Twitter accounts	USA		Google+
107	Nov 10, 2011	Apture		USA		Google Chrome
108	Nov 10, 2011	Katango	Google acquires Katango, specialist in community interactions	USA		Google+
109	9 Dec. 2011	RightsFlow		USA		Youtube

110	13 Dec 2011	Clever Sense	Personalized voice recommendations of places	USA		android
111	Apr 2, 2012	TxVia	Online payment	USA		Google Wallet
112	May 24, 2012	Mike and Maaike	Industrial design	USA		Motorola Mobility
113	June 3, 2012	Meebo	Instant messaging tools	USA	$100,000,00 0	Google Plus
114	June 5, 2012	quickoffice	Office suite	USA		Google Docs(?)
115	July 20 2012	Sparrow	Mobile apps	ENG		Google Mail
116	July 31 2012	Wildfire	Social marketing: Advertising on social networks	USA	probably $250,000,00 0	In reinforcement ofDoubleClick
117	August 10, 2012	Frommer's	Collection of travel guides and tourist destinations	USA	$25,000,000	To improveGoogle+roo m andGoogle Maps
118	Sep 7, 2012	VirusTotal	Online file and document scan to detect malware	USA		Should remain independent as well as improve the security of Google services
119	August 10, 2012	Nik Software	Photographic applications (acquired more specifically for Snapseed, a competitor ofinstagram)	GER		
120	Oct 4, 2012	Viewdle	Facial and motion recognition, augmented reality	UKR		Project Glass
121	28 Nov 2012	Incentive Marketing	Coupons, group purchases, personalized promotions	USA		Google Wallet
122	Nov 30, 2012	buffer box	Chest	CAN		Google Shopping
123	6 Feb. 2013	Channel intelligence	Marketing tools and services for merchants	USA	€125,000,00 0	Google Shopping
124	March 12, 2013	dnnresearch	Startup specialized in neural networks	CAN		Improve research technology

125	March 15, 2013	Talaria	Dynamic and optimized web application server	USA		Google Cloud
126	Apr 23, 2013	wavii	Natural language understanding	USA	Over $30,000,000	Knowledge Graph
127	May 22nd 2013	Makani power	Renewable energy	USA		Google X Lab
128	June 10, 2013	Waze	GPS Navigation, Radar Warning	SRI	$966,000,000[138]	Google Maps
129	August 30, 2013	WIMM Labs	Smartwatch (hardware and software)	USA		android
130	Sep 16, 2013	Bump Technologies	Sharing information between smartphones	USA	$20,000,000	android
131	Oct 2, 2013	Flutter	Motion recognition	USA	$40,000,000	?
132	Oct 22, 2013	FlexyCore	Android Optimization	ENG	$16,900,000	android
133	2 Dec. 2013	Schaft.inc	humanoid robot	JPN		Google X Lab
134	3 Dec. 2013	Industrial Perception	Robot	USA		Google X Lab
135	4 Dec. 2013	Redwood Robotics	Robot	USA		Google X Lab
136	5 Dec 2013	Meka Robotics	Robot	USA		Google X Lab
137	6 Dec. 2013	Holomni	Robot	USA		Google X Lab
138	7 Dec 2013	Bot & Dolly	Robot	USA		Google X Lab
139	8 Dec. 2013	Autofuss	Robot	USA		Google X Lab
140	13 Dec 2013	Boston Dynamics	Robotics	USA		
141	Jan 4, 2014	Bitspin	Alarm clock app	HE		android
142	Jan 13, 2014	Nest Labs	Automation	USA	$3,200,000,000	

143	Jan 27, 2014	DeepMind Technologies	Artificial intelligence	UK	$400,000,000	
144	17 Feb. 2014	SlickLogin(in)	Sound double-authentication	SRI		
145	21 Feb. 2014	spider.io	Fight ad fraud	USA		DoubleClick
146	March 11, 2014	GreenThrottle	Games	USA		android
147	Apr 14, 2014	Titan Aerospace	orbital drones and solar planes at very high altitude	USA		Project Loon
148	May 2, 2014	Rangespan	bigdata	UK		Google shopping
149	May 6, 2014	Adometry	Tracking Solution	USA		Google analytics
150	May 7, 2014	appetizers	Restaurant website design	USA		Google analytics
151	May 7, 2014	Stackdriver	cloud	USA		Google cloud
152	May 7, 2014	MyEnergy	online usage control system	USA	—	Nest Labs
153	May 16, 2014	Questvisual	translation mobile app	USA		Google Translate
154	May 20, 2014	divide	management of Android smartphones in companies.	USA		android
155	June 10, 2014	Skybox Imaging	satellite imagery	USA	$500,000,000	Project Loon
156	June 19, 2014	mDialog	Online Advertising	USA		DoubleClick
157	June 19, 2014	Alpine	Wireless	USA		google fiber
158	June 21, 2014	dropcam	US leader in connected cameras	USA	$555,000,000	Nest Labs
159	June 25, 2014	Appurify	Automatic testing service	USA		Google cloud
160	July 1 2014	Songza	music streaming	USA		Google Play
161	July 24 2014	drawElements	mobile graphics performance analysis.	END		android

162	August 6, 2014	Moved	Messaging	USA		Hangouts,Google Now
163	August 6, 2014	DirectR	Production of marketing films	USA		Youtube
164	August 17, 2014	jet pack	Image recognition	USA		Google Goggles
165	August 23, 2014	design gecko	Design	USA		Google X Lab
166	August 26, 2014	Zync render	special effects for cinema by the cloud	USA		Google Cloud Platform
167	Sep 12, 2014	Polar	online survey	USA		Google+
168	Sep 12, 2014	Lifts Labs	making a tremor reducing spoon for people with Parkinson's disease	USA		Google X Lab
169	Oct 21, 2014	fire base	Real-time data synchronization	USA		Google Cloud Platform
170	Oct 23, 2014	Dark Blue Labs	Artificial intelligence	UK		Google X Lab
171	Oct 23, 2014	VisionFactory	Artificial intelligence	UK		Google X Lab
172	Oct 27, 2014	Revolv	Automation	USA		Nest
173	Nov 19, 2014	Relative Wave	Application development tools	USA		android
174	Dec 17 2014	Vidmaker	Video editing	USA		Youtube
175	6 Feb. 2015	Launchpad Toys	app for kids	USA		Youtube
176	8 Feb. 2015	Odyssey	Photo sharing and storage	USA		Google+
177	23 Feb. 2015	Softcard	mobile payment	USA		Google Wallet
178	24 Feb. 2015	Bull	Advertising	USA		android
179	Apr 16, 2015	Thrive audio	Audio system	ERI		Google Cardboard
180	Apr 16, 2015	Tilt Brush	3D painting	USA		Google Cardboard
181	May 4, 2015	Timeful	Mobile software	USA		Google Inbox,Google Calendar

182	May 28, 2015	Pulse.io	Mobile app optimization	USA		android
183	July 21 2015	Pixate	Application prototyping	USA		Material Design
184	July 6 2016	Moodstocks	Artificial intelligence	ENG		Google X Lab
185	July 8 2016	Anvato	Cloud video services	USA		Google Cloud Platform
186	July 12 2016	Kifi	Link sharing	USA		Spaces (application disappeared since 03/17/2017)
187	July 27 2016	Launchkit	Mobile app development tools	USA		android
188	August 8, 2016	will orbit	cloud computing	USA	$100,000,000	Google Cloud Platform
189	Sep 8, 2016	Apigee	cloud computing	USA	$625,000,000	Google Cloud Platform
190	Sep 15, 2016	Urban Engines	Map data analysis	USA		Google Maps
191	Sep 20, 2016	API.AI	Artificial intelligence	USA		
192	Oct 11, 2016	FameBit	Branded content	USA		Youtube
193	Oct 24, 2016	eyefluence	Eye-tracking,virtual reality	USA		
194	13 Dec 2016	Chronologics	Connected watches	USA		Android Wear
195	Jan 5, 2017	Audio Files	Sound optimization	SWE		Google Duo,Google Hangouts
196	Jan 19, 2017	Fabric	Mobile application development platform	USA		Firebase, Google Developer Product Group
197	March 8, 2017	Kaggle	Data science	USA		Google Cloud Platform
198	August 17, 2017	AIMatter	Image processing, special effects mobile applications (Fabby)	BLR		android
199	Sep 21, 2017	HTC - Pixel Phone Division	responsible for the production of the Pixel smartphone.	TWN	$1,100,000,000	Google Pixel

200	Oct 9, 2017	Relay Media	Accelerated Mobile Pages platform for distribution, monetization, analytics, and insights.	USA		
201	Oct 11, 2017	60dB	curates and delivers today's top audio stories, including news, sports, entertainment, business and technology.	USA		Google Play Music
202	15 Feb. 2018	Xively	platform dedicated to simplifying the interconnection of devices and data with applications on the Internet of Things.	USA	$50,000,000	
203	March 27, 2018	Tenor	Animated GIF search engine.	USA		
204	May 09, 2018	Velostrata	Cloud migration	SRI		Google Cloud Platform
205	May 14, 2018	Cask Data	Developing and running big data analytics services	USA		Google Cloud Platform
206	August 06, 2018	Graphics Fuzz	GPU improvement	GBR		android
207	Oct 2, 2018	Forward	AI-based chatbot development platform	USA		
208	Nov 30, 2018	Workbench	Online course	USA		Google Classroom
209	10 dec. 2018	Sigmoid Labs	Public transport application (reservations + timetables)	IND	$40,000,000	
210	Jan 9, 2019	super pod	Q&A software	USA	$60,000,000	Google Assistant
211	20 Feb. 2019	Alooma	Database migration to cloud	SRI		Google Cloud Platform
212	March 31, 2019	Nightcorn	Video sharing	GER		Youtube

| 213 | June 7, 2019 | looker | multi-cloud | 🇺🇸USA | $2,600,000,000 | [Google Cloud Platform](#) |
| 218 | Jan 17, 2019 | Fossil | Connected watch | | $40,000,000 | [WearOS](#) |

Appendix 2: Facebook Acquisitions (Meta)

Number	Acquisition date	Company / product	Activity	City Country	Value (USD)	Used as/Integrated with	Recruitments
1	August 23, 2005	facebook.com	AboutFace	Boston🇺🇸 USA	200,000	Use of domain name	
2	July 19, 2007	Parakey	Online operating system	mountain view 🇺🇸 USA	Unknown	Facebook Mobile	Blake Ross, Joe Hewitt (former firefox)
3	June 23, 2008	ConnectU	Social networking	Cambridge🇺🇸 USA	31 million		
4	September 10, 2009	FriendFeed	Aggregator of social networks	mountain view 🇺🇸 USA	47.5 million	Facebook	Paul Buchheit, Bret Taylor, Jim Norris, Sanjeev Singh, and 8 others
5	19february2010	octazen	Importing contacts	Kuala Lumpur (Taman	Unknown	Import contacts from other services	The two employees of

				Mela wati), Mala ysia				Octaz en
6	2March2 010	Divvyshot	Photo manageme nt	san franci sco USA				
7	13may20 10	Friendster patents	Intellectua l property	moun tain view USA Kual a Lum pur, Mala ysia				
8	26may20 10	ShareGrove	Private conversati ons and forums	San Mate o USA				
9	8July201 0	next stop	Travel recommen dation					
10	15august 2010	Chai Labs	Online apps					
11	20august 2010	Hot Potato	Check-in and status					
12	29octobe r2010	Drop.io	File hosting and sharing					
13	15novem ber2010	fb.com domain name	Purchased from theAmeric an Farm Bureau Federation		8.5 millio n			

14	25January2011	relationship	Online Advertising				
15	2March2011	Beluga	Group messaging				
16	20March2011	snaptu	Mobile application development				
17	24March2011	RecRec					
18	27april2011	DayTum					
19	9June2011	Sofa	Software design				
20	9June2011	MailRank	email management				
21	2august2011	Push Pop Press	Publishing online				
22	10october2011	Friend.ly	Q&A service				
23	8november2011	strobe	mobile applications in html5				
24	2December2011	Gowalla					
25	April 9, 2012	instagram	Photo and video sharing	USA	1 billion	Facebook	
27	13april2012	Tags					
28	15may2012	Lightbox.com					
29	21may2012	Karma					

30	18June2012	Face.com					
31	14July2012	Spool					
32	20July2012	Acrylic Software					
33	24august2012	Threadsy					
34	28february2013	Atlas					
35	March2013	Osmeta					
36	14March2013	Hot Studio					
37	23april2013	Spaceport					
38	25april2013	Parse					
39	18July2013	Monoidics					
40	12august2013	Jibbigo					
41	13october2013	Onavo	vpn	Israel	Estimated between 150 and 200 million	Onavo Protect	
42	17December2013	SportStream					
43	8January2014	Little Eye Labs					
44	January 13, 2014	Branch	Comments and	New York,	15 million	Facebook	

			discussions platform	USA			
45	February 19, 2014	WhatsApp	Instant messaging	USA	19 billion	Facebook	Jan Koum (founder and CEO)
46	February 26, 2014	Oculus-VR	Virtual reality	USA	2 billion	Facebook	Palmer Luckey (Founder)
47	April 24, 2014	moves	Fitness and activity tracking app	Finland		Facebook	
48	3June2014	Pryte	Connection on demand	Finland			
49	2July2014	LiveRail	Start-up of video ads	USA			
50	5January2015	Wit.ai	Speech recognition apps	USA			
51	8January2015	Quickfire Networks	video compression	USA	Unknown		
52	14March 2015	TheFind, Inc.	e-commerce	USA	Unknown		
53	26may2015	Surreal Vision	Augmented reality	UK	Unknown		
54	18may2020	Giphy	Gif library	USA	400 million		
55	18June2020	Mapillary	Online geotagged photo sharing software	Sweden	Unknown		

Abstract

Digital entrepreneurship is distinguished by its innovation process, which revolves mainly around the creation of technology, and by its scalability. This type of entrepreneurship remains little studied by the scientific community. This research aims to better understand this popular phenomenon among the new generation of entrepreneurs. Indeed, this thesis studies the major issues dealt with in the phenomenon of digital entrepreneurship by digging into the literature on the subject and analyzing the stakeholders and the profiles of entrepreneurs as well as the management models. The objective is to provide conceptual clarity on the subject, and on the other hand, to propose a new managerial framework model that will help entrepreneurs and future researchers of digital entrepreneurship.

Résumé

L'entrepreneuriat digital se distingue par son processus d'innovation gravitant principalement autour de la création de la technologie et par sa scalabilité. Ce type d'entrepreneuriat demeure peu étudié par la communauté scientifique. Cette recherche vise à mieux comprendre ce phénomène populaire auprès de la nouvelle génération des entrepreneurs. En effet, Cette thèse étudie les questions majeures traitées du phénomène de l'entrepreneuriat digital en creusant la littérature du sujet et analysant les parties prenants et les profils des entrepreneurs ainsi que les modèles managements. L'objectif est d'apporter une clarté conceptuelle sur le sujet, et d'autre part, de proposer un nouveau modèle mangement cadre qui aidera les entrepreneurs et futurs chercheurs de l'entrepreneuriat digital.

Astratto

L'imprenditorialità digitale si distingue per il suo processo di innovazione, che ruota principalmente attorno alla creazione di tecnologia, e per la sua scalabilità. Questo tipo di imprenditorialità rimane poco studiato dalla comunità scientifica. La presente ricerca mira a comprendere meglio questo fenomeno popolare tra la nuova generazione di imprenditori. In effetti, questa tesi studia le principali questioni affrontate nel fenomeno dell'imprenditorialità digitale, scavando nella letteratura sull'argomento e analizzando gli stakeholder e i profili degli imprenditori, nonché i modelli di gestione. L'obiettivo è fornire chiarezza concettuale sull'argomento e, d'altro canto, proporre un nuovo modello di quadro manageriale che aiuterà gli imprenditori e i futuri ricercatori sull'imprenditorialità digitale.