

A Smart City- Tensions Between Space of Flows and Space of Places

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Abstract: Contemporary urbanized populations are linked in many ways, both within their communities and across national and international borders. This research examines concepts associated with the notion of the informational city and is concerned with the tensions between knowledge flows in traditional placed-based cities and globalised flows of information.

The organisations in the city use of a variety of mechanisms for production, consumption, communicating with other organisations and investing money across the globe. Some theorists argue that the city is a place with clear boundary with specific elements for information and knowledge exchange, such as universities, libraries, parks, cafés, etc, others argue that a contemporary city is made up of networks and their flows and scattered beyond its physical boundary. Some see the need for specific places where information is exchanged informally and others focus on the impact of globalization and the ability to attract expertise to local hubs and make it available in other locations.

These two concepts are investigated by taking the essential characteristics of a range of theorists, Castells and Space of flows, Sassen and the Globalised City, Ergazakis and Knowledge Based urban design (KBUD) and Fisher and Information Grounds - to understand what really the organizations in the context of the informational cities. I hope to argue that an examination of a city and its development must facilitates the co-existence of two contradictory concepts, the space of flows (Networks) and the space of places (information grounds)

Key words: Network Society, Globalisation, space of flows, information grounds, space of places

I. INTRODUCTION

There is considerable interest in the concept of the informational city, what it is, how it can be identified and how institutions and organisations within it function to support the notion of the Knowledge.

Today, we have many terms for “Informational cities” such as “Ubiquitous city” (Hwang 2009) referring to the ICT Infrastructure, “Knowledge City” (Carillo 2006) referring to the scientific and technical knowledge, “Creative city” (Florida, 2005) referring to the creative professions of the city, “Cognitive City” (Tusnovics, 2007) referring to the creativity and the knowledge. There are several complementary perspectives from which to consider the concept, such as regional intellectual Capital (Bounfour and Edvinsson, 2000), urban history (Kunstler, 2004) and also some researchers have checklist of desired characteristics (Ergazakis et al, 2004).

It is clear, that there are different approaches and suggestions to define the term “Knowledge City”. E.g. even Mumbai or Jakarta can be regarded as knowledge cities, if the key to the informational city is, “human capital” (Dornstadler et el 2011). As illustrated, all of these terms manifest how to place and distinguish the contemporary city in the global economy.

A number of theorists have used the concept of the knowledge city in their work to lay the theoretical foundation for dealing informational cities. These include Castells, Sassen and KBUD. On the other hand, scholars such as Fisher are interested in the very local and her concept of information grounds is also important in any consideration of the knowledge city. The purpose of this study is to explore two potentially contradictory or at least competing concepts to better understand the overall concept of the Knowledge City in terms of the information flows. These concepts are the “space of flows” and the “information ground”. These concepts and their operation will be investigated through an exploration of the workings of different theoretical perspectives.

This book will cover the following areas: introduction to the protest as a site for investigation; a discussion of the four conceptual lenses used to analyze and comment on the knowledge city.

The city in terms of the modern society will be discussed further in next section.

1. Background of the City of the Network Society - The Process

Castells is known as a major theorist on the knowledge city. He coined the phrase “information city” in 1989. He argued that the city is organized around networks and largely made up of flows. These flows include flows of capital, flows of information, flows of technology, flows of organizational interactions, flows of images, sounds and symbols (Castells 1996, p. 412). For him, these flows represent the processes that create our life, at the social, cultural, political and economic levels; they create a new type of society, which he calls the network society, which arises from what he calls “informational capitalism”. Fundamental to the network society is the “Space of flows”, which is the material organisation of time-sharing social practices that work through flows. By flows he understands purposeful, repetitive, programmable sequences of exchange and

interaction between physically disjointed positions held by social actors. (p.412)

As Castells (2010) explains “Network society is global society because networks have no boundaries” (p.2737). Since the network does not have a specific boundary, one is unable to point to a particular place within the network as a city. Therefore, he explains that the city is a network, and it is a “process” not a “place”. Because the functions of the networks are global in scale and can connect/disconnect different places at a given time, so this is not just one place but a network with many “nodes”.

Castells (2001) firstly named such nodes “global hubs” because they are specific areas throughout the entire planet, which links up with equivalent areas in any given location. As a result, the Informational cities are not bounded by administrative borders but span entire regions Castells later uses the term “Informational Regions” (Castells, 2002) to explain such collective places because one or more global hubs can link to another. For example, cities, such as Paris and London which are just 2 hours apart link to one another with public transportation and telecommunication networks, in such a way that at one level, there are no boundaries separating them.

Hall (2006) identifies such regions in Europe as “Mega City”. Metropolitan areas as a new kind because it is scattered throughout huge territorial expanses and functional integrated but socially differentiated. He calls this new spatial form “Metropolitan Regions” (Garreau 1991, Hall 2001, Dunham- Jones 2000). Therefore, cities are built around places and flows and their relationships (Barry Wellman 1999, William Michel 1999). In support, Friedmann (1995) also stated, “World cities are large, urbanized regions that are defined by dense patterns of interactions rather than by political-administrative boundaries” (p. 23).

However, even though all these interactions fall under the common theme “space of flows”, Castells states it is important to bear in mind that flows have both material and immaterial aspects. The “space of flows” is created by the real time interactions of distributed social actors. It is a combination of interactions and material infrastructure that makes these interactions possible. The space of flows links up electronically separate locations in an interactive network that connects activities and people in distinct geographical context.

The material and immaterial aspects of the space of flows are significant for this study, because existing side by side one finds the “Space of Places”, that is the geographic location and the “Space of flows”, the networks through IT and telecommunications such as facebook, Internet, Email, Skype, Google+, Online forums, and media networks such as TV, Radio etc.

Therefore, one can understand these two aspects by considering the infrastructure in cities. Firstly, cities have infrastructure for geographical space/physical space (e.g. water, energy, transport) in order to companies to manage and

control their global operations such as airports, harbours, and transport interchanges. (Kokot 2006a and 2006b, Graham 2001) and secondly, infrastructure for digital space (e.g. telecommunication networks or space of information, money and power streams).

Some scholars concerned with Knowledge-Based Urban Development (KBUD) have focused on these infrastructure elements, where space and place for knowledge production is key to socio-spatial development. Furthermore, “Knowledge Based Urban Design (KBUD) is a planning approach to attract and retain knowledge workers and knowledge intensive industries and also nurturing of knowledge cities” (Kunzmann, 2009, p 47). These types of developments are subject to physical place and focus on the ability of citizens to use physical spaces to use those spaces to share, update, renew and create new knowledge (Ergazakis, Metaxiots and Psarrs, 2004) and also urban planning in the context of competitive city strategies is to facilitate the redevelopment of the built environment and engage in place marketing ‘city branding’ (Cowan/Bounce, 2006:429).

Networks and its Impacts to change of Social Structure, According to Castells, there is a link between networking and the transformation of relationships of experience. The experience is historically organized around the family, sexuality and personality to change and transform as new social relationships to production increases the flexibility to work (Castells, 2000). As we know, networks are very old forms of social organisation. Transportation and telephone networks existed for a long time but the networks formed through contemporary technologies “open up unlimited horizons of creativity and communication, inviting us to the exploration of new domains of experience, from our inner selves to the outer universe, challenging our societies to engage in a process of structural change.(p1)” Furthermore, Castells claims that networks of information and global communication change the lifestyle of the people as they become part of different networks. Therefore, individuals can have multiple identities depending on the interactions with an environment of different networks.

Castells notes that ICTs can link people together in networks, bringing them to a range of new experiences and by the same token, can marginalize people, cutting them off from information and experiences.

2. City as a physical place – The Place of experience

However, we still meet people day today to exchange information and knowledge. Thus, physical places in the real world are still important. William Michel (1999) put forward the claim that the city as a place does not disappear in the virtual networks, but they are transformed by the interface between electronic communication and physical interaction by the combination of networks and places. Unlike virtual environments, physical interactions need a specific place.

Information is still created, shared, distributed, and transformed into knowledge in these physical spaces.

Therefore, we are not able to ignore all these interactions taking place in the geographical place. Fisher brings a new concept called “Information Grounds” to the table where she claims the meeting points such as cafes, shops, gyms, bus stops, saloons, parks etc. are equally important to create, share, distribute and transform knowledge. In terms of the knowledge city, they are important because they occur across all levels of all the societies in daily life. As a result, global cities are always “Information rich localities” (Flint & Taylor, 2007, p.270).

People share their personal experience and gain new social experience with face to face without any kind of technology. It is a physical place where people meet for a different purpose but in doing so, also exchange information.

Fisher’s Information grounds are temporary settings where social interaction is primary and information flow is a by-product (People gather primarily for instrumental purpose rather info sharing) but this has a significant effect on information flow where it can be formal or informal and takes many directions, Simply, this is a meeting point of different social groups & roles to share each other’s experiences. Their casual interactions and conversations take place in different social spaces.

According to the Fisher, these information grounds can be understood using fifteen categorical factors grouped under three headings: People-related, Place-related, and Information-related.

People Related	Place Related	Information related
Membership size	Focal Factors	Significance
Membership Type	Conviviality	Frequency Discussed
Familiarity	Creature Comfort	How created/Shared
Actor Roles and social Types	Location and Performance	Topics
Motivation	Privacy	
	Ambient Noise	

she suggests that space related factors may be the single influence on member loyalty and satisfaction, surpassing even the quality of the information acquired as central evaluation point (Fisher et al 2006). Oldenburg claims neither the office nor the home but other places (“Third place”) such as café’s bus halts, saloons etc people meet for other purposes play a vital role in information sharing. Therefore, the Aragalaya has grounds to theorize that it might be a good example of an information ground that affects the relationship of the experience.

But meeting people at these “information grounds” and start talking and socializing and from which make them knowledgeable (Fisher) whereas Oldenburg claims neither the office nor the home but other places (“Third place”) such as café’s bus halts, saloons etc people meet for other purposes takes vital role in information flows. Knowledge leads to innovation. Innovation leads to the productivity. Productivity increases the surplus production, and it is directly affect the

mode of production. The information flows in this “place” to be analyze further in future.

3. City as a place of network organisations

From a different perspective, Saskia Sassen (2001) is concerned with the development of cities in a globalized world in the context of trade and commerce. She states that “World Cities” have always existed, and status of a city in the globalized world would be better expressed via “Global City” (p.XIX). She argues that spatial dispersal and global integration has created a new strategic role for major cities, one that goes beyond the historical importance of cities as centers of trade and commerce.

First, as highly concentrated command points in the organization of the world economy; second, as key locations for finance and for specialized service firms; third, as sites of production, including the production of innovation in these leading industries; and Fourth, as markets for the products and innovations produced” Sassen” (1991 :3-4)

She also claims that companies acting worldwide have their main headquarters in a global city and the capital is transferred and flows in and between cities. According to her, to register the information streams between cities, one could count all connections of companies from that city to its respective branches as well as to steady suppliers and customers as an indicator for economic informational connectivity. This could be seen to mirror Castells point about networks, although the connectivity is at the organisational level.

The informational economy opens up extraordinary avenues for production but according to Saskia Sassen, that there are certain things that actually cannot be replicated fully with only electronic space:

“The mix of firms, talents and expertise from a broad range of specialized fields makes a certain type of urban environment function as an information center. Being in a city becomes synonymous with being in an extremely intense and dense information loop. This is a type of information loop that as of now still cannot be replicated fully in electronic space and has one of its value-added features the fact of unforeseen and unplanned mixes of information, expertise and talent, which can produce a higher order of information” (Sassen, 2001, p.XX)

Saskia Sassen also explains that global cities are production sites for companies in the information industry. The companies have branches all over the world and act as a single entity and by product of the “globalization”.

The knowledge generation and technology capacity are the key tools for competition between firms, organisations of all kinds and ultimately countries (Freeman, 1982; Dosi et al, 1988b). Either capitalist or statism (Bell 1976 called it collectivism), the key feature would be determining the uses of surplus. The surplus depends on the productivity increase.

The productivity can be increased using the innovation and it lies in the technology of knowledge generation, As in Castell's words:

"In the agrarian mode of development, the source of increasing surplus results from quantitative increases of labor and natural resources (Particularly land) in the production process, as well as from the natural endowment of these resources. In the industrial mode of development, the main source of productivity lies in the introduction of new energy sources, and in the ability to decentralize the use of energy throughout the production and circulation process. In the view, informational mode of development the source of productivity lies in the technology of knowledge generation, information processing and symbol communication." Castelles (P7)

On the other hand, Saskia Sassen (1991), states that major corporate centers provide the human resources and facilities necessary to manage and increasingly complex global financial networks which represent the capitalist mode of production. Therefore, the "globalization" of financial markets is the backbone of the new global economy. It is global because the production and distribution is organized on a global scale linked with information telecommunication networks. As we already know, this is not the same as the service economy it is in Castells words, called the informational economy.

Some researchers and urban planners intend to increase the knowledge among community and develop creative regions. During the past decade, KBUD has been taken a key role to boost knowledge production for globally competitive urban economies. These researchers main focus is infrastructure and social wellbeing. Making space and place for knowledge production is a key to the socio-spatial development (Yigitcanlar, 2008). KBUD In terms of the knowledge production, Industries always seek knowledge of the people when establishing branches when expanding their business.

Infrastructure. It is one of the key feature's that stand out in the knowledge cities too. According to Ergazakis, Metaxiots and Psarrs (2004), the knowledge society promotes such development.

"A knowledge city is a city that aims at the Knowledge Based Development, By encouraging the continuous creation, sharing, evaluation, renewal and update of the knowledge. This can be achieved through the continuous interactions between the citizens themselves at the same time between them and the other cities' citizens. The cities knowledge sharing culture as well as the cities appropriate design, IT networks and infrastructures support these interactions" (p.7)

Creating infrastructure to establish new business centers and encourage professionalism of labour and high-end recreation and consumption, reorient the cities to the real and imagined interests of global mobile investors (Sassen 1994,

2001; Loftman/ Nevin 2003). This type of "modal" could be very similar to the companies invest abroad and organize different organisation functions in different locations which are integrated within a global strategy.

There are certain things such as talent, skills, and expertise could not be replicated fully with electronic space.

According to Saskia Sassen, the informational economy opens up extraordinary avenues for Production:

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4. City and its relationship to the Networked Production and Consumption

This is different from the "Mode of Production" that the Marx used to describe in the past, where it was a means of economic production used by a given society such as factories, machines, raw materials and labor force at a particular place and a time. "This type of flexible production today identified as the "Toyotism" and it is opposed to "Fordism" in the global economy" (Nonaka 1990, Coriat 1990). As a result, New York city can be observed that the central services have been shifted away from Manhattan and into the suburban regions of Connecticut and New Jersey (Hall, 1997a, p.319).

This kind of production in different geographical space is highly related to the processing of the information and coordination of the supply chain activities through the telecommunication networks. Castells called this new mode of development as "informational". According to Castells:

"Each mode of development is also structurally determined performance principle around which technological processes are organized: industrialism is oriented towards economic growth that is toward maximizing output; informationalism is oriented towards technological development that is toward the accumulation of knowledge and towards higher level of complexity in information processing. While higher level of knowledge may normally result in higher level of output per unit of input, it is the pursuit of knowledge and information that characterizes the technological production function under informationalism" (p7)

It allows for decentralization of its operations, coordination and focusing of control with various branches in the world. According to Castells, these branches located in

different places and their components are place dependent but organisational logic is place-less. This is similar to Castells claim that the organizations in the information age, shift from vertical bureaucracies to the horizontal corporation” (Castells 2000, p.176).

today’s companies that have multifunctional decision-making centers and production places as different nodes in its own networks rather just located in one particular place. These types of organisations are strategically planned network of self-programmed, self-directed units based on decentralization, participation, and coordination (Castells, p177-178). Freeman (1982) also states the product of new information technology industries are information processing devices or information processing itself.

The companies should adhere to the surplus production, and this is determined by the productivity of a particular process of production. This type of “mode of development” has changed from industrialism to the informationalism over the last century with the transformation from pre-industrialism to industrialism and then post-industrialism (informationalism) (Torain XX, Bell 1976). This is the process of production that is always based on some level of knowledge and in the processing of information. According to Piore and Sabel (1984:17), the way of production has been changed from “mass production” to “flexible production” or as from “Fordism” to “Post-Fordism”. In support Ducker (1988), this is the organisational model to adapt to the conditions of unpredictability ushered in by rapid economic and technological change. This is the reason why the shift in mode of production at that time-agrarian feudal space dismantled eventually by industrial capitalism which in turn is replaced by late capitalism (Merrifield, 2006:107).

In this case, workers are the owners of the organization such as in the “information capitalism”. According to Castell (1996, p 18), there is a new techno-economic system in contemporary cities, that can be adequately characterized by "informational capitalism" which is directly linked to “informational mode of development” in information age, where he states that the technology not only changes and shape the “mode of the production” but also the relationships of the capital and labor in the capitalist environment. He further states that Information technology revolution allowed the implementation of a fundamental process of restructuring of the capitalist “mode of production” towards the end of the twentieth century.

According to Castells, in this type of environment, the capital in global networks ends up being increased or decreased in the place of origin or entirely different places. It is also the capital and labor that has organized around the networked enterprise could not only process the work in locally but also in globally. This needs to be investigated further in depth in the 2nd part of the research.

Actual operating unit becomes the business project, enacted by a network rather than single company or group of companies and information is circulated through networks: the

networks between companies, personal networks, and computer networks. A good example of this kind of organisation is CISCO systems. It is a global network business model and based on the 3 core assumptions. CISCO systems (1999:1-2):

“The relationships a company maintains with its key constituencies can be as much of a competitive differentiator as its core products or services; the manner in which a company shares information and systems is a critical element in the strength of its relationships; being connected is no longer adequate; business relationships and communications that support them must exist in a “networked” fabric. The global networked business model opens the corporate information infrastructure to all key constituencies, leveraging the network for competitive advantage.”

In terms of the production and consumption of various capital, city is not only an “information ground” but also a “space of flows” and has two different contradictory roles linked to one another. Castells claimed that, the “Space of flows” change the character of the city compared to space of place. Castells (1993/2006):

“The new spatial logic, characteristic of the informational city, is determined by the preeminence of the space of flows over the space of places. by space of flows I refer to the system of exchange of information, capital, and power that structures the basic processes of societies, economies and states between different localities, regardless of localization. (p 136)”

But it is also important to note that concept such as (KBUD) and skills base could be the one that joins these to contradictory concepts (place based and placeless) together. Which dominates what may depend on the extra factors that support these interactions.

5. City and Its Relationship to the Power

The concepts in relationship to production/consumption in knowledge cities in regard to the network society has various power centers.

The power of decision making was in the center of the hierarchy of organisations in the past. According to Castells (1991), information and telecommunication networks have had a direct impact on the relationship between social structure and power since the late 20th century. Therefore, he argues, the organisations He also claims that in the network society, power resides in the global networks such as Skype email, Media Networks, Facebook, Google+, Online chat rooms, media networks etc. At the same time, in terms of the power of a city, Castells (1991) states that “due to information networks and its flows of information in different directions, it can by pass the nation state and has become a network state”.

However, Saskia Sassen (2012) distinguishes the technical capacities of such digital networks of doing business across borders from more complex socio-digital formations.

She emphasize that intervening mechanisms to such interactive domains have little to do with the technology. According to her (1991), telecommunication networks enabled organisations to decentralized their operations across boarders need mix of firms, talent, skill and expertise that can not replicated fully with digital space.

The built environment and Infrastructure have been important feature for quite a long time representing nations power (E.g. Roman Empire). It is something that heavily endowed with social meaning (Harvey, 2003). According to Knox & Paul L (2010), the whole complex of offices and stores in entire downtown areas can be interpreted as symbolic of the power of the ‘central district elite’ in relation to the rest of the city.

Furthermore, to the location factors, the city must be an attractive place for the knowledge workers with different urban amenities (Loyd and Clark, 2001; Shapiro, 2006, Glaeser et al., 2001). The creative class within the labour force has particular preferences for amenities such as high-quality housing, work empowerment and specialized consumption (Florida, 2002a, 2002b, 2005a, and 2005b).

In terms of a city, Social Leisure, entertainment and culture aspects of the city are connected to economic competitiveness (Beriatos and Gospodini, 2004; Gospodini, 2006; Hall 2000, Hannigan, 2003) with more livable and pleasant cities better equipped to attract high value knowledge workers (Carlino and Saiz, 2008; Clark, 2004; Florida and Tinagli, 2004). In terms of community, it is diversified but the guru’s capacity for writing books, contribution from educated monks from various universities and knowledge and expertise of committee members, some devotees from broad range of specialized fields are exceptional. Saskia Sassen (2001, pXX) states that this is something unforeseen, unplanned and it is a mix of information, expertise and talent that produces higher order information and cannot be replicated fully in an electronic space.

According to Peterson et al, (1996), a typical customer of an informational city’s leisure facilities is the “cultural omnivore”. In support Hall (1997) states,

“It is a mark of global cities to attract many foreign visitors. Here the following cultural institutions play a role: museums, galleries, libraries, opera houses, music halls, theaters and the number of “events” in any given week. Casinos, too, draw visitors. Furthermore, large sporting events with super regional importance are significant”

The city is also powerful due to the fact that it’s diverse range of transnational members and their member loyalty for information to flow among each face to face. As a consequence, Fisher, Landry and Naumer concluded that Physical, Place-related factors play “an extremely important role in the effectiveness of an information ground,” They suggest that space related factors may be the single influence on member loyalty and satisfaction, surpassing even the

quality of the information acquired as central evaluation point (Fisher et al 2006).

Therefore, in terms of a city on the basis of production and experience, there are not only many ways of gaining power such as Technology, Knowledge, Built environments, Attract foreign visitors, Member Loyalty, Military, Research, human capital etc etc but also most importantly the different spaces, “space of place” and “space of flows”. But all these are based on how the powers impose the will of some subjects upon others in terms of the capitalist environment.

II. CONCLUSION, IMPLICATION AND FURTHER RESEARCH

The paper examines concepts associated with the notion of the knowledge city. The article looks through the digital cities and its work cultures in terms of production, consumption, experience, and the power. Some theorists argue space of flows dominates over space of places while others space of places is important. This paper takes numbers of theoretical approach to investigate the significance of these two spaces.

These are the network organisations of the kind described by Castells (2000) in his modern urbanization theories. The communication was possible using different means and central authority maintained by the written word and local delegation.

Understanding the Informational city means understanding the subjective worlds how people make sense of their own world and their culture. This is something created by human beings’ subjective encounters with the world in their own terms.

People socially creates different places according to their needs and demands. In a city, everything is connected to everything else; cause and effect are often difficult to sort out. This makes difficult to find the right balance between these two spaces.

This shows tensions between knowledge flows in traditional placed-based working places and globalized flows of information to give insights into perceptions and strategies of local actors and their information flows. The further research will shed light on how significant is to find the right balance between the space of flows and space of places. To conclude, the organisations and its development must be carefully facilitating the co-existence of two contradictory concepts, the notion of space of flows a space of places. The further research is needed to conceptualize the places that monks and devotees socially creates and investigate their connections, their causes and effects with each other.

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