City, Culture and Society 2 (2011) 151–158

Contents lists available at ScienceDirect

City, Culture and Society

journal homepage: www.elsevier.com/locate/ccs

Rethinking urban creativity: Lessons from Barcelona and Montreal ☆

Patrick Cohendet *, David Grandadam, Laurent Simon

Service des Affaires Internationales, HEC Montréal, 3000 Chemin de la Côte-Sainte-Catherine, Montréal, QC, Canada H3T 2A7

ARTICLE INFO

Article history:
Received 29 January 2011
Received in revised form date 30 May 2011
Accepted 3 June 2011
Available online 18 July 2011

Keywords:
Creativity
Cities
Places
Spaces
Projects
Events

ABSTRACT

Creativity in a city requires that new knowledge and innovative ideas transit permanently through three different layers of the city: the *underground*, the *middleground* and the *upperground*. The *underground* is comprised of creative individuals who are not immediately linked to the commercial and industrial world and whose culture lies outside the corporate logic of standardization. The *upperground* is the level of formal institutions or firms, whose specific role is to bring creative ideas to the market. The *middleground* is the level where the work of collectives and communities enables the necessary knowledge transmission that precedes innovation. Successful creative areas in cities are loci where the *middleground* plays a key role for the city as an important element of cultural creativity. When the *middleground* has not yet formed or has been neglected, major obstacles limit the emergence of creativity. To illustrate this viewpoint, we study and compare two specific districts in the cities of Barcelona and Montreal, to pinpoint and analyze the presence or absence of a rich *middleground*, to assess its critical role and to examine the practical measures that can be taken to rethink creativity in these urban environments.

Introduction

Understanding how cities can provide a favorable environment for individuals and firms to pursue their creative endeavors has become a key issue in today's economies. It is now at the forefront of UNESCO's mission towards cultural diversity in both the developed and developing world, with programs such as the Creative Cities Network. This initiative provides a global platform for cities around the world allowing them to share their experiences and create new opportunities for themselves and others. Cities can indeed play a major role in defining the paths of creativity both locally and globally. Yet, many questions remain as to how cities can effectively harness human creativity and fully take advantage of their creative potential.

This paper is an attempt to clarify and improve our knowledge of the dynamics of creative activities in cities. The following questions are raised throughout this work: how is creative activity carried out in these specific urban ecologies? How do individuals, communities and firms coordinate their actions in order to produce and diffuse creative goods and services? What are the policies to implement in order to promote the ongoing dynamics of creativity?

These issues have often been neglected (or mistreated) in the economics literature due to important omissions in the traditional approaches on creative activity. According to these theories, creative externalities usually emerge either from the proximity between skilled individuals in the *underground* (for example, as suggested by Florida, 2002, 2008), or from the proximity between firms and institutions in the *upperground* (as depicted by Caves, 2000; Howkins, 2001; or Hartley, 2005). The *underground* and the *upperground* offer substantial ways to cultivate skills inside a creative milieu. However, both function on entirely different modes and only rarely connect to each other.

Throughout this analysis, we suggest that the value of creative activity in cities mostly relies on a so-called *middleground*, which is the level where creative externalities are actually generated. The *middleground* plays a crucial role in the dynamic process of a creative city by efficiently blending the *underground* with the *upperground* in a network of close and distant relations. In this intermediate level, communities and collectives represent the true sources of creativity. These communities form particular repositories of creative skills that are not explicitly controlled or owned by firms, but that widely contribute to

☆ This paper has been presented at the International Symposium on City, Culture and Society – Reinventing the City for Cultural Creativity and Social Inclusion, Osaka City University, Japan, December 15–18, 2010. The authors thank the participants for many useful remarks that have helped improving the paper.

* Corresponding author.
E-mail address: patrick.cohendet@hec.ca (P. Cohendet).

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doi:10.1016/j.ccs.2011.06.001

drive and influence the trajectories of creation (Amin & Cohendet, 2004; Amin & Roberts, 2008). Accordingly, one of the main characteristics of a creative *middleground* is that it is not exclusively "economic" but can still enable economic ties to be forged.

Within the *middleground*, agents are expected to voluntarily cooperate with one another in closely-knitted clusters. This open innovation process can almost never be achieved virtually. Agents must interact directly with one another through ongoing face-to-face exchanges in order to fully develop and integrate their creative ideas (Bathelt, 2005; Grabher, 2001; Maskell, 2001). Virtual relations may be sufficient in one particular sector, but do not (or at least rarely) facilitate knowledge transfers between different fields or domains. As a result, the creative process can only be efficient as long as the various agents regularly get together in the different places and spaces offered to them by their local environment, or whenever specific projects and/or events are conducted in the city. In other words, what is essential for the creative process to become effective is that the creative city be equipped with a valuable set of places/spaces/projects/events enabling the production and diffusion of knowledge assets throughout the different layers of the local milieu.

The main theoretical implication of this paper is to highlight the crucial role played by these places/spaces/projects/events in the evolving process of creativity inherent to complex urban structures. These places, spaces, projects, and events are fundamental in defining the quality of the *middleground*, by enriching it and stimulating its capacity to link the different actors of creativity. Understanding how they can contribute to bridge the creative, artistic and cultural industries, on one side, and the individuals who work in related occupations on the other side, appears to be fundamental in order to fully grasp the dynamics of these local innovative ecologies of knowledge.

This paper begins with a critical review of the literature. The theoretical framework of the paper is then introduced. The final section of this paper is dedicated to the empirical analysis, drawing more specifically on the case of two creative districts: "22@" in Barcelona and the "Quartier de l'Innovation" in Montreal. Both these districts aim at becoming amongst the most creative clusters in the world. Their experience can serve as a basis for future developments within UNESCO's Creative Cities Network.

Critical literature review

Throughout the economics literature, agglomeration mechanisms have only rarely been applied to the creative industries. The focus is generally on innovative territories, such as industrial districts (Jacobs, 1969; Marshall, 1961; Panne, 2004), innovation systems (Freeman, 1987; Lundvall, 1992), geographical clusters (Anderson, 1994; Porter, 2000), or innovative milieus (Crevoisier, 2004; Hall, 1998). What matters in these approaches is the commercial outcome of inventive activity. Externalities emerge from the formal and informal relations between the institutions of science on one side and the industrial firms on the other. In this sense, innovative territories rely on specialized linkages mostly defined in terms of transaction costs or in terms of affiliations within a similar field. Thinking at the surface of this institutional level can explain the degree and nature of innovativeness of industrial agglomerations. It therefore can help characterize the type of cluster at stake, as well as the type of firms (Audretsch & Feldman, 1996; Breschi & Lissoni, 2001; or Feldman, 2003), and/or the type of institutional intermediaries within this cluster (Athreye, 2001; Chiesa & Chiaroni, 2005; Saxenian, 1994). However, it also entails some limits.

Traditional approaches to local externalities generally do not take into account the power of creative achievements emerging from the particular historical, cultural and intellectual background characterizing each city or region (Currid, 2007; Molotch, 2002). The creative territory gains attraction through diversification (of links and of actors), not specialization, as this is often the case in an innovative territory. The various forms of knowledge developed within a creative territory are not purely scientific or industrial ones. The creative development of cities also depends on significant forms of symbolic knowledge, which are highly context-specific and highly variable by location (Asheim & Gertler, 2005; Gertler, 2003). Firms in creative territories do not exclusively rely on a well-organized scientific universe. Firms also rely on the efforts of an informal world, embedded in the local geographical structure, where individuals express themselves through leisure activities, the visual arts, music, fashion, or the use of new technologies, and from which a myriad of creative ideas emerge and develop. Many industries related to these different domains now inspire themselves from these experimentations (Markusen, 2006).

In the so-called creative economy, the traditional innovation paradigm cannot fully explain the formation of local economic externalities. Innovative territories and creative territories are based on very different principles (Table 1). Unlike innovative externalities, creative externalities are not exclusively due to the proximity between firms and institutions of the *upperground* or between individuals from the *underground*. In our perspective, creative externalities emerge from the articulation between places, spaces, events and projects which all contribute to fertilize the *middleground* by facilitating the junction between the *upperground* and the *underground*, and by enabling the interaction between local and global forms of knowledge.

Theoretical framework

Places and spaces are areas where communities can overlap, allowing its members to formally and informally gather, meet, share their knowledge and learn from each

Table 1
Innovation territories vs. creative territories.

	Innovative territory	Creative territory
Aim	Knowledge integration	Knowledge creation
Active units	Firms Institutions	Firms Communities Individuals
Production of externalities	Through specialization	Through diversification
Examples	Industrial district Innovation systems Geographical cluster Innovative milieu	Creative cities Creative milieu

other (Amin & Thrift, 2002). These specific *loci* of creativity inside a city facilitate boundary spanning as well as knowledge brokering activities. In this setting, projects and events appear as a means offered to the various communities to get together in particular places and therefore transmit and/or absorb new ideas in a temporary space, thus allowing knowledge to transit from the informal level of individuals to the formal level of firms (and vice-versa).

Places and spaces for creativity

Places provide the local milieu with physical platforms of knowledge, where communities can build a common understanding (Amin, 2002; or Rantisi, Leslie, & Chistopherson, 2006). A rich *middleground* requires places (such as cafés, restaurants, performance halls, art galleries, squares, public areas, old warehouses, etc.) where creative agents and industry professionals can eventually meet, wander, confront ideas, build daring assumptions, and validate new creative forms (Lloyd, 2004; Watson, Hoyler, & Mager, 2009). These places, which are often open to the public and not purely market-driven sites, are recipients, combiners and transmitters of traveling or circulating knowledge (see, for example, Mommas, 2004; or Zukin, 1995). They activate the links between different people. In addition, they favor not only the diversity of creative communities, but also provide continuous and ever-renewed opportunities to intertwine communities, transfer knowledge across and within communities, and accelerate the translation of ideas and practices.

Spaces, on the other hand, provide the local milieu with cognitive platforms of knowledge, where different communities can get together and exchange new ideas both locally and more globally. An active *middleground* translates, transforms and confronts local ideas with knowledge and practices issued from different parts of the world. It is a node of multiple connections of varying intensity and geographical distance. For this reason, spaces are necessary to nurture the *middleground*, to activate the cognitive role of local places, to widen the local buzz to other communities, to strengthen the global pipelines, and to help bring the local *underground* to the surface (Bathelt, Malmberg, & Maskell, 2004; Storper & Venables, 2004). These spaces provide various lanes through which different communities establish permanent informal interactions with each other in order to confront ideas and to tap creative practices from other domains of knowledge.

In most cases, creative places and spaces are complementary, with the former leading to the latter. Because word-of mouth plays a major role in the production and diffusion of new ideas and artifacts, spaces usually rely on particular places in order to facilitate an effective interaction among the members of the various communities and in order to guarantee the circulation of knowledge. Hence, places and spaces both appear to be essential in the creative process, as they often determine where the trends and styles are defined, and eventually develop into a global movement.

Projects and events

If places appear as formal meeting points, and spaces rely on these meeting points in order to be effective, both elements can also be organized artificially, as this would be the case whenever a specific project or event is implemented in the city. These projects and events offer an ideal platform for creative agents to present their own work and interact with members of their own community, but also with members of communities working in different sectors. In this sense, projects and events provide a temporary space for creative entities to get together in a specific place and eventually receive a wider recognition on the local and global scene (Maskell, Bathelt, & Malmberg, 2006; Rychen & Zimmermann, 2008).

Many innovative firms and institutions in creative cities are no longer based on functional departments, but rather concentrate internally on the governance of multi-project activities, which involve different communities of specialists (Cohendet & Simon, 2007). These projects provide an opportunity for the members of each community to meet and trade knowledge with other communities. These projects can therefore help different communities produce and promote work from its members, foster diverse reactions and comments, and stimulate renewed inspiration.

The "buzz" may also expand and reach out to other more distant communities. Local communities often interact with the outside world through global virtual platforms with specialists of the same focus of knowledge, sometimes even with members of competing firms. The most important interactions, however, are with the members of the myriad of other communities in the creative city. The scale and scope of a particular project may increase and lead the community to plan specific events (festivals, competitions, or fairs), which may reach a wider audience and attract individuals from a variety of fields. These events are essential in order to revive and refresh the creative process by opening these small worlds to new influences. In turn, this phenomenon stimulates a process of institutionalization aimed at bringing the project or event to potential producers or consumers.

Empirical case study

To a large extent, the cities of Barcelona and Montreal share similar traits. Both cities have approximately the same population. Both border on an important neighboring country, thus serving as a bridge from and into different cultures. Both have two official languages, of which one needs to be "maintained". Both have old industrial zones (in particular harbors) that must be rehabilitated. Both have a consolidated university system and an evolving research system that have been the fruit of an active local technology and innovation development policy. Finally, both offer a rich combination of industries and services organized in different clusters (architecture, design, gastronomy, for Barcelona; aeronautics, video games, performing arts, for Montreal) which enrich the local economy and are globally interconnected.

Barcelona and Montreal offer a rich cultural life with a myriad of festivals, shows, concerts and activities, some of which are major international events. Montreal is the only Canadian city to have ever hosted the summer games. Similarly, Barcelona remains the only city in Spain to have hosted the Olympics. Sports competitions, fairs, forums and other important events have left a footprint of new

infrastructures in both these cities (such as transportation systems, stadiums, villas, civic structures and museums), which continue to attract the local population and entice it to spend on cultural activities, while also attracting many visitors and people from different walks of life. High expenditure events, along with the multiplicity of smaller scope events organized regularly in these cities, have greatly contributed to foster creativity on a local scale. They provide an attractive environment for creative workers from a wide range of different sectors, that can fully integrate the local production system. Montreal and Barcelona are described not only by locals, but also internationally, as lively, "edgy" cities, in which things are done "differently".

Here, we study two main innovative productive districts, namely "22@" in Barcelona and the "Quartier de l'Innovation" (or "QI") in Montreal, following the analytical grid which has been exposed above. These two innovative districts cannot easily be compared. 22@ has experienced a decade of development, while QI has just started. However, what is striking is that both districts have gone through the same course in history, as industrialized harbors active throughout the 19th century, progressively abandoned in the mid-20th century, and which have recently developed new industrial activities in similar clusters.

The data we used is based on a study done by several participants to the 2010 Summer School on "Management of Creativity, Montreal/Barcelona" who carried out an in-depth investigation of the two districts and interviewed most of the main protagonists in charge of the development of these districts (Langlois & Pawlak, 2010). The fine-grained sets of primary data were completed with further direct observations, and sets of secondary data on existing places, spaces, projects and events mentioned by the informants (public and corporate sources). The data and information were finally gathered and compiled in two synthetic case studies.

22@ Barcelona

The 22@ project, approved by the Barcelona City Council in 2001, initially consisted in the transformation of 200 hectares of industrial land in the center of Barcelona into an innovative productive district, concentrating and developing knowledge intensive activities. As an urban refurbishment effort, this project was designed to restore the economic and social dynamism of the Poblenou Quarter, by creating a diverse and balanced environment with production centers, social housing, facilities and green spaces. As an economic revitalization effort, the project offered a unique opportunity to turn the Poblenou Quarter into an important scientific, technological and cultural platform. As a social revitalization effort, the project was built to favor the networking of the different professionals working in the district, while encouraging and supporting innovative projects that foster collaboration among companies, institutions and residents as well as social, educational and cultural organizations.

The 22@ upperground

Since it was launched, the 22@ project has enabled the establishment of 1441 new firms and institutions, of which 70% work in one of the five clusters that the 22@ authorities consider as priority areas: the multimedia, information and communication technologies, medical technologies, energy and design. Overall, 44.6% of these firms were newly launched, and over 42,000 new jobs were created (more than half filled by university graduates). The presence of these firms and institutions has attracted specific services (grants, access to venture or risk capital, networking, etc.) for entrepreneurs from each of the different priority areas.

The 22@ middleground

Most of the structures of the *middleground* in 22@ are "top-down" institutions that aim to facilitate professional relationships in the district. A majority of them are financed by the City Council of Barcelona. Barcelona Activa, the local development agency of the City Council of Barcelona, was created in 1986. This municipal company, which was born as a business incubator with 16 projects installed, has become a local and international reference in the support of entrepreneurs, innovation, professional improvement and job creation. Another main institution of the *middleground* is the 22@ Corporation, which actively participates in the economic promotion of the district and in the international outreach of its entrepreneurial, scientific and teaching activities. It leads diverse projects and offers its firms different support services, such as the Business and Institution Association 22@Network. Other "top-down" institutions specialize in each of the priority clusters of the district, and include (i) the Pompeu Fabra University, focusing on communications related training, research and production; (ii) the Engineering schools of UPC-Barcelona and the new School of Industrial Engineering of Barcelona; (iii) the Barcelona Media Innovation Centre (CIBM), which conducts research, innovation and experimental production projects in the field of communications and audiovisual production; (iv) the new Barcelona Digital ICT Technology Center, which aims to contribute to the development of the Information Society and the growth of the ICT sector; and (v) the 22@Living Lab, led by 22@ and the Barcelona Digital Foundation, which forms part of a network of different urban laboratories operated by the public and private sectors, aimed at developing new ICT based mobile technology products and service.

The 22@ underground

Most of the creative talents working in companies located in the district do not live in the Poblenou area. And most of the inhabitants of the district do not work in the high-tech companies of 22@. As a result, the *underground* remains rather unnoticed in this area. The local authorities are fully aware of this situation and have undertaken extensive measures to enable people to live close to their workplace, to favor the development of local shops and trade, and to guarantee the vitality of the area throughout the course of the day. Traditional homes were recovered, new government protected dwellings were built, temporary worker residences were opened, some industrial buildings were converted into loft-type housing units, and finally, a new mobility plan was set up. Despite these numerous initiatives, many local citizens have criticized

the municipality's choices, considering the 22@ program as somewhat disconnected from the social reality of the district.

The 22@ district exhibits some remarkable traits of an innovative productive district, but most of the positive externalities that are created from the "top-down" efforts orchestrated by the municipality are not yet producing a creative ecosystem. Very few communities, collectives or associations have emerged from "bottom-up" dynamics. A truly creative district based on social inclusion and cultural diversity requires that the social interactions are not concentrated in one particular sphere (firms and institutions of the *upperground*). As already underlined, the local authorities are fully aware of the limited creativity of the district. With this in mind, we now attempt to analyze this situation based on the places/spaces/projects/events grid.

22@ places and spaces

The urbanization program of the 22@ has always been one of the municipality's priority. However, at least at the very beginning of the project, very few "places" were conceived and built to promote pluridisciplinarity and open meetings. A project such as the ICT House, an ICT dissemination and experimentation center led by the Barcelona City Council with the participation of the Generalitat de Catalunya and the Barcelona Digital Foundation, clearly aims at becoming such a place. Located in the MediaTIC building, it aims to improve relations between firms and the public, by providing demonstrations of the uses of ICTs in both the professional world and everyday life. In a similar way, the Barcelona Media Park (PBM) has been conceived as a pluridisciplinary facility, destined to bring together audiovisual technical facilities, offices, training, research and technology transfer centers, short-term residences, and spaces for exhibitions and interaction with the local area. In the district, the role of most places as *loci* of ideas with a worldwide outreach remains relatively limited. The late implication and presence of academic institutions in the district explain their peripheral position. The production of knowledge is concentrated in a few R&D labs and research centers, such that the number of technological and innovative firms remains low compared with the number of consulting firms or service providers (travel agencies, video rentals, etc.). This limits the emergence of a collective space of knowledge production. In fact, in order to promote the district, the most successful initiative carried out by the municipality has been to use the Barcelona label and brand to "sell" its image. Elements such as logos, slogans or colors honoring the city are seen on all public supports. Barcelona adapts its winning formula to the fields in which it wishes to promote itself (business/economics, culture, tourism, etc.).

22@ projects and events

The municipality supports several projects and events to promote the district. The conference HIT BARCELONA is an annual international forum which brings together business leaders, representatives from academia, entrepreneurs, investors and pioneers. HIT allows participants to exchange knowledge, ideas and experiences in a common place. HIT also offers a privileged space for entrepreneurs in search of capital. Finally, HIT offers an international competition which allows 25 entrepreneurs to benefit from a platform to present their projects and potentially benefit from some financial support. Due to its global dimension, HIT BARCELONA is an important instrument in the image making strategy orchestrated by the city. Other projects and events, launched by the municipality, tend to focus on the relations between individuals and organizations, and aim to construct a community that values talent and supports professional qualification as well as innovative business. The 22@Update Breakfast, for example, is a monthly event launched in 2004 where people can meet and share innovative ideas. 22@CreaTalent is a pilot program to foster talent in schools through creative projects, involving different R&D and technology centers, small and medium businesses, as well as the main Catalan universities. The 22@ municipal company also offers a wide selection of services (such as meetings, conferences and workshops), many of them aimed to connect the 22@'s professionals with the international talent community.

Despite these very positive developments, the 22@ district still needs significant improvements before acting as an actual creative "spiral". What is lacking is the presence of individuals and/or institutions capable of connecting the various communities, and articulating the present skills in the various "clusters" of 22@. The lack or absence of creative, artistic and cultural activities restricts the emergence and the distribution of essential creative ideas within the district. As a result, the degree of interaction between the various communities remains rather weak. Throughout 22@ the project, the accent has (too often?) been put on the physical and economic restructuring of the district. This has clearly generated a decrease of the variety, an increase in rents and a modification of the social fabric.

Montreal and the "Quartier de l'Innovation

The QI project was launched in 2009 by the Ecole supérieure de technologie (ETS), a school of engineering, along with the McGill University. These two entities developed the vision of a high quality urban hub around several knowledge institutions, located around the Southwest district of Montreal, in the immediate environment of the ETS. This location was chosen because of its centrality with regard to the city center and because of the availability of space.

On the long term, the QI project is expected to bring together a dynamic, creative and engaged community which, through proactive collaboration with the university, is likely to attract and encourage the development of world-class innovative enterprises and academic and scientific programs tailored for local needs in approximately the same clusters that can be found in 22@. The media cluster (with the Cité du multimedia, its 70 enterprises and its 6000 knowledge workers) and the ICT Cluster (with the Cité du commerce electronique, its big companies such as IBM and CGI, and its 6000 knowledge workers) were the first clusters to be set up, propelled originally by an aggressive policy based on tax credits. At the same time, the former industrial plants of Northern Telecom, Nordelec, in the south of the district have become an important incubator for small and medium size businesses (about 235 SMBs

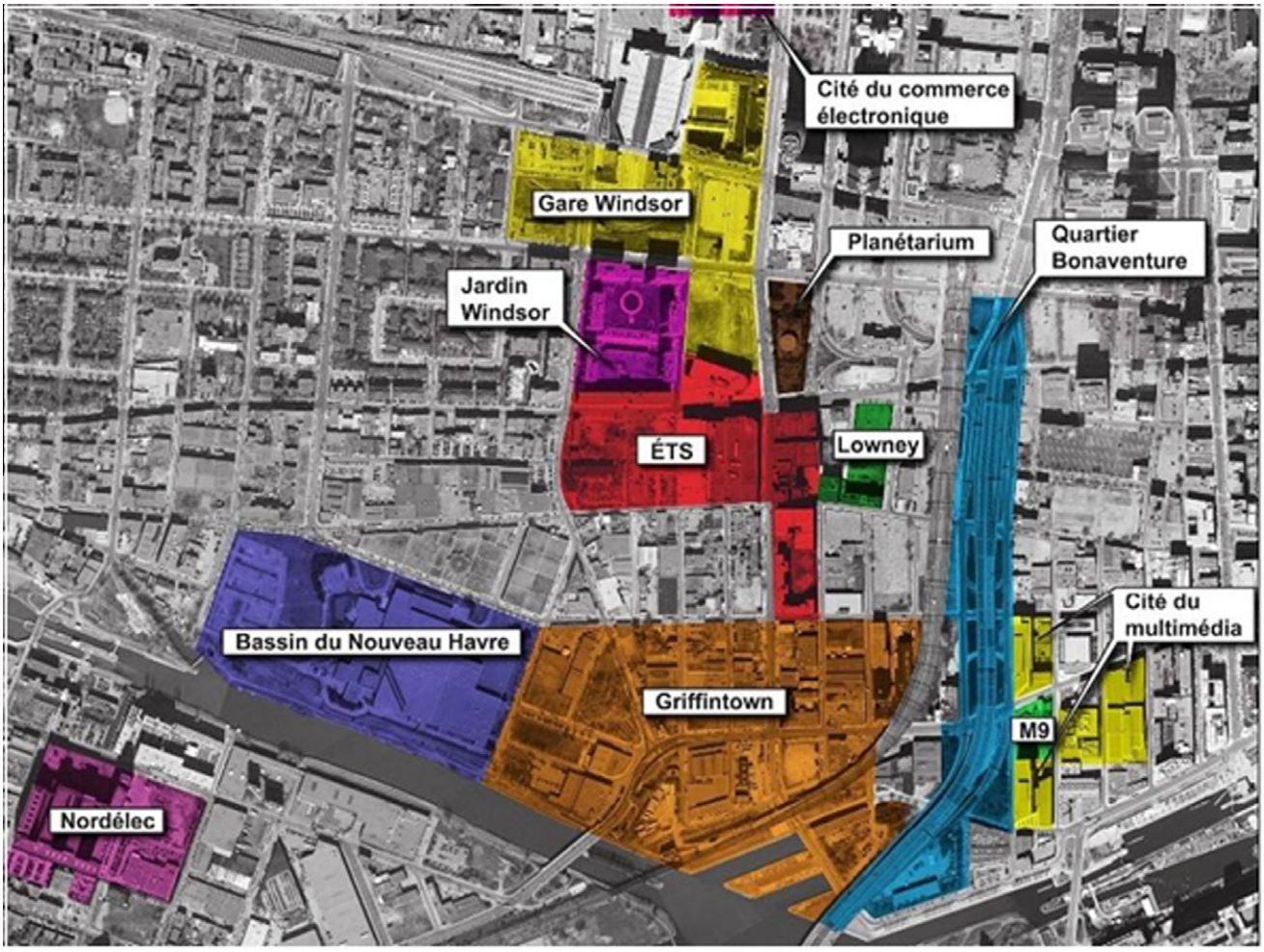

Fig. A1. Quartier de l'innovation in Montreal. Source: http://www.etsmtl.ca.

accounting for 1500 knowledge workers). As a consequence, the QI district now exhibits one of the most important concentrations of talents in Canada in the ICT and in the multimedia sector.

The QI upperground

The *upperground* of QI is to a large extent comparable to the u*pperground* of 22@ (nature of activities, types of companies, etc.). Montreal has somewhat of an advantage in that the industrial innovative activities are already settled in the district. The different clusters in the QI are, however, located at the periphery of the district without connections to each other. They are dispersed in "silos" which is a clear challenge for enhancing the creativity of the district. In that respect, the structures of the *middleground* of 22@, that facilitate the interactions between industrial activities, could be a useful model of reference.

The QI middleground

In the QI Montreal district, the *middleground* is more or less represented by the academic institutions that initially promoted the project (ETS and McGill). While, in 22@, most of the impulse came from the municipality, in the case of Montreal the project is driven by these academic institutions. Their aim is to develop, through technology projects, a creative ecosystem highly capable of attracting talent and investments. The challenge is to stimulate the collectives and communities of a rich *middleground* that could integrate the living environment, university and college institutions, as well as new economy workers. In order to do so, authorities have planned to develop the INGO project, an innovation hub housed in a LEED building located in the heart of the ETS campus, in which premises will be rented as industrial lofts. At this stage, the development of the QI *middleground* will probably require many other collective endeavors, in particular issued from "bottom-up" initiatives. A structure such as Barcelona Activa which plays a major role in 22@ could be a useful reference for QI.

The QI underground

The *underground* of QI is also, to a large extent, comparable to that of 22@. Most of the creative talents working in companies located in the district do not live in the QI area. The creative class prefers to reside in the trendy areas of the "Mile End" or the "Plateau". By contrast, most of the inhabitants of the district do not work in the high-tech companies of QI. More efforts to prompt the emergence

of a truly creative *underground* interconnected to the other layers of the city are yet to be done.

Facing these multiple challenges, promoters of QI aim to build an "ecosystem" that is conducive to innovation (residential, commercial, social, recreational, cultural, green spaces, sustainable development, including a modern mass transit system, etc.). Such a situation explains the key interest of the promoters of QI to benefit from and to derive the lessons learnt from the strengths and weaknesses of 22@. In the near future, they may usefully apply the places/spaces/projects/events typology that has been exposed in the case of 22@ to derive policy measures destined to build a rich *middleground,* which is, according to what has been demonstrated in this contribution, a key in the development of a creative ecosystem.

Discussion

The *upperground* and the *underground* both rely on entangled platforms of knowledge embedded in the city's fertile soil in order to connect to each other. These platforms are often monitored by governmental, professional or amateur associations, non-profit organizations, or other collective forms, which offer places and spaces both to the *upperground* and to the *underground*, and which regularly propose new projects and events for the different actors of creativity to get together and intertwine. These communities of the *middleground* play a major role in fostering the dynamics of creativity. On one hand, they enable firms from the *upperground* to dig in the *underground* through a top-down process. On the other hand, they enable the individual talents of the *underground* to blossom in the *upperground* through a bottom-up process. As such, these communities of the *middleground* are not only sources of inspiration for both the *upperground* and the *underground*, they also are repositories of cognitive material from which existing knowledge can be internalized and/or externalized.

The members of these communities are both producers and consumers of the different goods and services available in their local environment. They often work for different (and sometimes rival) firms, and therefore contribute to the production of commercially-oriented creative artifacts. As citizens, they commonly attend concerts and events from the local scene, and are sometimes involved in local creative projects in music, graphic arts, performing arts, and short movies for instance. In many ways, the members of these communities benefit from their entrenchment in the city to foster the emergence of their creative ideas (whether the latter are used for commercial or non-commercial purposes). By contrast, the city nourishes itself from the activity of these individuals to develop and expand its creative offer. This constant interaction between the demand and supply of creative goods and services, which is enabled by the *middleground* communities, is at the basis of the city's creative dynamism.

This representation of the creative city may lead to a better appreciation of the relevant policies that could be implemented in UNESCO's Creative Cities Network to stimulate and favor the quality of creative forces both locally and globally. A creative city should be seen as a delicate, subtle and fragile ecology of knowledge, which does not mechanically develop, as illustrated in the case of the 22@ and QI districts. Of course, classical policy measures,

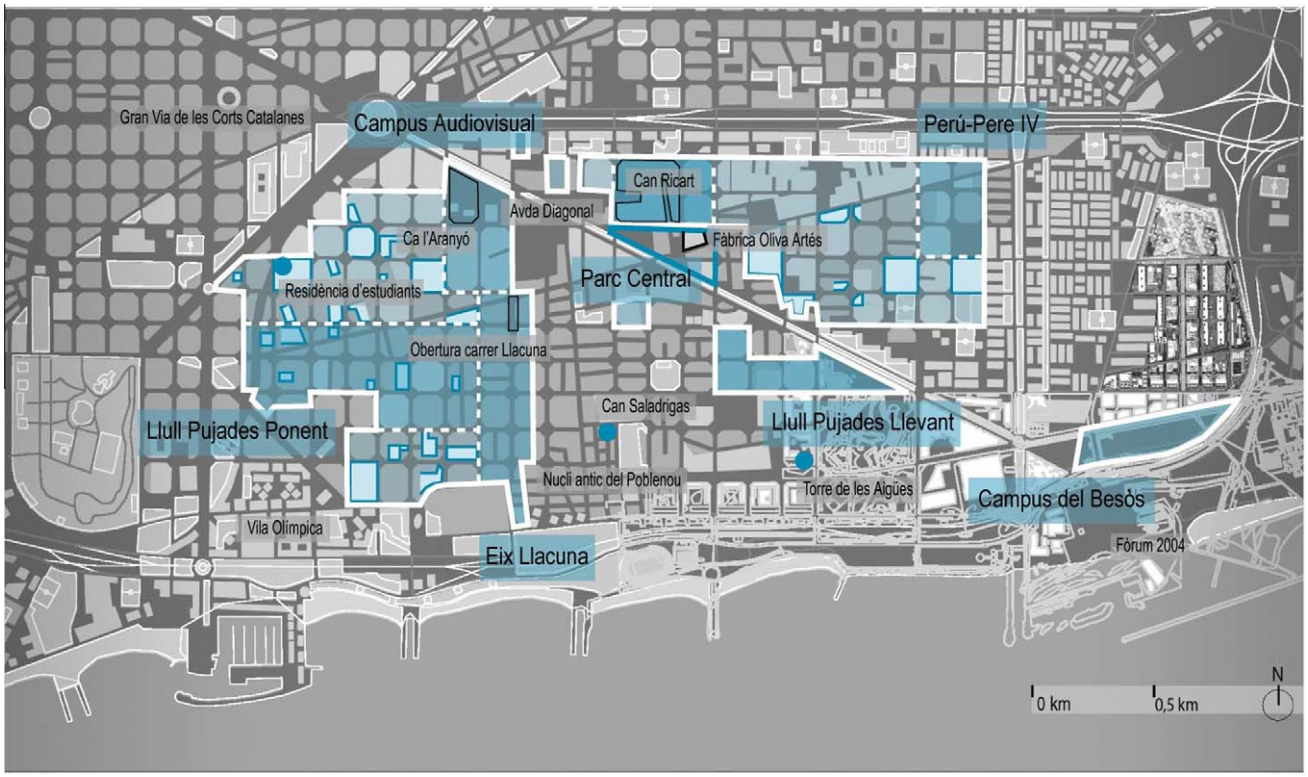

Fig. A2. 22@ in Barcelona. Source: http://www.territori.scot.cat.

such as attracting leading companies to play the role of anchor firms (thus reinforcing the *upperground*) or attracting talent of the so-called creative class (thus reinforcing the *underground*), are positive (and probably complementary) ways to increase the creative potential of the city and bring economic growth and wealth. However, this analysis reveals the key importance of nurturing, reinforcing and facilitating the development of the intermediate level, the *middleground*, which articulates and links the individuals of the *underground* to the creative firms or institutions of the *upperground*.

The main difficulty with this approach is that the development of a rich *middleground* is not reducible to some significant investments in local amenities such as schools, museums, or performance halls. If such investments are necessary, they are not always sufficient. As a critical layer of the creative city where codebooks, standards, norms, new rules of the games, potential for creating unexpected connections, and other quasi-public platforms of knowledge are elaborated, the *middleground* calls for a specific attention from policy makers and should be constructed thoughtfully to enable close interactions among the different units embedded in the cluster. What is needed are places and spaces that equip the city with a specific apparatus from which new ideas may arise. This can partly be achieved through the implementation of different projects and events, which open the local creativity to the global scene. While this will not always ensure success, it will certainly contribute to foster the creative process inside the city.

Appendix

See Figs. A1 and A2.

References

Amin, A. (2002). Spatialities of globalisation. *Environment and Planning A, 34*, 385–399.

Amin, A., & Thrift, N. (2002). *Cities: Reimagining the Urban*. Cambridge: Polity Press.

Amin, A., & Cohendet, P. (2004). *Architectures of Knowledge*. Oxford: Oxford University Press.

Amin, A., & Roberts, J. (2008). *Community, Economic Creativity and Organization*. Oxford: Oxford University Press.

Anderson, G. (1994). Industry clustering for economic development. *Economic Development Review, 12*, 26–32.

Asheim, B. T., & Gertler, M. (2005). The Geography of Innovation: Regional Innovation Systems. In J. Fagerberg, D. Mowery, & R. Nelson (Eds.), *The Oxford Handbook of Innovation* (pp. 291–317). Oxford: Oxford University Press.

Athreye, S. (2001). *Agglomeration and Growth: A Study of the Cambridge Hi-Tech Cluster*, Stanford Institute of Economic Policy Research.

Audretsch, D. B., & Feldman, M. P. (1996). R&D spillovers and the geography of innovation and production. *American Economic Review, 86*, 630–640.

Bathelt, H. (2005). Cluster relations in the media industry: Exploring the 'Distanced Neighbour' paradox in leipzig. *Regional Studies, 39*, 105–127.

Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography, 28*, 31–56.

Breschi, S., & Lissoni, F. (2001). Knowledge spillovers and local innovation systems: A critical survey. *Industrial and Corporate Change, 10*, 975–1005.

Caves, R. (2000). *Creative Industries: Contracts Between Art and Commerce*. Cambridge and London: Harvard University Press.

Chiesa, V., Chiaroni, D. (2005). *Industrial Clusters in Biotechnology: Driving Forces, Development Processes and Management Practices*, Imperial College Press.

Cohendet, P., & Simon, L. (2007). Playing across the playground: Paradoxes of knowledge creation in the video game industry. *Journal of Organizational Behavior, 28*, 587–605.

Crevoisier, O. (2004). The innovative milieus approach: Toward a territorialized understanding of the economy? *Economic Geography, 80*, 367–379.

Currid, E. (2007). *The Warhol Economy: How Fashion Art and Music Drive New York City*. New York: Princeton University Press.

Feldman, M. P. (2003). The locational dynamics of the US biotech industry: Knowledge externalities and the anchor hypothesis. *Industry and Innovation, 10*, 311–329.

Florida, R. (2002). *The Rise of the Creative Class*. New York: Basic Books.

Florida, R. (2008). *Who's Your City? How the Creative Economy is Making Where to Live the Most Important Decision of Your Life*. New York: Basic Books.

Freeman, C. (1987). *Technology Policy and Economic Performance: Lessons from Japan*. London: Pinter.

Gertler, M. (2003). The undefinable tacitness of being (there): Tacit knowledge and the economic geography of context. *Journal of Economic Geography, 3*, 75–99.

Grabher, G. (2001). Ecologies of creativity: The village, the group and the heterarchic organization of the British advertising industry. *Environment and Planning A, 33*, 351–374.

Hall, P. (1998). *Cities in Civilization*. Oxford: Blackwell.

Hartley, J. (2005). *Creative Industries*. Oxford: Blackwell.

Howkins, J. (2001). *The Creative Economy*. London: Penguin.

Jacobs, J. (1969). *The Economy of Cities*. New York: Random House.

Langlois, G., Pawlak, E. (2010), 22@Barcelona: Une expérience à réinventer pour le Quartier de l'Innovation de Montreal, *Report for the ETS Enginnering School of Montreal*, Montreal.

Lloyd, R. (2004). *Neo-Bohemia – Art and Commerce in the Postindustrial City*. New York: Routledge Press.

Lundvall, B. A. (1992). *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter.

Markusen, A. (2006). Urban development and the politics of a creative class: evidence from a study of artists. *Environment and Planning A, 38*, 1921–1940.

Marshall, A. (1961). *Principles of Economics*. London: Macmillan.

Maskell, P. (2001). Towards a knowledge-based theory of the geographical cluster. *Industrial and Corporate Change, 10*, 921–943.

Maskell, P., Bathelt, H., & Malmberg, A. (2006). Building global knowledge pipelines: The role of temporary clusters. *European Planning Studies, 14*, 997–1013.

Molotch, H. (2002). Place in product. *International Journal of Urban and Regional Research, 26*, 665–688.

Mommas, H. (2004). Cultural clusters and the post-industrial city: Towards the remapping of urban cultural policy. *Urban Studies, 41*, 507–532.

Panne, G. (2004). Agglomeration externalities: Marshall vs. Jacobs. *Journal of Evolutionary Economics, 14*, 593–604.

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly, 14*, 15–34.

Rantisi, N. M., Leslie, D., & Chistopherson, S. (2006). Placing the creative economy: Scale, politics and the material. *Environment and Planning A, 38*, 1789–1797.

Rychen, F., & Zimmermann, J. B. (2008). Clusters in the global knowledge-based economy: Knowledge gatekeepers and temporary proximity. *Regional Studies, 42*, 767–776.

Saxenian, A. L. (1994). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge: Harvard University Press.

Storper, M., & Venables, A. J. (2004). Buzz: Face-to-face contact and the urban economy. *Journal of Economic Geography, 4*, 351–370.

Watson, A., Hoyler, M., & Mager, C. (2009). Spaces and networks of musical creativity in the city. *Geography Compass, 3*, 856–878.

Zukin, S. (1995). *The Cultures of Cities*. Oxford: Blackwell.