Creative cities as built places of the knowledge society

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subtheme: The future of cities in the knowledge age

keywords: creative city, Triple Helix, knowledge society, city planning, science park

1. Introduction

A lot has been talked about the knowledge society and the impact of knowledge on the structure of a society 's economy. But a society is always located somehow – it does not exist in a vacuum. Are there specific places for the knowledge society? And what effects these places have on the economic and social development of the society? I argue that the so-called 'creative cities' that increasingly emerge in contemporary Western societies are built places of the knowledge society. My paper presents findings of my empirical research which I conducted from 2007-2009 in the cities of Dublin (Ireland) and Gothenburg (Sweden). I studied how planning authorities programmatically integrated the concept of creativity in local city development strategies and what underlying concepts of society that implied. The empirical research showed that the Triple Helix concept serves as tool to reorganize the city and its social and economic structure. Thus, the concept is used as a means to meet the underlying objective to assure the cities ' character as places of the knowledge society.

Using the examples of *Lindholmen Science Park* in Gothenburg and *The Digital Hub* in Dublin, I show that these technology parks, using a specific understanding of creativity and representing spaces for knowledge-intensive industries, are constitutive elements for cities aiming at becoming a 'creative city'. Both Gothenburg and Dublin can therefore be described as paradigmatic cities of the knowledge society.

2. City planning in the 21st century: creativity and its effects

What is a city? And what is the relationship between a society and its cities? I connect to the long tradition of sociological inquiries on cities by focussing on present developments in European cities. Recent city planning and urban sociology widely discuss the emergence of what is called the 'creative city' (cf. Florida 2005; Landry 2000). So far, studies have focussed mostly either on the impact of cultural developments on cities (cf. e.g. Jayne 2004; Liep 2001; Montgomery 2004; Scott 2000) or on political recommendations of how to transform cities towards 'creative cities' (cf. e.g. Bianchini and Landry 1994; Carta 2007; Florida 2005; Landry 2006). What's missing are studies analyzing the concrete planning approaches that are used in cities which integrate the 'creative city' concept as programmatic element in their city development plans. Additionally, this new form of planning and transforming cities is hardly put in context with greater structural changes of society.

In order to fill in these research gaps, I studied Dublin and Gothenburg. One of the cities ' corresponding characteristic is that the respective planning authorities work with the concept of creativity. The cities chosen either call themselves creative (as Dublin does) or use the concept as reference for their planning (Gothenburg). Additionally, both cities have a history based on industry, being not least connected to the cities' harbors. What effects – both in physical and social terms – does it have when planning authorities work with the concept of creativity? Several sub-questions then arise that comprise: the meaning of creativity, the planning concepts actually applied, the physical and social changes that occur due to the planning, the role of arts and culture, and the impact of the knowledge-intensive economy. In this paper, I focus on two aspects: the planning concepts that are in use and the impact of the knowledge-intensive economy for 'creative cities'.

3. Cities, Creativity, and the Knowledge Society

Three theoretical approaches are most relevant for my study. These include (1) the transformation of working conditions and demands, connected to that (2) the growing importance of knowledge for contemporary societies, and (3) the rise of creativity as principle for life and work. As I understand the emergence of what is called knowledge society (cf. Bell 1973; Castells 1996; Lane 1966) as sufficiently known in the context of this conference, my focus lies on presenting creativity as apparently guiding principle of Western societies and its relation to the development of contemporary cities.

Creativity: a resource for all?

Back in the 18th and 19th century, creativity seemed to be exclusively a competence of artists. It hardly had an economic dimension, nor did it affect the everyday practices of the rest of the society. In this sense, it was an elitist concept. This aesthetic dimension of creativity starts to be transformed in the middle of the 20 th century. By now, one can analytically differentiate at least four understandings of creativity: 1) In an anthropological sense, it is a person's ability to create things (cf. Popitz 2002), 2) in terms of social theory, it is a demand of society (cf. Florida 2004; Reckwitz 2007), 3) in organizational theory, it is a measurable outcome of a specific organizational setting (cf. J. Rogers Hollingworth and Ellen Jane Hollingworth 2000), and 4) in terms of action theory, it is a specific way of acting to solve problems (cf. Holtgrewe 2006; Joas 1996).

In the context of changing societies, Richard Florida plays a central role in combining knowledge and creativity. He formulated in 2002 what he called *The Rise of the Creative Class* (2004 [2002]). Taking the changes in the field of work as his starting point,[1] Florida points out that the number of people professionally using their creativity – understood as "the ability to create meaningful new forms" (Florida 2004:5) – is growing rapidly in the USA. Based on this observation, he proclaims a new economic class with growing importance in social and economic terms: the "Creative Class" (Florida 2004:8). The members are unified by the characteristics of their occupations – being paid for creating and using something new – and divided in two subgroups: the ' super-creative core' and the 'creative professionals'. The first group comprises those whose occupations are characterized by identifying and solving problems, while the latter includes those who mainly use the new solutions and products (Florida 2004:67-70).

For an urban sociologist, the question now arises: What effects do such social and economic transformations have on the physical places of the societies? Is there a specific form of planning used in order to promote the development of a society towards becoming a knowledge society? And how does this connect to creativity as guiding principle of societies?

Cities and creativity

Florida's theory is crucial for analyzing contemporary cities because he identifies certain cities as especially attractive for members of the creative class (cf. Florida 2004:7). Similar to Simmel's assumption that large cities influence the mental life of their inhabitants (Simmel 2006 [1903]), Florida assigns cities the ability to be "cauldrons of creativity" (Florida 2005:1).

The term 'creative' as a label for cities has now been applied to more and more European and North American cities. In 2000, Charles Landry published his book *Creative City: A Toolkit for Urban Innovators* (Landry 2000). Landry discusses the question why some cities were more successful in coping with changes and in developing further. He concludes that those cities use their potential creatively. In this respect, a 'creative city' is a city that is planned in a new, innovative way. The book can be regarded as the starting point for a broad discussion surrounding the 'creative city'. When Florida then published his book on the interdependence of cities and the 'creative class ' in 2005, the term finally entered both the public and academic sphere. Increasingly, cities then started to call themselves 'creative', but the term also served as an attribute applied from the outside.[2] Sociologists, registering this phenomenon, started to work with it, resulting in a growing number of publications (cf. Carta 2007; Heßler 2007; Heßler and Zimmermann 2008; Musterd 2005). All these publications capture aspects of the phenomenon, but what they hardly do is assess the following questions: What is meant by 'creativity' when it comes to a city and its planning processes, and what implications do these planning processes have on the city itself? These are central questions for my research. In the following chapter, I specify the empirical realization before turning to my findings in chapter 5.

4. Methods

In order to adequately analyze the complex phenomenon of city planning and its effects, I decided for a mix of methods. It comprises (1) qualitative interviews with city representatives, planning authorities, and members of the creative class, (2) participant observation in the selected cities, (3) analysis of planning documents, (4) photographic documentation, and (5) re-photographing of selected urban spaces by using material from photographic archives. In the following, I will describe the five methods more detailed:

(1) In both cities, I conducted qualitative interviews with both people responsible for city planning and people working in the creative industries. The interviews were guideline-oriented and conducted as expert interviews. This adds up to 17 interviews in total.

(2) Within the space of one year, I spent three months in Dublin, starting with two consecutive months and later one more. The following year, I spent two months in Gothenburg, split in two equal parts. The time in the cities was used to

1 When elaborating his concept, Florida explicitly refers to Bell (1973) and Drucker (1993) to describe the economic changes and the shift towards a knowledge-based economy (Florida 2004:67).

2 The German weekly journal *Der Spiegel* can serve as an example: In 2007, a special issue on 'creative cities', including Amsterdam, Barcelona, and Helsinki, was published which described the specific characteristics of these cities.

conduct ethnographic fieldwork. I attempted to explore the cities as much as possible as an inhabitant, using participant observation to discover important places and streets and figure out ways of moving around and using the cities. In addition, I focused on the (physical) transformation of the cities, documenting ongoing changes. The impressions were formulated in field notes.
(3) To analyse planning documents and strategy papers of the cities' planning authorities, I used archival data analysis. The documents were checked for certain important keywords and, if found, their context was analyzed. In addition, I extracted the central planning visions and strategies.
(4) To capture the physical and spatial characteristics of the cities, I took pictures of selected parts of the city during the field trips. The selection was guided by information I received from both planning documents and the interviewees and by my own experience.
(5) To better document and understand the changes the cities were undergoing, I searched for older photos and picture postcards of the cities in national and local archives. A choice was made according to those locations in Dublin and Gothenburg that are of special importance to my research and according to the year the picture was taken, with a focus on photos between the 1950s and the 1980s. In a second selection process, those pictures were chosen which showed the places which were currently transforming most. If possible, I took a picture of the same place from the same angle. The comparison of the two pictures – Douglas Harper calls it "rephotographing" (Harper 1988:62) – visually illustrates changes and persistencies.

5. Dublin and Gothenburg: paradigmatic cities of the knowledge society

Analyzing the material collected with the help of these methods, the findings are manifold. In this context, I focus on two: One is that the Triple Helix concept is used as an underlying concept for present city planning and urban transformation. More precisely, it is predominantly used for the development of technology parks. In the city of Gothenburg, the concept is explicitly used in order to transform the former dockyards, towards an urban quarter designated for mixed-use with a technology park as its heart. That implies focussing on certain parts of the knowledge-intensive economy – which can be subsumed as belonging to the creative class (Florida 2004:328). The strategies of the local planning authorities therewith aim at enhancing the quarter 's infrastructure and reputation. In Dublin, the Triple Helix concept is an implicit part of the planning strategies in selected inner-city districts. A prominent example is *The Digital Hub*, a cluster for digital media enterprises; its establishing is thought to enhance the quarter in economic and social terms.
The second finding then is that such technology parks can be understood as constitutive elements of the 'creative city'. As places of the creative class, more precise of knowledge-intensive industries, they account for a certain form of creativity: technological innovation. The emphasis is on generating economic value with the help of innovations, implying that the 'creative city' has an economic dimension. Concerning the forms of planning applied, one can say that in both cities, the Triple Helix concept can be seen as reverse side of an integrated urban regeneration approach. As traditional approaches stress the importance of the social dimension, this concept adds the economic dimension.
In the following subchapters I will describe the two findings in detail.

5.1 The Triple Helix concept as underlying planning principle for technology parks

Analyzing the two cities, the importance of the knowledge-intensive industries soon becomes obvious. Both cities come with at least one cluster that is supposed to foster these industries. But what are their characteristics? First, the focus is on industries that can be categorized as knowledge-intensive. Second, the underlying planning principle features the structure of the Triple Helix model. Both *The Digital Hub* and *Lindholmen Science Park* are planned according to that concept. In Gothenburg, this is explicitly communicated, whereas in Dublin it is implicit. In the following, I will present each case separately. The focus is on the characteristics and the role that each cluster as enterprise plays within the Triple Helix of industry, government, and academia.

Gothenburg

Lindholmen Science Park in Gothenburg was established in the mid-1990s in the process of regenerating the former dockyards. After the downfall of the shipbuilding industry due to the oil crisis in the 1970s and a general change in the industrial structure of society, the area – located close to the city center – was desolated until the mid-1980s. The idea to establish the cluster evolved when both the Chalmers University of Technology and the company Ericsson, being in need of more space, approached the city government in this regard and positive experiences from other Swedish technology clusters had spread (cf. interview GSP). It was agreed to establish *Lindholmen Science Park* as a means to "create opportunities for collaboration between companies, academia and communities." (cf. self-description on http://www.lindholmen.se/en) As the self-description indicates, there is an interest of *Lindholmen Science Park* in a specific form of cooperation. The interview with a representative of the *Science Park* then shows that it is explicitly organized according to the Triple Helix concept. It has its own facets and characteristics (e.g. the incubator is outsourced to the university), but follows the concept in general. The interviewee stresses the importance of having

adapted the Triple Helix concept in a specific way, according to the specific needs of the city and the region (cf. Interview GSP). In this case, the three parts of the helix include as academia: secondary schools, Chalmers university, and the university of Gothenburg (cf. Interview GSP); as industry: several companies, some of them being organized in the supra-organization *Business Region Gothenburg*; and as government: the city of Gothenburg and the company that is in charge of developing the harbor area, *Älvstranden Utveckling*.

Interestingly, it is a representative of the *Science Park* who refers to that concept and not the representatives of the city planning authorities. *Lindholmen Science Park* as company – as Swedish stock corporation owned by the city of Gothenburg, Chalmers university, and what is called *Business Region Gothenburg*, a pooling of companies – plays the part of coordinating the development of the area. The interviewee stresses the importance of being a "neutral part between all these organizations" (GSP, 00:07:47), as "you cannot foster development in legislative periods" (GSP, 00:16:55). Remaining to be "unpolitical" (GSP, 00:16:45) is the central feature of the organization, according to the interviewee.

As coordinator, the *Science Park* has the task to assure that "other actors can grow" (GSP, 00:08:10). Additionally, the interviewee sees its task in "developing the geographic area" (GSP, 00:04:39) – not in physical terms, but in terms of "bringing industry, academia, and society together" (GSP, 00:05:52). In this sense, it has both an economic and a social dimension. Similarly, *Lindholmen Science Park* is characterized as a "meeting point" (GSP, 00:40:57) on different levels. The interviewee formulates the resulting advantages as follows:

> "And that's how researchers can find pleasure in participating, because they can apply for relevant research to industrial partners and are confirmed in that what they do is relevant, and sometimes the industry needs certain research, then one can offer that to academia and say, look, that's what we need research on, so there is a reciprocal exchange between industry and academia." (GSP 00:07:09)

In this sense, *Lindholmen Science Park* is a catalyst for application-oriented research. In times of crises, the cooperation has an advantage as well. Exemplified through the recent economic crisis, the interviewee emphasizes additional positive effects of such cooperations: In times of crisis, the public site provides more money to develop strategies to overcome the crisis and to "build the future" (GSP, 00:22:35). Additionally, the companies can more easily delegate employees to work in research projects. Thus, more resources are available, both in financial and in social terms. As he puts it: "So, for the company *Lindholmen Science Park*, we are in the middle of a real boom" (GSP, 00:22:39) – despite the then ongoing economic crisis.

As mentioned above, the technology park arose as a consequence of the economic and industrial crises in the 1970s. This is also the reason for its geographic location: It is the area of the former shipbuilding industry which was not accessible to the city's inhabitants until the regeneration processes started in the mid-1980s. After having started with building living-spaces, the company in charge of the development, *Älvstranden Utveckling*, was looking for an economic driving force, finding it in Chalmers university and Ericsson. They agreed to settle at the former harbor and to develop a cluster. Although selecting the place was influenced by several coincidences, no disadvantages are seen in the particular place; quite the contrary, the inner-city location is regarded as advantage. Nevertheless, the relation between the technology park and the citizens of Gothenburg is not yet ideal. As the area has only recently become a place to be for everyone, people hesitate to cross the river – if they do not live or work on that side. This is enforced by the fact that there are few bridges crossing the river. Therefore, the *Science Park*'s representative stresses the importance of enhancing communication. That implies both improving the infrastructure – facilitating the access to the area by building bridges and developing public transport – and informing the citizens about what is going on in *Lindholmen Science Park*. The plan is to create places of information, "showrooms for citizens" (GSP, 00:31:26) so that "the man and the woman from the street can come and learn about what is happening in Lindholmen" (GSP, 00:31:29). From a sociological point of view, though, the problem persists that it is the citizens who have to take action on getting informed: Before using the places of information, they have to actively go to *Lindholmen Science Park*. Even before that, they have to be informed about the existence of such places of information and have to be interested in the *Science Park* as such. In this sense, there is still a great deal to do.

Dublin

When going through the material that I collected on Dublin with the knowledge gained in Gothenburg, interesting information appear. As mentioned above, Dublin has at least one similar cluster for the knowledge-intensive economy. *The Digital Hub* has striking similarities to *Lindholmen Science Park*, but none of the representatives mention the Triple Helix concept. Having a closer look on the interviews shows that the concept is applied anyhow, though in an implicit way.

In 2003, *The Digital Hub* was founded by the Irish government. It is situated in one of the oldest parts of Dublin, a quarter called The Liberties. Here, the *Guinness* brewery had its former production facilities, and parts of the buildings are now used by *The Digital Hub*. The *Digital Hub Development Agency* as state agency is responsible for the management of the *Hub*. It comprises representatives of the city government, the government's organization for supporting enterprises (*Enterprise Ireland*), and the government's organization for promoting business in Ireland

(*Industrial Development Authority* (IDA)) (cf. http://www.thedigitalhub.com/digital_hub/). Thus, in contrast to *Lindholmen Science Park*, the state has a much more prominent role. Its task is to " actively [manage] the project environment by implementing physical and support initiatives to ensure that the creators and innovators of next generation digital media products and services have an opportunity to grow " (cf. http://www.thedigitalhub.com/digital_hub/index.php). In this sense, the field of activity corresponds to that of *Lindholmen Science Park*. When talking to one of the *Hub*'s representatives, the picture of people involved broadens as well:

> "We have an interesting mix of people from education, industry, the head of Enterprise Ireland**,** the head of IDA, the head of the Higher Education Authority and then independent people, you know, from business, education and the community, so it's a good array of people." (DDH2, 00:00:46)

Though not part of the formal agency, industry and academia are part of the conception of *The Digital Hub*. Having identified these partners, one can say that the structure of *The Digital Hub* is implicitly following the Triple Helix concept – it's a case of 'Triple Helix incognito'.

The main objective of the *Hub* is characterized as "the development of enterprise and learning, and the two linked to digital media" (DDH2, 00:07:25). Learning is communicated as central aspect, and the social impact of the *Hub* is stressed when a city representative states that

> "not only are you creating the Hub, in the employment sense, but you can also use it as a demonstration project, of where that hub has a wider impact on the community around it. (...) so it becomes a learning community." (DCC1, 00:17:04)

Herewith expressing an integrative community development strategy – that can also be found in planning documents (cf. Digital Hub Development Agency, 2003) – as central aspect of *The Digital Hub*, the social dimension is added to the economic dimension that the establishment of the *Hub* has. It is also expressed in strategies to cooperate with local schools – in Triple Helix terms, the academia.

What the *Digital Hub Development Agency* does is providing a certain infrastructure for both start-up and well-established companies. The demands of the digital media field – namely, office space, information technologies including broadband, meeting spaces, and inner-city location – are identified beforehand (cf. interview DDH2) and an appropriate infrastructure is provided. The aspect of close proximity to the city centre can be linked to the role of cities in the knowledge society: Communication becomes central, and cities serve as sites for (face-to-face) interaction. The infrastructure offered thus implies office spaces in different sizes and with a variety of equipment in a district close to the city centre. The relation between the three partners involved – government, industry, academia – is also similar to the case of *Lindholmen Science Park*: The *Digital Hub Development Agency* as state agency provides space and infrastructure for companies to enable them to grow and with it to foster economic growth in a certain industrial sector. The companies, on the other hand, use the space provided for their own purposes by at the same time allowing cooperation with local schools. The objective is to "develop a new sector, industry sector, [and] integrate it into the local community" (DDH2, 00:21:00), meaning to educate the future workforce in the field of digital media, thereby enhancing Dublin's and Ireland's position as places of the knowledge society. The difference to the Gothenburg case, though, is the dominant role of the state in the *Hub*'s organization.

When regarding the relation between the inhabitants of Dublin and *The Digital Hub*, another difference occurs. In contrast to the area of *Lindholmen Science Park*, the area of the *Hub* is part of an old inner-city district with existing living and working facilities and a local community with an own identity. One reason for cooperation is the anticipated urban regeneration of this district. As several buildings are protected as historical monuments, only the interior of many buildings can be changed. In the future, new buildings are planned as well, but due to certain planning requirements they have not yet been realised (cf. interview DDH1). This has had positive effects: Transforming only the inside seems to have facilitated the integration of the initiative in the local community (cf. interview DDH1). Thus, these little physical changes are a major difference to Gothenburg and the huge physical transformations that are taking place in the area around *Lindholmen Science Park*.

Having described the two technology clusters in detail, I will now turn to their role within the 'creative city' conception.

5.2 Technology clusters as constitutive elements of the 'creative city'

In this subchapter, I will focus on the impact of the technology parks on the cities ' developments towards 'creative cities' and on the Triple Helix model that is hidden in the overall planning strategies of the cities.

The difference between Gothenburg and Dublin can be put this way: In Dublin, *The Digital Hub* is located in a run-down, quite disadvantaged inner-city district. The focus of the people responsible for the *Hub* is not clear-cut and the effects are characterized differently. The focus is either on the positive effect such a digital media cluster is expected to have on the economy of Dublin and Ireland or on the community and the district itself. These two different perspectives can even be found in one and the same interview. The latter subsumes the economic under the social effect; economic development is seen as underlying driving force for the whole development process by attaching greater importance to the social effects of such a development. The first implies the perspective that urban regeneration and job development

are "intended consequences" (DDH2, 00:07:31), but that the focus is on learning and economic development to improve Dublin's and Ireland's way towards becoming a knowledge society.
In Gothenburg on the other hand, *Lindholmen Science Park* is part of the renovation process in the former dockyards. It has a role to play in making the area attractive for business, but also for potential residents as the area is designed as a mixed-use area. The focus lies on the economic effect that the *Science Park* can have on the city and the region, which will then also affect the sociality of the area and the city. There is no local community with long-grown identity that can feel socially excluded, apparently a fact that strongly influences the focus of urban planning and the way it is communicated.
But what role do these clusters play for becoming a 'creative city'? According to interviews with city planners and inhabitants as well as to planning documents, these clusters play a major role.

Technology Parks and the 'creative city'
Despite the differences, both clusters can be described as constitutive elements of the cities ' conception as 'creative cities'. In Dublin, city planners understand the city as being "a sum of its part" (DCC1, 00:19:27); " with framework plans for the city areas can we knit them together, as part of this creative city " (DCC1, 00:19:33). *The Digital Hub* is a "niche" (DCC1, 00:19:20) that "helps generate this area as a creative area" (DDH2, 00:07:14). An area significantly constituted by a technology park therefore accounts for a part of a 'creative city', Such a creative area not only implies facilities for the creative class, but also " restaurants, cultural activities " (DDH2, 00:11:39) and people living in the area. Similarly, the representative of *Lindholmen Science Park* conceptualizes what he calls a creative milieu. In his conception, both architecture and the people involved add to such a milieu: Being creative is only possible in an environment that corresponds to the people 's needs which have to be identified beforehand. Additionally, the people should be diverse (GSP, 00:34:31). He names having the possibility to meet as most important aspect. Therefore, providing the infrastructure that facilitates meetings between people is seen as a way to be a catalyst for potential creativity – understood as innovation. Additionally, "one has been creative when having created such a milieu" (GSP, 00:36:08). On the one hand, the potential of people as having new, innovative ideas is creative, and on the other hand, planning a certain space that enables creativity is considered creative. Being creative to help people being creative – so to say a 2nd order creativity of those responsible for planning.
It is evident that the cities and their clusters are mutually dependent: the cities need such places to be economically successful and to "maintain knowledge and expertise in the city" (GSP, 00:28:56); the technology parks need the city and its infrastructure to be able to further attract partners. The importance of close proximity to the city centers has already been stressed. Integrating the clusters both locally and conceptually thus seems to be essential. Richard Florida makes a good point in this regard: According to him, there is a difference between places that focus solely on certain technologies and economic growth and places that combine technology, innovation, and urbanity. He terms the first "Nerdistan", the latter "Creative Centers" (Florida 2005:44). These are useful terms to describe the attempt that is being made in Dublin as well as in Gothenburg: Technology parks that stand for generating innovation are integrated in a greater urban context to combine the economic and the social dimension. The objective is to have creative people working and living in a specific, namely creative, milieu: the 'creative city'. In this sense, the clusters are essential and constitutive elements for being a 'creative city'.[3]

City planning and the Triple Helix
As shown above, the empirical material from Dublin and Gothenburg indicates that cities and technology parks are mutually dependent. Taking the example of Gothenburg: The city of Gothenburg needs such places to be economically successful and to "maintain knowledge and expertise in the city" (GSP, 00:28:56); the *Science Park* needs the city and its infrastructure to be able to further attract partners and to avoid becoming a "Nerdistan". Despite the interdependency, the relation between cities and technology parks needs improvement in both cities. In Gothenburg, the *Science Park* is economically integrated and integrated in terms of city planning. But it is not yet socially integrated. In Dublin, the picture is similar: Although the social impact that the *Hub* can possibly have is much more communicated than in Gothenburg, it is not yet fully integrated in social terms. Time will tell how the cities and their clusters develop; furthering the social integration of such clusters seems to be an important task for the political actors whose objective is the 'creative city'. As a representative of *The Digital Hub* puts it:

> "I think this area then could become a flagship (...) for what 's possible by working with industry and local community and local authorities, to develop a lifestyle and a living environment that actually helps create a creative city and a knowledge-based economy." (DDH2, 00:22:45)

Implicitly, she promotes applying the Triple Helix concept on city level. When analyzing the planning concepts that are actually in use, the structure of the Triple Helix concept is traceable in all of them, to differing degrees and in most cases 'incognito'. As the economic aspect is increasingly emphasized in a lot of the integrated urban regeneration

3 However, technology parks are not sufficient elements for being a 'creative city'. As I will show elsewhere, an aesthetic-cultural dimension, also being located in specific places of a city, is constitutive for ' creative cities' as well.

programs that the cities use, a picture arises that makes clear that cooperation of the political, the economic, and the learning sphere has become a central aspect on city level.
Relating that to some characteristics of the Triple Helix concept leads to two implications: (1) Establishing a cluster in a specific way with own characteristics, as it is the case with *Lindholmen Science Park*, emphasizes the importance of a flexible adaptation of the concept. That supports what Leydesdorff and Etzkowitz write in 1995: "Examples [...] point to historical conditions which do not seem to be easily reproducible. [...] Niches can be maintained only in specific contexts. Furthermore, the anticipation of niche formation as breeding places for new developments requires reflexive management of the social conditions of knowledge production and control." (Etzkowitz and Leydesdorff 1995:14th paragraph)
(2) The example of *Lindholmen Science Park* shows that such a cluster is typically established at times of crisis. That can be paralleled with what Leyesdorff and Etzkowitz state for the Triple Helix concept as such: "These new arrangements typically arise under crisis conditions such as those induced by general economic depression or increased international competition." (Leydesdorff und Etzkowitz 1998:5th paragraph) . Times of crisis can thus be seen as chances – both for the economic structure of a society and for its cities. In the case of *The Digital Hub*, establishing the *Hub* was not only due to an economic crisis, but also to a social one as the quarter urgently needed regeneration.
In this sense, the Triple Helix concept seems to be a concept that can be integrated in city planning strategies with positive effects – at times of crisis, but presumably also in the long run.

Digression: Creativity as programmatic element of city planning
By now, creativity has been mentioned in several ways without any form of definition. In the case of *Lindholmen Science Park*, remarks were made on people being creative and surroundings being creative. But what does creativity mean in the context of contemporary city planning? My research indicates that two understandings of creativity can be analytically differentiated: creativity as arts and culture and creativity as (technological) innovation. [4] The latter is the understanding that is dominant in technology parks as *The Digital Hub* and *Lindholmen Science Park*. In this sense, such clusters are places of creativity as innovation is the central objective of the people working there.

6. Final remarks
The phenomenon of 'creative cities' is strongly linked to changes in contemporary Western societies. The examples of Dublin and Gothenburg illustrate two points: (1) The Triple Helix concept is used in both cases as part of the planning strategies of the local technology parks. These parks are essential and constitutive elements of the cities ' strategies to become a 'creative city'. (2) The empirical material also reveals that the Triple Helix concept plays a more important role in planning the cities than can be assumed in the first place. The integrated planning approaches that are applied all show implicit structures of the Triple Helix model, though to varying degrees. As the Triple Helix concept is hardly labeled as such, I call that 'Triple Helix incognito '.
In planning processes, creativity serves as keyword and as scientific reference. Applying the 'creative city' concept implies using two different understandings of creativity. By interpreting the term as (technological) innovation, the connection with the knowledge society is emphasized. Using it in its aesthetic dimension, the focus is on the field of arts and culture.
Summing up, Dublin and Gothenburg as 'creative cities ' can be called paradigmatic cities of the knowledge society.

4 As already indicated in footnote 3, the aesthetic-cultural dimension of creativity is equally important. The associated meaning is used in the context of city planning as well and serves as reverse side of 'creative city' planning strategies.

References

a. Identification code for interviews

Dublin

DCC1: interview with a representative of the Dublin City Council, Dublin, 16 th September 2008

DDH1: interview with representatives of *The Digital Hub Development Agency*, Dublin, 16th September 2008

DDH2: interview with a representative of *The Digital Hub Development Agency*, Dublin, 26th September 2008

Gothenburg

GSP: interview with a representative of *Lindholmen Science Park*, Gothenburg, 16th September 2009

b. Planning Documents

Dublin

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