

Entrepreneurship and innovation logics: Fundamental dilemma of market pull and technology push. A case study of leading Moroccan cluster

Abdelaziz El Abjani, (PhD, Professor)

Cadi-Ayyad University, Marrakech, Morocco

Zakaria Ghafs, (PhD Student)

Cadi-Ayyad University, Marrakech, Morocco

Correspondence address:

Cadi-Ayyad University
Abdelkrim Khattabi Avenue, Zip code 511 – Marrakech,
Morocco
Faculty of Law, Economic and Social Sciences
Morocco (Marrakech)
Zip code 2380
Tel. Number : +212 (0) 5 24 30 30 32

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Abstract (Max 400 words):

Innovation constitutes a strategic dilemma for managers. It originally means new ideas implementation through a firm's processes which take a form of innovation practices that managers must perform while facing some fundamental questions related to technological opportunities and market needs within a local or regional ecosystem.

Often, entrepreneurs in an innovative milieu seek the equilibrium between technology-push and market pull logics to foster innovation, and achieve successful competition (E. Von Hippel, 1988; P. Anderson and M. L. Tushman, 1990).

For a long time, the classical school of management had recognized that innovation strategies are a direct consequence of technology (technology push paradigm). Even so, some radical changes have occurred during the last past years and induced the increase of firm's R&D expenditures, worldwide competition and short life cycle of inventions which in turn introduced a new kind of thought about innovation and entrepreneurial strategies (Schmidt, 2005; Sandmeier et al., 2004; Koen et al., 2001; Boeddrich, 2004).

As result, appears a new paradigm called a dynamic model of innovation strategy (A shift from Technology-based to Market-driven innovation), while scholars and managers try to overcome all challenges that face entrepreneurs operating in high innovative and competitive milieu.

In Morocco, the modern firm's issues have taken the same importance as it happened elsewhere. That's why public and private operators were thinking in a joint way the adequate framework to incubate new innovative SME's and startups, especially in the industrial clusters.

As a leading one, the M. Cluster of cosmetic and agri-food situated in the south of Morocco is presented as an individual case study of this theoretical work. The M. Cluster will help us to test the above paradigms and to understand in depth the structure, dynamics, and context of clusters in Morocco, using the information gathered with the qualitative method. Also, the present work will give us the ability to move from the analysis of a single case towards the comparative analysis of more cases.

Keywords: Entrepreneurship; Innovation; Market Push/Pull strategy; Cluster.

JEL Classification: L110

Paper type: Theoretical Research.

1. Introduction

To compete and survive, firm's managers need to draw a business approach that reaches beyond traditional organizational boundaries to modern collaborative spaces with associated communities and local/or regional places suited for creativity and innovation (Moriset, 2014). Since collocation business facilitate knowledge transfer, cooperation, competition, horizontal interaction, and business opportunities for both partners and competitors (Boschma, 2005).

Assimilated to new convivial places, clusters, hubs, and entrepreneurial ecosystems designed to host local entrepreneurs and selected partners to create new ideas and strong innovative partnerships positive effects on fast growing SMEs and specific R&D fields.

Thus, in entrepreneurial studies and emerging innovation paradigms, we find many interesting studies analyzing characteristics of fast-growing firms and the managerial challenges of these new places that gather firms. More specifically, questions are about how they operate in high competitive environments in which they need to join an entrepreneurial ecosystem multi governed.

Recently, modern scientific literature reported the need to analyze networked entrepreneurial ecosystems with increasingly more attention on cluster's characteristics as complex Systems. However, there is little research exploring in-depth the strategic governing logics related to (entrepreneurial and innovation ones) and its organizational implications (Benkler, 2006).

In his book, *The Practice of Management*, Drucker (1954) wrote that good organizational management is specifically related to the practices of defining, prioritizing, and acting appropriate objectives and clear measures. What does it mean to establish good organizational management? In our organizational context, it means following the most significant organizational transformation within the cluster's history, which included a change in organizational leadership and focused on strategic capabilities and resources management energized by innovation and sustainable development of the society. As knowledge sharing and incremental learning in communities of practices took place, firms, universities, and individuals exchange techniques, insights, and workforce, so as rapidly to harness the interaction between them to move the fields of entrepreneurship and innovation forward.

The archetype of the single firm investing its profits on innovative products, is for example Thomas Edison or Steve Jobs, as brilliant individuals working alone and have tried to achieve a breakthrough. The other opposed archetype is the learning co spaces or living labs giving the set of modern approaches based on innovation as a learning model. If innovation was generally a result of a discrete process of contributions by individual engineers and designers, it actually becomes a systemic process based on shifted innovation with more importance of both individual innovativeness, public needs, market radical changes, and the increasing of firm effectiveness and adaptability (Bocken et al., 2014).

Fiol (2002) and Nag et al. (2007) explored the identity of many organizations when they shifted from being product-based innovation to platform-based and more focused on business development. For example, the Blackberry ecosystem, which was a technology-driven platform, had shifted from being a technology-push firm to market-pull platform while its products became dependent on externally developed applications (Research in Motion Limited, 1996, p.2).

The precedent scientific works, focused on clusters have commonly recognized that challenges related to the network of co-specialized firms produce dependencies and/or inter dependencies based on competition (Iyer, Lee, Venkatraman, 2006; Adner, Oxley and Silverman, 2013), the technology shifting (Christensen and Rosenbloom, 1995; Adner & Kapoor, 2015) while paradoxical relations emerge as the cooperation linkages take place.

The concept of a cluster has had a great influence on interconnected business systems and emerged as a specific field in management studies as it was well introduced by M. Porter in the

twentieth century. Which he consider as an innovation ecosystem that consists of economic and non-economic relations such as social or politic ones. (Moore, 1996).

In our specific context, it would be very interesting to study entrepreneurship and innovation logics associated with clusters. Their architecture evolution and its implications on entrepreneurial and innovation logics of cluster membership that lead innovation at the Moroccan cosmetic and agri-food industry ecosystem. Thus, the present work joins the following major points:

1. A literature review of new and old empirical and theoretical studies related to the innovation process models (technology-based and market-driven ones);
2. A comparison of major theories related to our field of study with a resume of the appropriate concepts;
3. Use concepts developed above to analyze the Cluster's framework adequacy for innovation and entrepreneurship activities in the Moroccan context (structures, dynamics...);
4. Show findings about the Cluster's innovation system in Morocco and especially for cosmetic and agri-food industry ;
5. Conclusion and discussion.

2. Literature review

The concept of an innovation system as the framework that facilitates sharing, diffusing, and absorbing knowledge in the process of innovation was introduced by Freeman (1987). The concept was based on systemic and interactive processes of firms co-creating new products and services in collaboration with external agents. Appropriately enough it was in Germany that product and process innovation by firms took place for more a century before the major institutional innovation of the in-house industrial R&D was established (Beer, 1959). Some scholars release that it could be profitable to put the business of research for new products and development of new industrial processes on a regular, systematic, and professional basis (Freeman, 1974). Then the new professional R&D labs induced some great R&D projects, mobilizing the efforts of government, industrial engineers, and universities.

According to Nelson (1993), the relative success of innovative activities is dependent that organizations are embedded in a wide social-economic system, it is also consisted of the set of interacting firms and emphasizing the organizations that lead the innovation. Metcalfe and Ramlogan (2008), argue that the innovation system is the local, regional or national framework where small and large companies, universities, and public organizations can interact in technological, commercial, social, legal, and financial forms to develop new inventions.

Later, innovation systems took benefits from further development of the relationship dynamic of actors, networks, and institutions in different technologies and innovation domains. Innovative structure within cross-sectoral interactions and informal networks gave the main distinctions between industrial sectors with a different innovation performance level and sharing environment forms - with complexity, dynamism, and diversity - in which they operate (Miller, 1975).

2.1 From the sectoral system of innovation to innovation Ecosystem approach:

To avoid simplistic and static definitions of the concepts related to the event of innovation and the innovative structure, some scholars argue that it is necessary to adopt an appropriate framework to describe the evolutionary nature of interactions between different actors, the innovation activity, and the shared environment (Moore, 1996). According to Chesbrough (2011) firms are looking for strategic methods of innovation that are suited to the capture of potential value from the larger environment in which they function.

Some many critics addressed to the sectoral system of innovation approach for being static and inappropriate for something dynamic like innovation and knowledge progress, which induced the emergence of the ecosystem approach in the innovation literature. Two decades ago, Moore (1993) brings ecosystems into the social science, while trying to understand the aim behind firm’s collaboration with external agents in different value-creating activities and the progress of co-learning, co-designing, and co-effectuating in and outside of the organizational frontiers.

If it is true that sectoral innovation systems have some similarities with innovation ecosystems like entrepreneurs who are present in both of them. They don’t give the same role for these actors which take more importance in innovation ecosystems (Connor, 2017). So, a closer focus on this innovative milieu is needed. The quite recent emergence of this concept begins with the purpose to give a precise definition to the combination of elements through networks that support innovation and new entrepreneurial activities (Spigel, 2017; Theodoraki and Messeghem, 2017; Mack and Mayer, 2016; Isenberg, 2014; Mason and Brown, 2014). The combination of social, and cultural elements within a given place that supports the development of nascent entrepreneurs and maintains a dynamic local process of innovation, predominantly determines the success of the whole innovation ecosystem.

There are several definitions of innovation ecosystems in the literature. Mercan and Göktaş (2011) define an innovation ecosystem as consisting of economic agents and economic relations as well as the non-economic elements such as institutions, social and cultural interactions. Katz and Wagner (2014) define the concept above as a synergistic relationship between firms, districts, and people that make easy the idea generation and accelerates commercialization. There is not a widely shared definition because such networks are defined at different scales and with different research designs and data. However, most recent works on the innovation ecosystem try to identify and distinguish multiple critical components that link to the success or failure of these networks.

Table 1: Selected approaches for the innovation ecosystems

Author(s)	Main approach	Key partners related to entrepreneurship and innovation
Torrès-Blay (2000)	The innovation ecosystem consists of a heterogeneous firm operation in different sectors combined in a network governed by a precursor of technology standard or commercial proceeds.	Diversity, synergy, networking (public/private relationships), leadership, entrepreneurs, technological standard, unique processes
Winden et al. (2007)	Successful organizing capacity and the quality of city foundations are crucial for generating knowledge based industries indeed innovation.	Human capital, industrial structure, quality life, accessibility, diversity, social equity
Crowley (2011)	Entrepreneurs and firms are at the core of the system of innovation, Driving the demand for innovation. Universities, research centers, governments are a key driver of innovation and connect with highly	Urban firms, Human-capital entrepreneurs, institutions,

	skilled people through networks that contribute to the success of an innovation ecosystem.	
Bell (2014)	The innovation ecosystem consists of a set of individual elements—such as Talent, Customers, Capital, Academic institutions, heroes, guides, Support services, and collision places- that combine in complex ways.	Inter connectedness, highly skilled people, market, finance, co-labs, successful startups, lawyers, government officials, advertisement unique characteristics of the city
Katz et Wagner (2014)	The innovation system consists of a wider approach that focuses on social connections beyond geography. Economic, physical, and networking assets predominantly determine the prosperity of an innovation district.	Economic assets (research institutions, Innovation cultivators, co-spaces), Physical assets (Transport, office places..), Networking assets (Workshops, networking events)

Source: Article's authors.

Among the most influential ecosystem approaches offered in Table 1. We try to highlight the main framework to sustain and boost innovation ecosystem dynamics, through co-evolving processes of members and the positive changes that enhance the firm's cumulative growth using new strategic logics (El abjani. A, 2016)¹.

As presented in the precedent review, the question about innovation ecosystems has largely focused on the essential processes and ingredients for the innovative milieu with sustainable entrepreneurial vitality, which we resume in the following key constructs:

- The development of strategic alliances between heterogeneous members;
- The emergence of entrepreneur's network with innovation leaders;
- The pursuit of self and collective entrepreneurial interest in R&D projects and market shares;
- The coherence of the innovation ecosystem due to central piloting entities useful for synergy exploitation.

Therefore, innovation systems must be considered as highly complex and non-linear systems that need adaptability performance. As a result, some changes and synergistic effects take place in such type of systems cannot be arithmetically the sum of its elements. This means that the active participation of his members, their shared relations, and the inflows or outflows of knowledge enable the creation of performing innovation system. Such a system leads us to the following question: What form of an innovation ecosystem it takes in the cosmetic and agri-food industry?

2.2 Innovation Ecosystems in cosmetic and agri-food - A definition:

First of all, it is imperative to precise that the literature tends to use the term ecosystem while rarely specifying the crucial role of the framework or the local context of such a system. Depending on the type of industry in which an ecosystem is created, a different set of implications are existing like any other network as they consist of several different actors and relationships. In contrast, innovation ecosystems should be more highly complex, employing a dynamic and adapting structure to innovate, facilitate collaboration, and co-creation. This aligns

1 El Abjani. A, 2016, « Enterprise's failure and organizational changes », Harmattan, Paris, 2016.

with our aim to define an innovation ecosystem within the industry of cosmetic and agri-products (Nelson, 1993; Lundvall, 1192; Cohen, 2006).

Following Laursen & Salter (2014); companies need to cooperate and share knowledge, with a great number of actors to innovate. Both types of knowledge sharing (the outside in and the inside out perspectives) are applicable in the modern innovation system. This means that a firm can utilize external knowledge and technology into the firm while at the same time allowing for its ideas and processes to be used by other actors in the ecosystem.

Recently, there is evidence of the cosmetic and agro-industries tendency to employ a higher level of knowledge in its innovation processes and delivered products. However, the type of knowledge that plays a role in such an industrial ecosystem must be specified as argued by McKelvey & Heidemann Lassen (2013). Their suggestion has resumed three types of knowledge: 1) Scientific & Technological, 2) Market and, 3) Business.

Scientific knowledge: in the cosmetic industry, it consists of the physic, biology, and chemistry for makeup of products. It can be used to recombine processes, preserve and store ingredients of new cosmetic or agri-products.

Technological knowledge: often originating from firm experience through university or bio-labs partnerships, involving chemistry, engineering, microbiology, and nutrition to convert crude animal and vegetable materials into final products.

Market knowledge: is referring to the management science relating to market dynamics, diversities, and industrial trends. In the cosmetic industry, customers differ a lot due to demography, geography, and cultural identity.

Business knowledge: This type of knowledge is created by experts and it involves the most efficient ways to improve management technics and release financial gains and building a business case around the development of innovative and cosmetic products.

The examination of the existing literature shows a strong conceptual heterogeneity. Each approach of the innovation ecosystem concept is made in a specific way and depends automatically on the mobilized theoretical framework (Smida and khelil, 2008). Also, such concept has a multiple configurations following the attributes and actor's relationships that expand and evolve continuously. The following table resumes the innovation ecosystem's attributes and the key elements within the cosmetic and agri-food industry.

Table 2: Innovation Ecosystem within cosmetic and agri-industry: Characteristics and key elements

Characteristic's type	Description	Key elements related to entrepreneurship and innovation strategies	Types of knowledge related to entrepreneurship and innovation activity
Cultural	Cultural attitudes that support entrepreneurial activities and innovation.	Local examples of successful entrepreneurs, skilled workers, regional attributes, region's history, advertisement unique characteristics of the city	Business knowledge Market knowledge
Social	Presence of social networks that connect investment capital, mentors, younger	Human capital, networks, role models, interconnectedness, co-spaces, diversity, social	Technological knowledge Market knowledge Scientific knowledge

	entrepreneurs, advisors. These networks must facilitate the free flow of knowledge and skills	equity, synergistic relationships, innovation cultivators, policymakers, large companies,	
Material	Public programs, regulations, support services, physical infrastructure, open markets that support entrepreneurship and innovation activities within universities, firms, organizations, and knowledge spillovers.	Universities, open markets, government, infrastructure, industrial structure, office places, networking assets, institutions, specialized labs, policymakers	Technological knowledge Market knowledge Scientific knowledge

Source: *Ben Spigel, 2015.*

2.3 Innovation: From Technology-Based model to Innovation Management

Innovation is a responsibility of all firm's units and departments; their involvement needs to be specified as firms seek the most efficient models to maximize their innovation capacity (Ansoff, 1965). In this context, an enterprise's ability to identify, acquire, and develop innovative products and services is therefore the most important arena of enterprise's management.

Hence, technology-oriented companies or market-oriented firms are both influenced by new technologies and world induced impulses (Christiansen, 2000). Thus, firms apply different innovation strategies and combine various characteristics of innovation (product, process, market, and organizational ones), to face challenges originated from both technological or market sides, which are considered as innovation strategy determinants. The various combinations of these innovative strategic views gave reason to the following question: What is the adequate conceptual framework integrating the above aspects for a successful innovation strategy?

Every innovation is based on an idea from the in and outside of firm's frontiers, even with some substantial differences between enterprises in terms of innovation strategy depending on their position in the market, the control of a particular resource, and the pure inertia in regard of its ecosystem (Anderson et al., 2012). A better understanding of the determinants above would help to draw an adequate conceptual framework for a successful innovation ecosystem. Roper, Du & Love, 2008; argue that entrepreneurs will follow different innovation paths even if they belong to the same ecosystem, the authors call to consider the firm's prior information resources, external networks, absorptive capacities, sourcing activities, complementary positions according to the innovation ecosystem global strategy.

To reach the perfect innovation process, entrepreneurs cannot anymore depend on in-house innovation and capabilities (Iansiti, 1997). This implies that in addition to the performing in-house R&D, companies use external sources for new ideas, outsourcing of R&D to universities, cooperative agreements with competitors, customers, and suppliers. It seems that there are important benefits to win by opening up the innovation process to external sources of new technologies, and by combining efficiently internal and external paths of innovation (Schmidt, 2005).

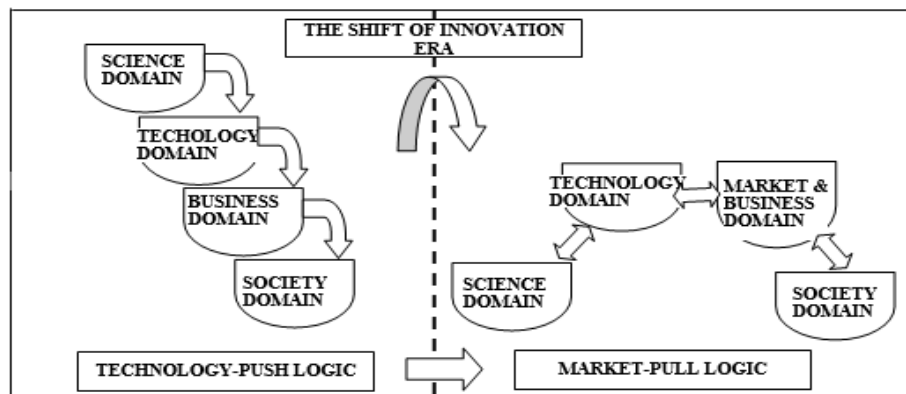
Managing innovation in such a way becomes a modern way to use management processes into strategic goals. These methods receive much attention from the academic world, rather than any other aspects of corporate management fields within ecosystems.

“It’s not the strongest who survive, but those most responsive to change”. Darwin, 1859.

Innovation needs both creativity and a huge budget for investments. Nevertheless, the innovation process has changed in the post-industrial era, whilst different priorities of stakeholders and partners are emerging and require changes in the innovation management model. P. Drucker (1985), emphasizes the role of entrepreneurs and tends to apply management techniques for the innovation process, he considers that innovation as a specific instrument of entrepreneurship endows resources with a new capacity to create wealth.²

Some scholars argue that many entrepreneurs have tend to adopt the classical model of technology-enabled innovation based on scientific discoveries that can be converted into inventions and are developed further in the business domain. Whilst some changes have occurred in the business environment and especially in emerging countries, the process of innovation has become principally a market-driven process with the simultaneous development of technology and business models. The main factors qualified as the most influential on the innovation process are: the emergence of modern management, the evolving sophistication of the markets, the changes that affect the innovation supply chain, and the emergence of the demand-driven process see Figure 1.

Figure.1: The innovation process model’s shift from Technology-based to Market-driven innovation



Source: Authors

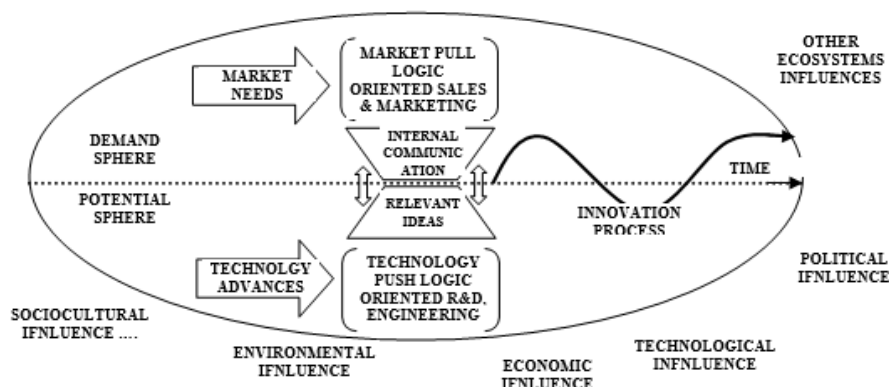
The integration of market pull and technology push in the innovation management following the companies ramifications contributes largely to the complexity of the innovation action. That is why there is always a fundamental dilemma (between radical vs incremental innovation strategies) as described in recent theories balancing between a market and technology opportunities (Sandmeier et al., 2004; Koen et al., 2001; Boeddrieh, 2004).

In the relevant literature, there is a common understanding that innovation management requires collective action and joint efforts within an ecosystem to create shared knowledge from disparate perspectives (H. Attouch, 2017; A. Elabjani, 2016).

The following figure number 2 proposes a conceptual framework for an innovation management model depending on innovation ecosystem dynamics and complexity.

² P. F. Drucker, 1985, “ Innovation and Entrepreneurship, Practice and Principles”, Heinemann edition.

Figure.2: Technological and Corporate innovation strategy within the Innovation Ecosystem



Source: Authors

2.4 Clusters: Entrepreneurship and Innovation challenges

Clusters are groups of companies and organizations co-located in a specific geographic region and linked by formal and informal interactions while providing a homogeneous group of products and/or services. The beneficiaries from positive location-specific externalities, such as human resources, specialized suppliers, knowledge spillovers, competition, and alliances (Porter, 1996).

Thus, the most recent researches state that clusters are differentiated by their specialization in a particular stage of the field's value chain, their specific localization, and/or targeted market segments. The type of local dynamics relating to industrial sectors can also classify them in three categories: (i) local firms (ii) natural resource based industries and (iii) traded industries. Then understanding the differences between these types of industrial clusters is crucial, because it affects the types of strategies that relevant to enhance the cluster's success (Rosenfeld, 2002b).

Furthermore, the theoretical literature suggests that clusters evolve and should be classified by the life stage they reached, which depends on the progress made by the cluster while mobilizing a sum of active elements of his business environment.

2.5 Identification of clusters

What does behind the cluster's concept? Asked D. Alami (2012) while he tries to expose the scientific multi use of this modern managerial concept as a new form of local business development (A. Torres, 2006). So then, to determine precisely the right use of the cluster's concept in the context related to innovation and entrepreneurship logics, we first should observe the evolution of clusters through history.

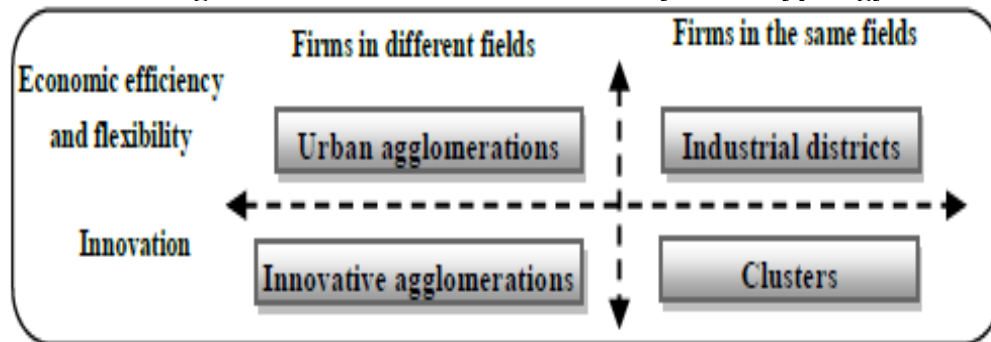
At the end of the 19th century, A. Marshall (1890) approach rises as a pioneer school interested in local innovation systems (R. Dang, 2011) where positive externalities are gathered within the competition emulation, and cooperation between enterprises. Marshallian district success was typically depending on (i) specialized local human resource (ii) economy scale due to co-located intermediary organizations, and (iii) firm learning process. (D. G. Tremblay, 2007).

Otherwise, at the end of the twentieth century, a new concept emerged while regional innovation systems appear with collocated SMEs and multi-sided platforms, which have many different roles in the industrial value chain and the collective innovation progress (Bousseta et al., 2009). Based on qualitative studies, Chabault et al., (2007) described those learning regions

as geographically located entrepreneurs with specific networking around innovation accomplishments and learn accelerator process.

Later, Assens et al., (2010) recognized that an appropriate system for collective innovation takes a form of innovative agglomerations and clusters with some specific characteristics related to economic efficiency, flexibility, innovation process, and technology use.

Figure.3: The collective innovation system's typology



Source: Malmberg, Solvell & Zander, 1996

2.6 Cluster's life cycle: From an urban agglomeration to urban ecosystems

Clusters have their life cycle, which is separate from the other innovation ecosystem's life cycle. Cluster is often initiated in the early stages by a single "clusterpreneur", with leadership later to be taken over by a hired facilitator, it never activated at zero point; there is always a history of the cluster and the previous attempts to organize it.

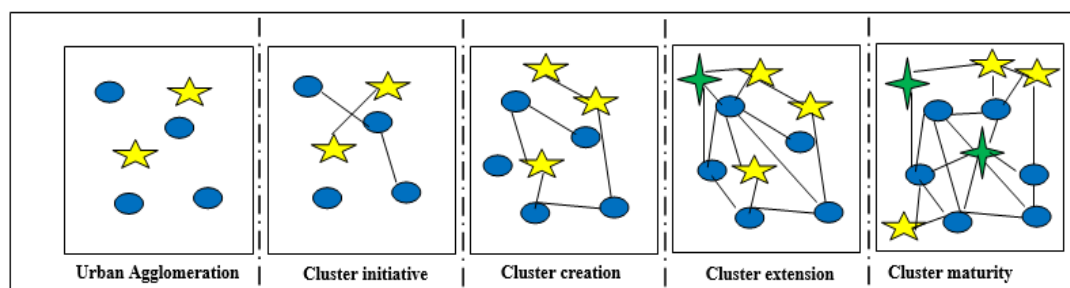
The first scientific analysis, draw it as a new model to organize economic policy in a collaborative way and joint efforts of different actors, such as government, universities, associations, the private sector, and others. Therefore, Cluster projects tend to evolve, and thus why they are presented as a process than a fixed procedure that meets the specific common objectives adapted to the local circumstances of the regional industry (Isaksen & Hauge, 2002).

One element is as important as the evolution of the cluster, the legacy that can involve earlier industry initiatives, like lobbying activities and regional innovation policies by industrial networks hopes.

After a launch period, the cluster will build up strong commitments from the partners around a resource base, which turns the initiative into a formal cluster-based institution for collaboration. The evolution process will feed up the local rivalry, dynamic competition, and intense cooperation organized through various institutions for collaboration such as chambers of commerce, other clusters, and professional organizations, etc. It will also exhibit intense informal interaction based on personal networks.

In sum, tendencies toward cluster's formation have long been influenced by some critical factors, e.g.: entrepreneurship initiative, location of raw materials, local infrastructure, specialized skills, and advanced markets. Clustering experience always offer a fertile ground for innovation and upgrading of a firm's competitive advantage, while challenging the uncertainty and high risk of the innovative process in terms of technical feasibility and global market acceptance (Porter, 1996). Thus, firms in clusters have access to many specialized and endogenous factors of innovation, they also have a free access to world markets as a new form of dynamic networking rise (e.g., Local dynamism, global attractiveness, and global market reach). Clunet (2008) described the cluster life cycle evolution in three major steps: creation, extension, and maturity.

Figure.4: Cluster life-cycle evolution



Source: B. Zimmer, 2012

Kastalli et al., (2013) in their scientific work “collaborate to innovate”, identify multiple actors and various roles, which can be found simultaneously in the innovation ecosystem and clusters. Then they classified those actors on the following categories: Universities (e.g. enhance talent & knowledge), Business endeavors (e.g. banks, large companies, and SMEs), Entrepreneurs (e.g. startups, innovators), Intermediaries (e.g. media, promoters, incubators, and professional networks) and Government (e.g. funding agencies; public infrastructure).

2.7 Cosmetic and agri-food industry in Morocco: What kind of cluster’s structure?

In terms of stimulating innovation, modern clusters act as an innovation ecosystem. According to Moore’s studies, a business ecosystem is an economic community that gathers producers, investors, competitors, banks, suppliers, government agencies, and customers. It takes a shape of an innovation ecosystem or cluster that aims to create and promote products and processes innovation, which should finally, brought to the market with no longer single efforts of an actor but further on critical partnerships (Moore, 1996; Adner & Kapoor, 2012).

Based on the above literature review, we distinguish between three major types of actors that are essential for a cosmetic and agri-food industry innovative ecosystem initiatives:

First, *medical associations and agriculture cooperatives* generally presented as a local community operating in local and regional aromatic plant’s agriculture. The founded methods of plant’s exploitation and commercialization are classic ones or even basic with a principal core of business such as the collect activity of raw materials. Many associations in the ecosystem hope to acquire technology methods, which are useful for aromatic product upgrading and new commercialization techniques to reach the global market.

The intermediaries play a facilitator role inside the cosmetic and agri-industry regional ecosystem. They are represented by experts and investors who seek short-term investment fund returns. Their specific role is crucial for seasonal aromatic plant production enhancement.

Professional networks play a significant role in cosmetic and agro-industry through many companies such as startups that shape a constellation form to promote the overall product value-chain while using modern management methods and value-added innovation processes. Then main economic activities are raw material sourcing, dry process, aromatic production, packaging and commercialization.

Public institutions with a crucial role at different levels of the cosmetic and medical plant’s value chain. They are represented as a regional and national authorities that shape the ecosystem dynamics and boost private investments. As a public institutions, we identify the establishing control quality bodies, scientific labs qualifying raw materials, and specialized learning centers.

In Morocco, the innovative milieu studied shows that the value chain needs some other key activities such as quality control proceedings, human skills rejuvenating, scientific research labs, support logistic chain, and co-working innovative spaces. (A. Elabjani, 2016).

3. Cluster for the cosmetic and agri-food industry in southern of Morocco

In this section, the authors shortly introduce a case study. The M Cluster, which is the leading cosmetic and agri-industry cluster in the south of Morocco, started to implement its innovation ecosystem to strengthen itself as a leading regional and national cluster to reach both the national and international market and hopes to gain a high level of innovation management capacity.

3.1 Research methodology

The guided interviews are the most common form of data collection in qualitative research. The semi-structured interview allows us not only to record data, but also to achieve and reinforce some practices related to our subject of study, which is the cluster for cosmetic and agri-industry products.

The respondents were generally individuals and they have to answer open-ended questions that cover the duration of 45 minutes to 60 minutes. The whole interview was based on an interview guide which gathered many topics with some associated questions related to the central question, which concern the regional cluster structure's efficiency in such Moroccan context.

The recording of the interview allows us to use the verbatim transcript method to restructure the issues and to get the right actor's opinion as member of the ecosystem that host the M. Cluster for the cosmetic and agri-industry.

3.2 Data and description

The survey consisted of semi-structured interviews with professionals and entrepreneurs operating in the medical and cosmetic ingredient's market in the south of Morocco. As a result, we found that many key actors are missing with the innovation ecosystem for medical and cosmetic plants. The interview guide was also the practical expression of the theoretical discussed points.

An interview guide was used to conduct the interviews, which contained open-ended questions and helped us to obtain specific statements about our study aim. Each interview took about 45 to 60 minutes. The interviews were recorded and then analyzed according to scientific standards. The rate of answers is about 60% from the statistical sample, which is so important to be interpreted as multiple actors participated actively in our qualitative study. The following table resumes the different levels of the chain value who were concerned by this questionnaire.

The targeted sample was constituted from 17 firms and commercial cooperatives operating in the cosmetic and medical plants field. Only 11 of them responded actively to our guided interview, which then represents the rate of 60 percent from the targeted sample. The interview techniques employed to gather the data were principally focused on audio recording and note-taking, which preserve the integrity of the expressed opinions (Thiétart, 1999). The interviews made were totally re-transcribed by ourselves to analyze the cosmetic and agri-food innovation ecosystem's structure for this region and to describe the established cluster based on innovation and entrepreneurship logics.

3.3 Study results

The following table resumes results that will help us to introduce the cluster's form within the Moroccan context and to identify the key actors dealing with the studied environment and following their willingness regarding innovation and entrepreneurship challenges.

3.3.1 A multi-characteristics description of the case study

Before to start studying the M. Cluster, we must precise the activities nature of the targeted respondents. We think that the activity nature of the sample should influence the semi-structured interview form.

Cases targeted within the ecosystem	Kind of the industrial or commercial activity	Medical and cosmetic semi-products or raw material acquisition mode	Targeted market levels
From E1 to E17 (only 10 cases responded actively) in the south of Morocco	40% act in sourcing, 10% as intermediaries, 30% in Mid-level production, 80% production and packaging, 90% in commercialization, and 60% of products or raw materials exportation.	60% through intermediaries, 40 % use direct sourcing, 70% through agriculture cooperatives.	70% target the local and regional market, 80% are interested in the national market and 90% operate at the worldwide level market.

3.3.2 Industrial and commercial characteristics of the studied Cluster

The last developed characteristics of the ecosystem members, related to the industrial and commercial strategy show some specific aspects of the established cluster and gives a view on entrepreneurship and innovation logics governing our regional ecosystem.

Three major ecosystem members aspects was identified while the survey was conducted :

- 33,3% act in raw materials commercialization
- 26,7% commercialize first-level processed products,
- 40 % sell completely processed products.

Another major aspect related to the characteristics of the region was identified, as the ecosystem elements expressed the following points of weaknesses to consider while establishing a successful cluster :

- 16,7% lack of human capital and skilled workforce,
- 33,3% expressed the need to acquire new industrial techniques,
- 33,3% and 11,1% respectively expressed the need for marketing and managerial competences.

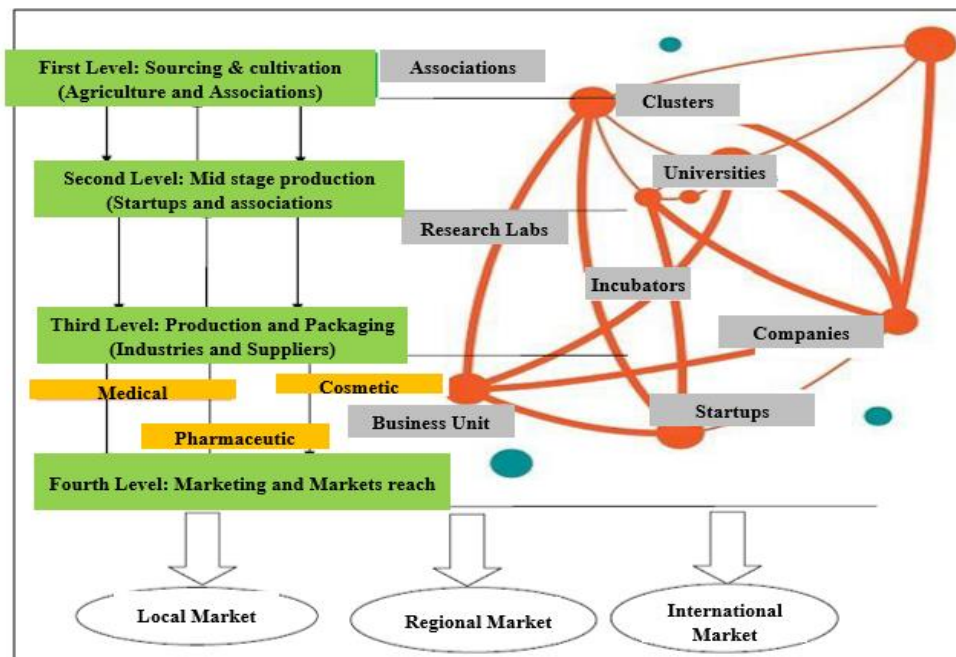
Other significant findings show that the cluster members aims related to the innovation process were focused on :

- 60% try to gain new worldwide market shares,
- 70% try to extend the variety of processed products,
- 80% aims to get innovation products opportunities,
- 30% conduct innovation projects both on processes and products.

Following our research aim and the need to analyze the key elements of a successful framework performing the innovation strategy both sides technological and mercantile ones. The findings show that the cluster organizations are well rooted in the Moroccan country, with many SMEs and cooperatives trying to bring a significant contribution to the innovation, production, and marketing.

Also, the Cluster creation joins the national effort of the Moroccan Cluster Program (2009) and the national innovation strategy program to enhance firm's performance related to entrepreneurship and innovation challenges. The following figure assesses the first established structure of the M. Cluster for cosmetic and agri-food industry.

Figure.5: Innovation Ecosystem structure of the M. Cluster for cosmetic and agri-food industry. (.)



Source: A. Elabjani, 2017

3.3.3 Key attributes of the entrepreneurship and innovation management logics of the M. cluster

According to the characteristics of the M. Cluster's structure and the nature of the activity of its actors. We can identify many key success attributes that shape the innovation value chain and the entrepreneurship strategy within the M. Cluster.

Entrepreneurship strategy characteristics of the M. cluster	Innovation strategy characteristics of the M. cluster	Key success elements with both Innovation and Entrepreneurship logics within the M. cluster
<p>The need to create a cosmetic and agri-food cluster was expressed by most of the participants (80%) and justified by the necessity to reorganize the medical plant's regional market.</p> <p>The emphasis of successful partnership within collaborative spaces (cooperation and governance staff).</p> <p>– The success of the strategy depends on the regional and national efforts to sustain the entrepreneurs.</p>	<p>Most parts of the participants expressed their desire to gain more market shares (80% national market, 90% world) through national and international trade agreements (open innovation process and new products creation).</p> <p>- Urgent need for products and process quality control toward cosmetic oils, aromatic product, medical and pharmaceutical products, and processed food (80% from the agreed sample).</p> <p>- 70% of the sample want to realize a large variety of the cosmetic, pharmaceutical, and food products.</p>	<p>interconnectedness, highly skilled people, market performance, finance vitality, co-labs, successful entrepreneurs, lawyers, government officials, advertising the unique characteristics of the city.</p> <p>The simultaneous existence of the need to develop the province, to satisfy the customers and the membership standards.</p> <p>- Principal factors of the entrepreneurial activity in the cluster are e.g.: perseverance, patience, and success story of entrepreneurs (economic and social knowledge is required).</p> <p>- The shift from expensive R&D to market-driven innovation strategy</p>

<p>– More competition actions towards other ecosystems and the foreign offer (60% expressed this point of view). - 50% to enhance to cluster local capacity (established firms or cooperatives and new entrepreneurs).</p>		<p>with low R&D expenditures due to scientific and technological knowledge dissemination.</p>
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4. Discussion and Conclusion

The paper has attempted to show that actually there is major differences between clusters in the ways in which they have to organize and sustain the innovation management model and the improvement and diffusion of new products and processes within their regional or national environment. These differences can be most easily demonstrated in our case study when particularities of the regional ecosystem affect the cluster model and the innovation management process.

As stated in our case study, the technology push and market-pull strategies cannot be the right or the wrong way to perform a sustainable innovation process. It depends on many specific variables such as the industrial sector, the regional culture, the success history of pioneer entrepreneurs and the local ecosystem. The innovation model of a cluster depends on collaborating actors and include components of competition and substitution of products, services, resources, technologies, etc.

A synthesis of our case study review shows that private and public actors, also the industrial activities are all a major element in an innovation ecosystem, related together through substitute and complement social links. Whereas, the innovation process becomes a collaborative one within the adopted conceptual framework as presented previously through the cosmetic and agri-food Moroccan Cluster.

The lessons of our case study are relevant for companies working in the same field, because their product and service portfolio is predominantly based on all elements of the innovation ecosystem. Therefore, the technology push logic impulses are elementary, affecting radical and incremental innovations and products improvements. While market pulling logic can be a stimulus for the demand emerging from the market at different scales.

The main contribution with this article more generally, is its focus on the actors of the cosmetic and agri-food industry cluster and its focus on complementary and competitive relations within the innovation process actor's. The focus on the prevalent elements of the cosmetic and agri-food cluster provides a more comprehensive view of what is going on in an innovation ecosystem compared to the received definitions as stated in the literature review.

Moreover, it is very important to guarantee a permanent input of technology and market expertise within the innovation ecosystem of a cluster through the front-end innovation process. Further research, should focus more on the right mix of the technology-push and market-pull logics to create innovative products within the innovation ecosystem depending on the elements that can enhance the innovation process through substitute and complement activities of the many actors. The right mix of the two logics will provide in the future research the exact role of the innovation ecosystem for regional clusters performance.

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