# Urban Hotspot 2.0: The challenge of integrating knowledge hubs in the city

## Willem van Winden, Lead Expert of the REDIS project
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## Intro

Cities all over Europe are developing 'knowledge hotspots': physical concentrations of knowledge-intensive or creative activity. They come in many disguises: science parks, technology parks, creative districts, design quarters etc. Well-known examples are the Cambridge Science Park, Barcelona's @22 district, or Helsinki's Arabianranta area. Increasingly, such hotspots are being developed inside the city rather than at sub-urban Greenfield sites. This makes their development highly complex.

A key challenge for cities is to deal with the many conflicting interests, and to integrate knowledge hubs in the city. How do European cities deal with these challenges? Which problems do they face, and how do they tackle them? This article is draws from experience gained in the REDIS project[1], that unites 8 cities that are developing knowledge hubs and seek ways to integrate them optimally in the city. The project has fuelled and inspired local debates, through an in-depth 'peer review' method, in which the local stakeholders exposed themselves to constructive criticism of the partner cities.

## Knowledge hubs come back to the city

Science parks have long been the most visible 'addresses' of the knowledge economy. Cities and universities have invested in them for a number of reasons: to commercialize academic research, to create knowledge intensive jobs, or as a means to express a cities' readiness for the knowledge economy. Cambridge Science Park (established by Trinity College in 1970), can be considered as the mother of all science parks. It is the UK's oldest and most prestigious science park. In the 1980s, the science park concept became widespread, and currently, there are

123 university-based science parks in the US, 46 in the UK and more than 200 in Asia. Science parks typically focus on 'beta' sciences and technology, ranging from basic science to applied science to product development and sometimes even manufacturing.

In the last decade, new types of 'knowledge hubs' are being developed, around emerging thematic fields beyond science and technology. Notably the 'creative industries' have been discovered as promising growth sector, and consequently, many cities have developed a wide variety of hotspots to facilitate them. In the 1990s, Manchester was early to develop a 'creative quarter', adjacent to the city centre. Other prominent frontrunners are the Art&Design city in Helsinki, and Barcelona's @22 district, in which two hundred hectares of industrial land are transformed into an innovative district. Other cities are developing comparable concepts for creative industries or more specific branches like media, design, fashion etc.

Although the thematic focus is different, there are similarities between these new knowledge hubs and the more 'traditional' science parks described above. The economic development motives for investing in creative quarters are similar: Local governments invest in this type of concepts in the hope to create new jobs, to gain a reputation as 'knowledge city' and to attract the creative class. Typically, universities and other knowledge institutes are involved in the development, and hope to commercialize their research; also, many have incubation facilities, start-up support, and seek to develop local networking as a means to promote innovation.

But there are major differences as well, especially from an urban development perspective. Unlike science parks, the creative hubs don't look like mono-

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[1] Detailed information can be found at http://urbact.eu/thematic-poles/growth-and-job-creation/thematic-networks/redis/presentation.html

functional business parks. They are typically located in city centres and/or regenerated industrial areas, and have a more urban and lively ambience that fits the needs of the type of people who work there. The tenants - design firms, architect agencies, media companies, etc. –prefer environments with a distinct and urban identity. Their work culture is far away from the 9-17 mentality, and work and life are mixed up in time and space. People in these industries think in terms of projects rather than employers; there are many freelancers working temporary together, and they use public facilities (bars etc) as meeting places. They are often deeply involved in cultural production and consumption, and thrive in a lively and diverse urban environment.

Given this distinctly 'urban' orientation, policymakers have come to embrace the creative industries not only as promising growth industry but also as a catalyst for the urban regeneration. All over Europe and the US, worn-out industrial sites have been transformed into lively creative factories –often with

substantial public sector support-, and have certainly contributed to the regeneration of many cities and districts. It's not only about physical regeneration: often, urban knowledge hubs are developed with explicit social regeneration objectives in mind.

Thus, 'new generation' knowledge hubs are increasingly being developed as part of the urban fabric rather than outside town, and they tend be more mixed in term of functions. Interestingly, this is not only true for hotspots for creative industries. There are several recent examples of technology-oriented urban knowledge quarters. The city of Newcastle (UK), member of the REDIS-network, is developing a large science quarter in the heart of the city (see box). In Dortmund (Germany), a second generation technology hub 'Phoenix' is being developed as full part of a new urban neighbourhood, including housing and leisure functions (see http://www.phoenixdortmund.de/de/home/)

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Newcastle Science Central
The city of Newcastle-upon-Tyne (UK) is an example. Over the last years, the city has successfully transformed its industrial image, through heavy investments in culture and flagship architecture. The city's next ambition is to become a significant 'city of knowledge' in the UK. Among other things, Newcastle is developing a large 'science quarter' at a former brewery site in the city centre. To realise this ambition, the City Council works together with the University of Newcastle and ONE Northeast, the regional development company for the Northeast of England. The partners have the intention to transform the brewery site into a new mixed-used central district, focused on attracting and developing world-class knowledge and business in science and technology.

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The shift from the isolated campus model to integrated approaches has brought knowledge- based development to the heart of Europe's cities. This 'urban turn' is a manifestation of a more general re-appreciation of cities. Knowledge workers increasingly prefer to work in a nice and lively working environment that offers amenities and facilities beyond just office and lab space, and where consumption opportunities are more widely available

(Florida, 2002; Glaeser, consumer city). There is pressure on firms and research institutes to meet these demands: skilled knowledge workers have become a scarce commodity, and there is severe competition to lure them. One of the ways to do it is to offer a very attractive working environment that includes facilities for leisure and shopping.

## The challenge of integration

The development of an 'urban' knowledge hub is a complex challenge. Many stakeholders play a role, with different interests: knowledge institutes, housing corporations, neighbourhood councils, real estate developers, local government departments, etc. New urban knowledge hubs are places where these different (and often conflicting) interests fight their battles. They are also places where the new economy merges with the old, where new 'elitist' knowledge workers mix with the indigenous inhabitants, and where new architecture and structures blend with the existing urban fabric.

A major challenge for cities is to handle conflicts of interest, and, in the end, to integrate knowledge hubs in the city in a sustainable way. Based on experience gained in the REDIS-project, we distinguish three dimensions of integration: physical, social, and economic.

Economic integration refers to the links between the knowledge hotspot and the local economy. Does the new development generate jobs for locals or people in adjacent neighbourhood, or only for the 'creative class' coming from elsewhere? To what extent does the new knowledge hub offer interesting new business perspectives for firms in the area, i.e. services firms, café's, restaurants? Can local firms use new facilities to be developed there? Are local firms involved in the project development process?

Social integration refers to the social benefits of a new hub for inhabitants of the area and the city at large. Will it generate relevant job openings for locals, or educational opportunities for adults and children? Are there links with local schools? How is the development affecting the social fabric of the neighbourhood? To what extent will the development evoke a process of gentrification, which may drive up prices of real estate and replace poor inhabitants with more wealthy ones? To what extent can the new facilities be used for local community activities? In what ways are citizens involved in the development stages of the project? Do ordinary citizens benefit from the development of the knowledge hub?

Physical integration, finally, is about how the architecture and urban design of the knowledge hub fit with the urban surrounding. To what extent does the architecture connect with the design of adjacent areas? Are efforts made to preserve signallers of local identity like industrial heritage, or landmark buildings? How 'open' is the design in terms of access for citizens and pass-byers, or are there barriers that prevent such access? Is the hub developed as a fully accessible part of the city, or rather as a closed design that intends to keep people out who don't live or work there?

Figure 1 show the three dimensions. A key aspect in the figure is governance and participation of stakeholders in the development process. The figure can be seen as a checklist for policymakers as to how closely new knowledge hubs are
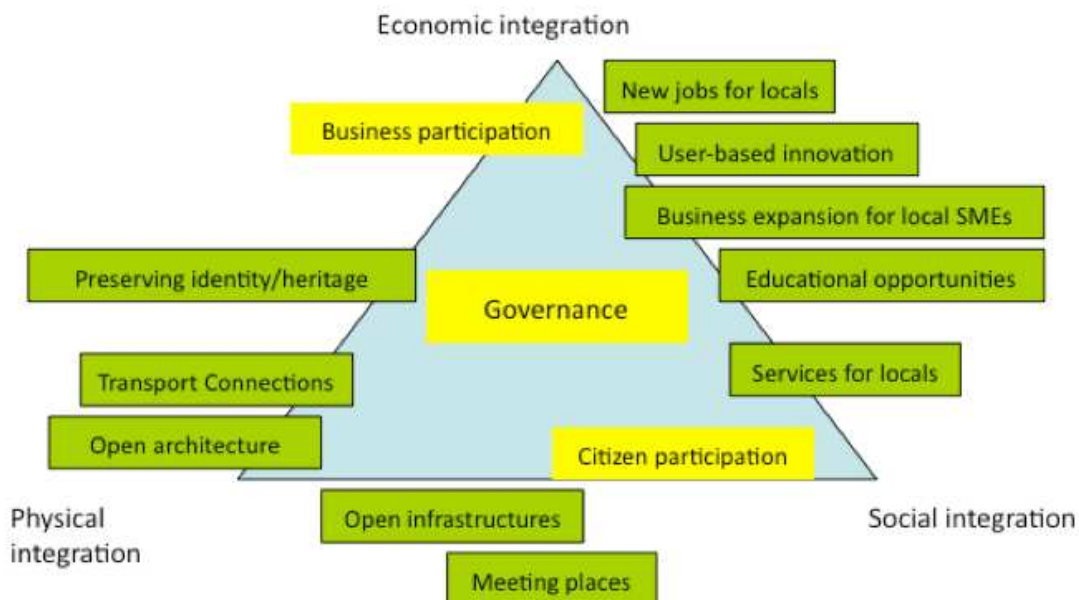
## Examples from European cities

Cities all over Europe are struggling to integrate knowledge hubs in the urban fabric, each with its own particular approaches and issues. To illustrate this, below, we briefly present two different cases. The first is Magdeburg, where efforts are undertaken to 'embed' the university campus in its surroundings. The second is Dublin, where a new knowledge hub is being developed as part of a disadvantaged neighbourhood. Each case highlights different aspects of integration.

*Magdeburg*

In the German city of Magdeburg, lead partner in the REDIS-network, a key challenge is to align the interests of the university with that of the city. The city is redeveloping an old inland port area that is no longer in use as a port into a 'science port'. Some old warehouses are turned into 'knowledge factories' housing knowledge intensive firms, and new premises were built as well. The new Science Port lies next to university campus, so in principle, the two can merge into one single knowledge quarter. In practice, however, it proves not easy to integrate both areas physically and functionally. For one thing, a busy road separates the two areas from each other. For another, the university is mainly concerned with its own campus area, and does not see many benefits in strategic co-operation with the developers of the Science Port next door (similar problems occur in many other European cities). Recently, an urban plan was commissioned, envisioning a physically integration of the two areas. Rather than a 'ghetto for boffins', the area is to become an open area also for citizens and tourists. Citizens should know what's happening in the area, they should recognize it as a new economic pillar of their city. Public spaces in the area are designed to be welcoming to residents and tourists, and the amenities –bars, restaurants- are open to everyone. The nearby Elbe River is an important asset, and it is hoped that with the new urban plan, the Science Port area may become an attractive spot to enjoy river views and leisure activity. That would draw more people into the area, making it livelier and more mixed, which in turn may enhance the attractiveness for knowledge workers and high-tech firms as well.

Figure 2. Aerial view of the Science Port, Magdeburg



It's not only about urban planning. The city also uses events as a tool to involve citizens more in the knowledge economy. Each year the city organises the 'long night of science', during which labs and knowledge institutes open to the public; there are all kinds of workshops, exhibitions and shows

related to innovation and science. The event is very popular, drawing thousands of visitors. It clearly signals that knowledge and science need not be something abstract and obscure, but can lead to interesting new products that make sense in daily life; also it reflects hopes for a new economic future of the city.

*Dublin*

Dublin is another example where integration is a central issue. Since 2000, the 'Digital Hub' is being developed. It is a dedicated cluster of ICT and new media firms, located in a distressed neighbourhood, at the premises of the well-known Guinness-brewery. The old offices and buildings have been upgraded and refurbished, and made ready to house ICT and media companies, thanks to contributions of the city and the national government. The ambition is to develop the area as a world-class knowledge cluster for ICT and new media firms. The Hub should become a symbol for Dublin's economic transition. Meanwhile, 84 companies have located in the Hub, among which big names like Google and France Telecom. The Digital Hub is located on the edge of Dublin's city centre, in a distressed neighbourhood named The Liberties. This is a typical blue-collar working class area for the workers of the Guinness brewery. Over the last decades, the Liberties area has been in decay. It suffers from a high unemployment rate, educational levels are low, and crime rates are relatively high.

To manage the different conflicting interests in the area, the state created a special development organization - de Digital Hub Development Agency (DHDA), This organization acquired the land, and was assigned to develop a concept for the area and to make deals with private developers for the development of commercial functions (retail, housing). From the outset, the government did not want the Digital Hub to become an 'elitist island' in the middle of a deprived area, and therefore took several measures to link the Hub with its surroundings. One of the key ambitions has been to make the residents benefit from the hub as well. The idea to explicitly link the Hub with the Liberties area emerged in a consultation process with the main stakeholders. A 'Community-Public-Private-Partnership' (CPPP) was set up before the start of the development. Residents could express their wishes and ideas, which resulted in a set of conditions and guidelines for the development process. Private developers commit themselves to comply with these guidelines. In particular, all stakeholders signalled the importance of training and education as a link between the Digital Hub and the Liberties area. The Digital Hub Development Agency (DHDA) has signed agreements with 16 schools in the area. It provides training sessions on ICT and new media, typically in co-operation with tenants of the Digital Hub. Moreover, it organizes excursions for schoolchildren to the Hub, and during holiday breaks, it offers all kinds of workshops, for example on making rap songs using digital technologies.

Figure 3. Dublin's Digital Hub



### Smart participation is key

Clearly, there are no blueprints for an 'optimal' integration of knowledge hubs, as their development is highly context-specific. But in any case, stakeholder management is essential, and needs to go beyond the 'traditional' approach of informing and consulting citizens in the masterplanning process. The transformational aspects of large knowledge-driven urban development plans ask for a deeper involvement approach, that does not only address the spatial and physical aspects of the development, but also the functional and conceptual linkages between the new knowledge hub and the city. Participation should not be organized as an occasional confrontation of professional planners with ordinary citizens or business owners in the design stage only, but as a continuing dialogue.

This may benefit the knowledge quarter in several ways, and contributes to its physical and functional integration in the city as a whole. Also, a smart participation approach increases the acceptance of knowledge hubs that would otherwise be considered by many residents as elitist urban enclaves to which they have no relation.

It is advisable to set up structures in which stakeholders are represented from the outset. They serve as arena's where conflicting interests are addressed at an early stage, and where creative solutions can be developed. As in the case of Dublin, the process may lead to a set of 'development guidelines' that reflects (or reconciles) the different interests and ambitions.

In practice, some topics or conceptual areas could be identified in which participation is likely to add value: examples are the temporary use of the development site, or the potential links between science/technology and citizen's daily lives. To generate and elaborate ideas, working groups could be created, involving community representatives, relevant university researchers, civil officers and members of the delivery organization, and funding should be made available to put the ideas into practice.

### Concluding remarks

In the evolving knowledge economy, the competitiveness of Europe's cities will depend on their ability to provide lively and attractive environments for knowledge creation and exchange. Many European realise this, and invest

substantially in the development of urban 'knowledge hubs' of all sorts. Old industrial estates are transformed into fancy creative factories or knowledge quarters; the old 'suburban' model of greenfield campus development is getting out of fashion.

Will these new urban areas develop as 'elitist' and stand-alone enclaves for the happy creative class, or can they be made part of the city at large and benefit other citizens as well? Many cities go for the latter option, for good reasons. But the challenges and questions they face are numerous. How to deal with tensions between the original inhabitants and the incoming 'creative class' in a particular area? How to open opportunities for people and firms to benefit from the new developments? How to deal with the tension between openness and security? How to find and manage real fruitful interactions between the knowledge hub and its surrounding?

This paper has conceptualized the issue, and provided some case studies, but much more can be said and learned about this emerging issue. More research and exchange is needed to assess the effectiveness of policy interventions, and to discover the conditions under which 'integration' can succeed in varying circumstances and contexts. A promising approach – adopted in REDIS- is to combine state-of-the-art research with 'deep' international policy exchange, in which not only policymakers are involved but also other local stakeholders.

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