The Critical Mass: A Trigger Parameter For Cultural And Creative Cluster Strategies In Metropolises

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Abstract
Cultural clusters are considered to be means by which cities become metropolises and accelerate urban development. Therefore, the presence of resources and actors "critical mass" is the main condition for initiating a clustering process.
Indeed, the critical mass is the threshold to be reached for a city, beyond which it would improve its competitiveness and attractiveness. Once this is achieved, positive externalities make it possible, to establish substantial urban and cultural projects.
Thus, what interactions and parameters can exist between a cultural cluster and the city?
The scope of our contribution is based on the analysis of proactive and reactive intra-urban dynamics around such a cultural urban project and its mechanisms.
It appears that the search for "critical mass" is not a reference threshold applicable to all territories hosting a cluster. Each one is characterized by different conditions; given that Cultural and Creative Industries require mainly on-site production and consumption.
Our paper compares three clusters cases at different development stages, through a benchmark assessment method: an embryonic cluster in Fez, a museum cluster in Istanbul and the cultural cluster of Florence. This is how this comparison challenges us, being at the crossroads of the local environment and global forces.
Keywords: *Critical mass; metropolises; clustering process, cultural cluster; urban development.*

1. Introduction

In actual urban systems, boundaries between culture and economy are gradually blurring in favour of a public action's renewal in cities, ready to support metropolization and urban regeneration within their urban areas and particularly their historical centres.

Through this generalized "cultural frenzy", new organizations such as cultural and creative clusters, as part of regeneration strategies, are beneficial to the territories. This benefit is linked to the proximity relations that govern cultural production in increasingly specialized neighbourhoods. This form of so-called "cognitive" economy requires collective intelligence (Chabou-Othmani, 2015).

Therefore, cities advocate that their urban tissues should have capacities and urban amenities that are necessary for local urban strategy with global effects (metropolitan scale).

The cultural cluster provides a large corpus of knowledge woven by economists, geographers and urban planners, based on the notions of relations environment, social networks of creativity, identity and territorial inking, synergies and geographical proximity.

These notions are considered as a circumscribed complex ecosystem, and are flourishing since they have become the leitmotiv of local development actors, provided they have required critical mass.

The aim of this research is mainly to contribute to the comprehension of the concept of critical mass and its leverage effect in urban strategies for the cultural clusters development.
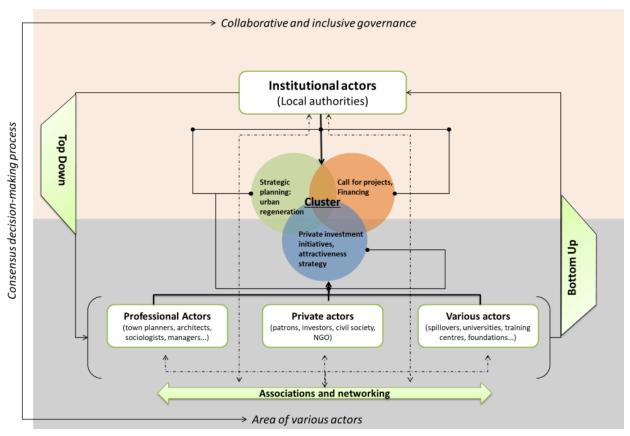
Figure 25. Cluster's parameters ecosystem (Developed by Author)

We propose to study three cases of cultural clusters, which present different contexts and approaches. These examples provide us with information on clustering processes, on models of cluster organization, which have favoured the development of their contexts and cities.

The examples are analysed on the basis of official Monographs, urban planning instruments, theoretical documents, legal texts and city mapping. These allow shedding light on the state of coherence between local urban planning, cultural policy, undertaken actions and recommendations for improving the situation.

In order to go through these steps and reach this paper's aim, the Generic Benchmark method allows the comparative analysis of clustering models in three cities: Florence, Istanbul and Fez. It results in a grid of Key Success Factors as reference for other cases.

The objective of this grid is to identify the strategic issues allowing the development of cultural clustering integrated in the metropolization process of each city (figure 2).
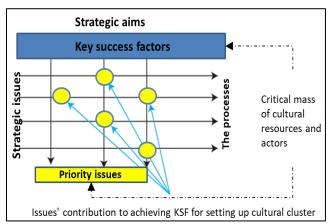

Figure 26. KSFs cross-referencing with clustering challenges for the urban strategy (Developed by Author)

2. What is a critical mass?

Also known as critical size: in the Encyclopaedia of Marketing:it is the threshold that a territory seeks to reach and which constitutes a level beyond which it will be able to improve its competitiveness and attractiveness. At this critical size, positive externalities and local resources allow the territory in question to establish development projects, production cost reductions and improvements in urban quality.

The concept of critical mass is used in several scientific disciplines, notably in nuclear physics where it has its origin. It means the smallest mass reached, necessary to sustain a nuclear reaction at a constant and sustainable level (according to the English dictionary).

In economy, critical mass refers to "the size a company needs to reach in order to efficiently and competitively participate in the market.

3. Transcription of the concept in urban studies

In urbanism, some similarities are obvious with economic science. Particularly, since clusters have a determining and structuring role to play in economic development policies in all cities. According to Mikael Porter (1998, p.78), clusters are defined as "*critical masses - in one place - of unusual competitive success in particular fields. Clusters are a striking feature of virtually every national, regional, state, and even metropolitan economy, especially in more economically advanced nations*".

In 2000, Mr. Porter completed his approach (the cluster as critical mass), by assimilating the factor of the presence of a territorially integrated value chain, characterized by the synergy between all the actors, producers, public authorities, etc.

According to Brenner and Fornahl (2001), critical mass means "*the mass necessary in order to have a basis for more and intensive cooperation, to better harness the innovative potential, to sustainably defend its market position, etc.*".[translated by authors]. Critical mass is determined by the number of firms, employees and other local conditions such as regional human capital, the presence of supporting services, and public research institutions. (...).

After having reached a "critical mass", it is assumed that the cluster will grow in a self-augmenting process.

Thus, critical mass in urban areas is composed of several components. It is complex and related to local resources, to a system of actors and networks, to different proximities (organizational, cognitive and territorial), generating a dynamic process of collective learning (Camagni, 1991).

Thereby, it is a transcription in a geographically circumscribed perimeter, of optimal actors' size, resources and strong interactions between actors (bottom up and top down governance), research organizations, local authorities, various corporations, all relying on the presence of risk capital, with a strong territorial anchorage.

4. City versus cluster: interactions for the critical mass constitution

One of the important factors relating to the constitution of a critical mass is the role of urban actors, as town planning including clusters implies the interaction between several scales of public action.

The task of urban ecosystem is to seek a balance and a favourable environment for entrepreneurship (figure1).

Besides the attractiveness strategy advocated by a city has an interface role between economic policy, social policy, and urban development at several levels:

- Supervision and participation in the governance of the cluster;
- The development of real estate offer, business parks and urban services;
- Improvement of the socio-cultural, urban and ecological performance of the city (resilience of the urban ecosystem);
- Improvement and reorientation of economic policies towards the needs and specificities of the cluster;
- Adaptation of urban planning tools to the organization and development effects of the cluster;
- Adoption of communication, marketing and branding actions in favour of the cluster;
- Organisation, participation and monitoring of incubators, spill-over and think tanks for the development of the cluster;
- Investment in major structural equipment (research laboratories, etc.).

Confronted with this proactive strategy of cities in favour of critical mass constitution ; clusters are the driver force of urban regeneration and a differentiating factor in favour metropolization process.

The phenomenon of reaching an optimal size is also based on the interactions between the centripetal forces that the city offers, and conversely, the positive qualitative changes that cluster generates for the city and its attractiveness. For territories that are not attractive enough, the issue of image, a marketing strategy, and events, is a crucial feedback for actors' critical mass, favourable to clustering.

The diagram below summarizes the components of the critical mass and the centripetal forces that interact for the creation of a cluster.
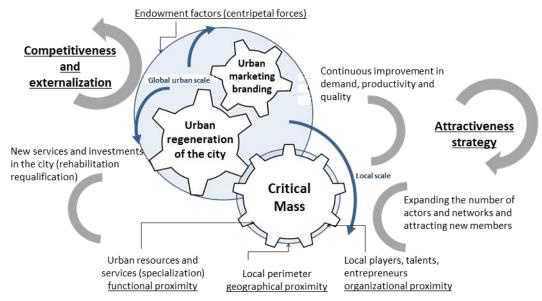
Figure 27. Virtuous circle of critical mass constitution in relation to its centripetal forces. (Developed by Author)

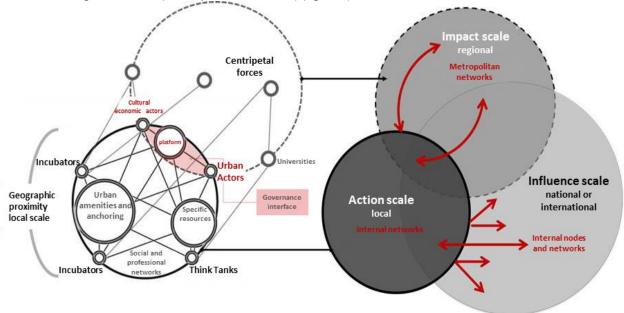## 5. Critical mass and cluster's ecosystem, which scale?

It turns out that achieving a critical mass is not the only strategic issue in urban planning. By considering the cluster as an ecosystem, the search for a balance is necessary (Berezowska-Azzag, 2005).

It includes the critical mass of resources and services, the critical mass of actors and networks, but also centripetal forces as well as various factors corresponding to the local (clustering) scale and the larger metropolitan scale which cannot be dissociated.

Furthermore, the ecosystem is by nature dynamic and conditioned by "factors" that maintain optimal development conditions (ecosystem resilience capacity) (Berezowska-Azzag, 2005).

This characteristic brings us back to the question of relevant scale of study of clusters. Within a clearly delimited perimeter, the local scale is obvious. But for a strategy to be planned according to the triggering factors and the existing critical mass; it is actors and institutions on a larger scale that condition development.

A cluster considered as a critical mass of resources, actors and organizations is then at "the crossroads of the local environment and global forces" (Leducq and Lucco, 2011) (figure 3).

Figure 28. Critical masses (of actors, networks, resources), centripetal forces and triggering factors, geographically concentrated (Developed byAuthor)

From this, it appears that reaching critical mass is a moving target. Evaluating the dynamics of reaching but also improving a critical mass is more complex than the critical mass itself.

On urban scale, the dynamics of a critical mass leads to relativize its validity and to recommend other bases for composing a development strategy in an increasingly dynamic and competitive urban context (Mommaas, 2004). The challenge for urban actors is to know how to find a balance between the search for optimal critical mass and a meticulous knowledge of the territory. It is a balance, between the interest in asserting strategic functions for metropolization and the need of proximity and legibility required by citizens. The following table summarizes the advantages and disadvantages of the critical mass acquisition process for clustering.

Table2. Positive and negative effects of critical mass constitution process

Positive effects	Negative effects
Development of local culture	Instrumentalisation of local culture
Direct and indirect economic productivity of cultural heritage	Emergence of social cleavages
Strengthening ties and local culture	Exceeding the tourist carrying capacity
Reduction of mass tourism	Conflicts of interest and capital movement and
Integration of sustainable development principles.	metropolization problems.

6. The cultural cluster a contextualized strategy

To understand how the different factors and components (critical masses) interact within a defined perimeter, three clusters are analyzed. This approach is a horizontal comparison (Generic Benchmark), where the contexts studied do not necessarily have the same socio-economic or urban characteristics, but the strategies adopted inform us of the possible approaches, scales and components (different parameters) that can be used as inspiration for possible urban projects in this direction.

The examples, while different, are selected according to common criteria:

- They are cases of historic centres marked by the presence of an imminent urban and cultural heritage;
- The integration of clustering mechanisms in local urban planning;
- A local territorial scale relative to urban perimeter of proximity;
- The importance and key role of private and economic actors in the cluster's governance ;
- Typology of cluster development (Birth, Maturity; organic or planned).

The purpose of choosing these examples is to:

- understand the endogenous and exogenous factors contributing to the development of each cluster;
- identify the different actors and the possible relations existing between them;
- understand how economic, cultural and urban strategy policies integrate the cluster tool in planning;
- Identify the parameters of a necessary critical mass that could be used in the modelling of a cluster in another context according to a specific roadmap.

6.1 The cultural heritage restoration cluster of Florence (Italy)

There have always been references to culture and heritage in relation to the destination "Italy". The heritage restoration cluster in the historic center of Florence presents itself as a unique model in the panorama of clusters in Third Italy, as it is the only production pole linked to the cultural heritage sector, with pioneering collegial governance and a high technological potential.

It promotes and coordinates restoration projects, while developing technologies related to the classification and study of architectural heritage and its safeguarding. It also promotes collaboration between companies and institutions that support research and experimentation, encouraging the exchange of knowledge between the scientific and business communities. In this sense, it is considered success story.
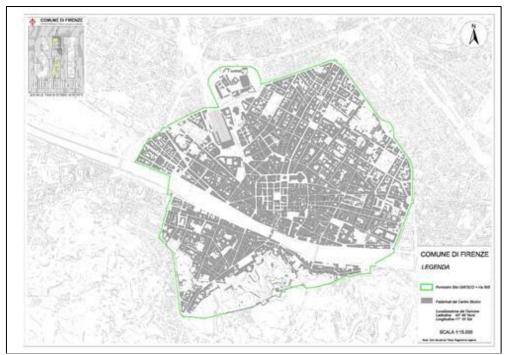
Figure 29: Florence historic center (https://whc.unesco.org/en/documents/101315)

6.1.1 Consolidation of critical mass through cultural scenography

Florence has developed a far-reaching system of symbolic scenography in architecture and urban planning. Its cluster integrates and encompasses practically all the public monuments in the city center: the current Palazzo Vecchio and Loggia deiLanzi Orsanmichele and Santa Anna, the Palazzo del Podestà, the Cathedral, the Campanile La Loggia del Bigallo with a network.

The illustrious monuments, built between 1290 and 1400, are thus, brought together in a complete historical panorama, where almost all of them have been the subject of monographic studies on the history of their construction, their financing and their creators.

This project started in 1999 between the region of Tuscany and the municipality of Florence (Lazzeretti, 2003).

The "*elettronica per i beniculturali*" was the first validated form, then in 2002 the cluster was constituted with a considerable critical mass: a cultural capital (architectural and cultural heritage), the local presence of research institutes and SMEs specialized in the conservation of heritage of national fame, as well as the presence of a workforce specialized in cultural productions. Therefore, it is a consolidated cluster at the height of its development.

The cultural cluster of Florence is considered as a system which it is:

- Complex (involving a vast and diverse set of actors and objects);
- Relational (functioning and efficiency depend on a structure of relationships);
- Scheduled (subject to a top-down planning);
- Participatory (involves a diverse set of topics in a network).

But two central elements are raised, according to Lazzeretti (2009) :

First of all, this cluster does not arise spontaneously as a result of History and the environment, but it emerged through a clear strategy and an institutional project conception, approved by the initial actors.

Secondly, it is a multi-product cultural cluster, driven by maximizing the beneficial effects of clustering and introducing a maximum of actors.

6.1.2 Operations and undertaken actions

Florence has adopted a metropolitan strategic plan to support its cultural economy and to accompany the smooth running of the cluster. To this purpose, the Metropolitan Planning Agency (Firenze Futura) in collaboration with Florence Municipality and the University, have adopt action plans in which the cluster operates in the following sectors:

- analysis and diagnosis in the historic centre and major monuments ;
- the development of ICTs for the restoration of heritage;
- high-level training in the field of restoration;
- innovation and technology transfer, through inter-city and worldwide cooperation;
- the internationalization of knowledge by encouraging the mobility of researchers and professionals;

- the management of cultural and landscape heritage, through the control of gentrification and housing ;
- Research and experimentation of "guidelines" and best practices for restoration and reconversion;
- The implementation of the management plan in collaboration with UNESCO to identify critical aspects of the site, the opportunities and measures for protection and enhancement, and their impact on local development. This tool has evolved by incorporating the economic and innovation dimension related to this heritage and Florence's strong specialization in this direction (GIS, risk management techniques, etc.);
- Setting up the Florence consortium to improve cultural and scientific productivity in the direction of heritage.
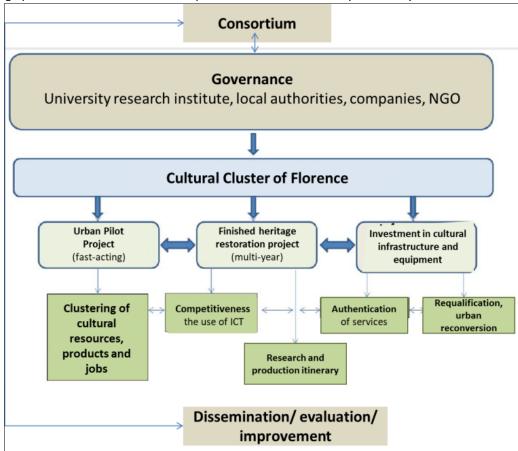
Figure 30. Florence Consortium organisation (Developed by Author)

6.1.3 Malfunctions and issues

Despite the positive aspects of synergy between actors and the high specialization of Florence's cultural cluster, it is useful to examine negative elements compromising the effectiveness of this strategy. The problems of coordination of planning instruments and actors; the transparency and representativeness of these instruments; the lack of a marketing and visibility strategy (labels); the inefficiency of certain concerted actions and the administrative and legal capacity of the cultural cluster are all negative points that the actors seekto remedy.

The challenge is to improve the international visibility of the cluster and to promote the know-how of all local actors in the management of cultural heritage and its restoration. For this, the Municipality of Florence relies heavily on cooperation with the university and on political stakeholders such as MEPs to present the experience and competitive advantage of the cluster at the level of the European Commission (Favoreu, Lechner, &Leyronas, 2008). Moreover, many projects on a European scale are proposed, such as the Project Places - Development of the concept of the European City of Scientific Culture, or the Joining Forces project - Good city-region strategies, in response to the main urban issues[19].

In addition, the increased competitiveness and attractiveness of other European cities such as Barcelona, Marseille and Bristol, have meant that the strategic challenge for Florence is currently to modernize its urban tissue, by converting

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[19]Official website of Florence Municipality,
http://www.comune.fi.it/export/sites/retecivica/comune_firenze/comune/Progetti_Europei.html

certain monuments, providing entertainment in public places and opening up the historic center to cooperation with other European cities[20].

6.2 The Culture Valley of the Golden Horn (Haliç of Istanbul)

Istanbul is a megalopolis and a dynamic cultural capital whose tourism is a major pillar of its urban policy. Its historic peninsula concentrates high densities of population, employment and trade (Yerasimos, 2016). It is dynamic and in the process of being rebuilt.

As such, the historic center was placed at the heart of public interventions as early as the 1980s. Several development operations were carried out, particularly along the Golden Horn where industrial and naval activity disappeared, releasing large wastelands and numerous buildings.

In addition to restoration operations, rehabilitation of a minor heritage by the municipal authorities, private museums, founded by businessmen-collectors-donors, emerged and made a name for themselves.

They participate fully in the gradual establishment of the private museums cluster that the local authorities are seeking to frame and control. From the installation of private museums arise very dynamic and complex socio-spatial decompositions. These are manifested through phenomena such as the gentrification of neighborhoods that raise controversy.

Figure 31. Industrial heritage of Golden Horn Istanbul (Gunai, 2014, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1017.922&rep=rep1&type=pdf)

6.2.1 Critical mass of the cluster

In order to identify the critical mass of Golden Horn cluster, during our reading of the urban studies carried out in the Istanbul Urban Observatory and in the official websites of Istanbul, we were confronted with the predominant characteristic, which is that private patronage and investors are the main actors of the cultural, urban and economic scene. More than 53% of the investments in museums, donations, etc. are the contribution of these actors. So wouldn't the critical mass of the Istanbul cluster be mainly a critical mass of actors? If so, is there synergy and coherence in their actions?

6.2.2 Who are the private actors in Istanbul?

After the 1980s, public authorities handed over the monopoly of cultural promotion to private actors and non-governmental institutions. "The Turkish state has not had any relations with art for more than twenty-five years and the vitality of the artistic world in Istanbul is exclusively due to the independents" (Seni, 2010, p.5). This retreat of the state has left place for private foundations, universities and the city's notables in the process of transforming its cultural landscape. Moreover, this transformation of the city allowed it to be elected as European Capital of Culture in 2010.

This "era of patronage" (Seni, 2010), has emerged in parallel with the attempts and projects of the Istanbul municipality and its town halls such as Fatih, in heritage regeneration projects in the wastelands of the Golden Horn.

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[20]Cooperationwithin the framework of the "Joining Forces" project, http://urbact.eu/en/projects/metropolitan-governance/joiningforces/homepage/

6.2.3 Stakes of the museum cluster process

According to Jean-François Pérouse (2012), the current conservation policy focuses exclusively on the monumental (only the largest monuments, Saint Sophia, the Süleymaniye Mosque) and does not take the entire historic peninsula, like residential and minor heritage. This fragmentation is because devitalized minor heritage is not a focus of interest for authorities. However, in some neighborhoods, gentrification is gaining ground with new ad hoc services.

The issue at stake is to find solution to this situation. To do so, the municipality of Istanbul has worked with UNESCO to take in charge minor heritage. The realization of a management plan for historic peninsula is recommended, despite the persistent planning vacuum. So the recommended new projects became the key to "Marketing Istanbul", demonstrating to the local population their interest in minor heritage. Among these projects, the one initiated by the Fatih City Hall and the municipality (IBB), through articulated scenarios, given that the site is complex and contains industrial wastelands, listed monuments and residential heritage at the same time.

- First scenario focuses on reducing cultural concentration in the historic peninsula, and diversifying supply.
- Second scenario focuses on the creation of pedestrian links to connect museums and cultural centres with each other and with tourist circuits.
- Third scenario envisages four protection zones according to the importance degree.
- Fourth scenario proposes to "harmonize the built landscape", through the creation of the Culture Valley.

On the whole, the four scenarios do not form a single large coherent scenario and make no reference to the Culture Valley as a dynamic cultural and tourist entity. The cluster of private museums thus remains isolated.

In our view, this general situation shows two aspects: first, there is a clientelistic policy in favor of patrons, which excludes local population in the decision-making process. Second, although private investment and gentrification are profoundly transforming the landscape, this cultural cluster remains at the embryonic stage and still not administered by metropolitan authorities.

6.3 The cultural cluster of Fez: strategy between heritage insertion and cultural economy

Fez is considered the spiritual, intellectual and cultural capital of Morocco, where an atmosphere of mysticism and labyrinthine structure of its Medina seem mysterious and incomprehensible, escaping all functional rationality. The tourist policy of Fez is based on two assets: it has one of the oldest universities in the Islamic world, and it is the largest Medina in Morocco and the Maghreb.

Several projects for the Medina safeguarding and the strengthening of craftsmanship have been encouraged and programmed between 1996-2015, with the help of international donors such as UNESCO and the World Bank. The aim is to make the Medina of Fez a showcase and a pilot to learn from the links that can exist between economic and social development and the preservation of an architectural and urban heritage (LahbilTagemouati, 2010).

Indeed, the Moroccan Medinas are no longer impoverished and decayed spaces, and are not museums intended exclusively for tourists. These historic centers have become residential and economically alive, even if they are still confronted with social problems and the management of their heritage heavily invested by tourists (exogenous gentrification) (Kurzac-Souali, 2012). The acquisition of houses in the Medina and the transformation into Ryads is a particularly imminent phenomenon, which leads to its being considered as affected global city.
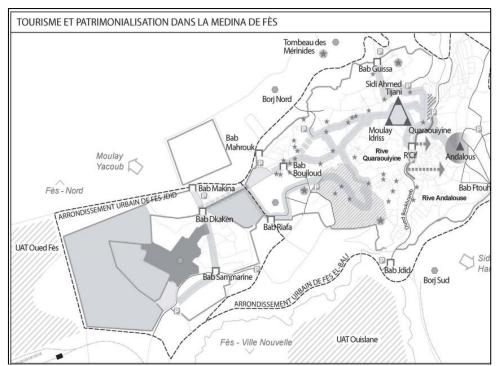
Figure 32. Cultural heritage of Fez Medina (https://doi.org/10.3917/ried.236.0081)

6.3.1 Critical mass of handicrafts and tourism services

The critical mass of Fez Medina cluster is relative to three main dynamics:

- Gentrification phenomenon, revaluation of the land and rehabilitation of old buildings. It is there, a progressive regeneration and setting in tourism.
- Investment in rehabilitation has as a corollary, the revitalization of local economic fabric, affecting employment in the traditional construction and higher crafts boosted by the multiplied sites in the Medina.
- Craftsmen and inhabitants trade in the tangible and intangible heritage of the Medina, its architecture and decoration, so it has become a real incubator, and the new interest in "the Medina product" is growing.

From this growing critical mass, it is noted that cultural function is stronger, capacity for invention and urban model are in perpetual revaluation, offering economic and cultural legitimacy to the cluster of Fez. Thus, the Medina is asserted as *"a pole of contemporary creation and cultural events that are sometimes of global dimension"*[translated by author] (Kurzac-Souali, 2012).

6.3.2 Functioning of the Fez cultural cluster

The cluster's functioning, focused on multidimensional development (touristic, endogenous, social), integrates the heritage rehabilitation and the requalification through urban projects and regional development plans.

Two axes accelerate the clustering process in the Medina of Fez (Boumaza et al., 2006):

- the socialization of tangible and intangible cultural heritage among local population and their consideration of the unity of heritage complex that constitutes the Medina as a potential critical mass;
- the need for renewed centrality of the Medina, towards the pressure it is undergoing from the extensions and the airy urban planning of other parts of the agglomeration.

However, from the current situation, several criticisms are heard:

- The purely architectural approach is not accompanied by a real social improvement of the Medina's cramped inhabitants, so a social project management is necessary (Navez-Bouchanine, 2006).
- The absence of social networks between craft guilds, "ordinary" actors and tourists shows the lack of synergy.
- Although all considerable benefits, they will only have a significant impact through coherent structural interventions, a holistic strategy is lacking.

7. Overview of examples' analysis

The cultural cluster of Florence, although it is well ahead in the management and development of cultural heritage in Europe, remains an optimal model of integrated management and good governance. It refers to the concept of resilience beyond its definition of the capacity to adapt and maintain its function and development by all actors.

Nevertheless, the cultural cluster of Istanbul does not conciliate cultural influence and social equity. This is beyond the very competitive position of Istanbul on a global scale in terms of cultural tourism, to which the cluster contributes favourably. The cluster is only considered as an urban acupuncture in the heart of the historic peninsula, to rehabilitate and gentrify the urban Golden Horn area.
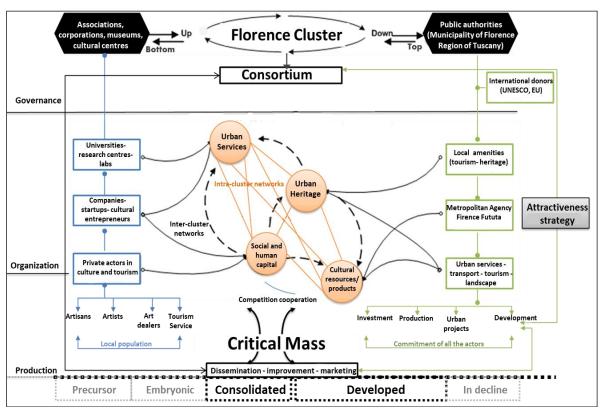

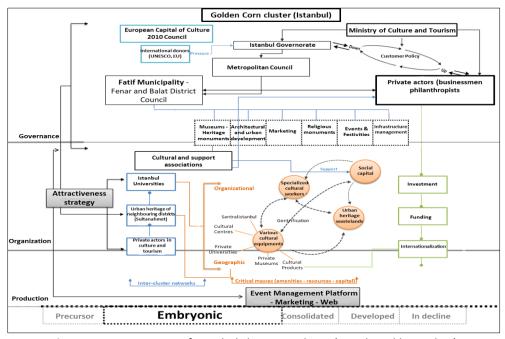**Figure 33.** Organisation of Florence cluster synthesis (Developed by Author)

Figure 34. Organisation of Istanbul cluster synthesis (Developed by Author)

As for the cluster of Fez Medina, the local urban planning practice and the management of cultural assets are being accelerated by both public and private actors. Also, financial aids, international expertise (UNESCO, World Bank) as well

as strong cooperation between Moroccan government, urban agencies, private groups and the opening to Europe, are important factors in the success of the urban strategy.
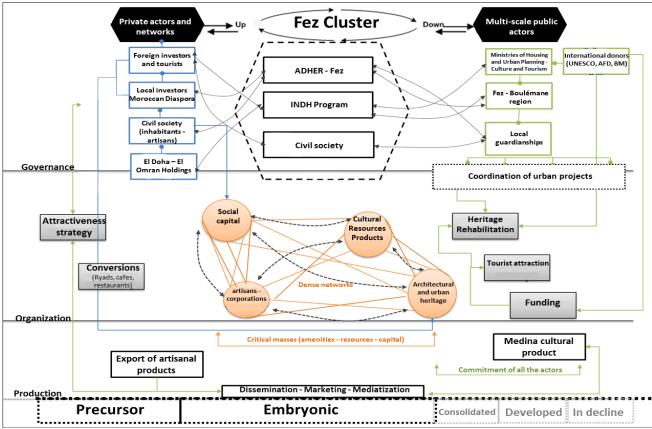

Figure 35. Organisation of Fez cluster synthesis (Developed by Author)

Thus, perpetual challenge remains to integrate all actors and donors as well as local population around the strategy of regeneration, to avoid the punctual and disjointed effect of different interventions, as well as to protect the historic tissue from any loss of authenticity.

In synthesis of these three examples of clusters, some permanent factors necessary for different strategies are stated (table 2). The objective being to develop the urban strategy, not only in terms of urban regeneration, but also to think about how to solve the inherent social problems and optimize local economic development, all within an eco-systemic logic.

Table3.Kyes Success Factors grid for building a critical mass process

Keys Success Factors
Degree of institutionalization/jurisdiction of the cultural cluster
Share of budget devoted to culture from State budget
Composite index of participation in cultural activities
index of the time devoted to cultural consumption in the territory concerned
variation in the number and size of public and private cultural facilities
Contribution of urban heritage capital in strengthening the local budget
Contribution of cultural resources to economic / tourist attractiveness
Share of skilled labour in the cultural sector
Degree of adaptability of craft skills to the economic and touristic world
Complementarily of isolated and heterogeneous actors
Level of digital connectivity of the cluster
Capacity of public actors to develop cooperation, both local and international

Degree of citizen participation in the functioning of the cultural cluster
Cultural Goods and Services Price Index
Export/Marketing Index for Cultural Products and Services
Rate of growth in the value of the culture housing stock
Rate of private real estate investment contributing to the increase in the use value of real estate
Rate of access to cultural information resources by the local population
rate of cultural investments recorded in the cluster by the local population/ patronage/ FDI
rate of tax incentives for local population/investors in the cultural sector
Share of residents' investments in receiving tourist visitors
Presence of a cluster urban marketing strategy
Degree of correlation between cultural, academic, political and economic institutions
Index of use of foreign languages by cluster actors
Change in new cultural products / the whole offer
Diversity index of cultural workers/local community
Number of training courses in the cultural sector (cluster as workshop area)
Degree of cooperation/ internal coordination of investments/ activities/ creations

8. Conclusions

Further to the critical mass analysis and cultural clustering strategies through examples, it results that these strategies show nuanced results and did not have the same success in the three cities studied; even if each one presents variations of positive and negative results according to the initial targets.

Beyond different critical masses of each cluster and the different proximities, synergy and good participatory governance of all actors, especially local population, remain the keystone of the strategy.

Also, the success of the clustering strategy depends on the commitment degreeof actors, from different sectors around a common project.

We come to the conclusion of this paper to affirm that the clusters studied do not present the same success, hence the importance of cultural factors, trying to explain the determinants of performance.

Three main facts arise:

- Although the cultural cluster is defined as a strategy, the clustering process varies from one city to another. It depends on the primary endowments and critical mass of each city.
- Although the presence of a critical mass of resources is a sine qua non condition for clustering, other parameters are also necessary such as the presence of strong networks, proximity and synergy between all actors.
- Cultural clustering, which is part of the local scale, draws its strength from a larger scale which is that of the metropolis with an "urban and cultural atmosphere". Services and infrastructures offered by the metropolis are centripetal forces that serve as motor for cluster development.

Consequently, in order to assess the effects of agglomeration/specialization, it is shown that an optimal critical mass is difficult to define because it is relative. An evolutionary development process would then include flexible and evolving critical mass, which is acquired during metropolization process.

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