

## Urban knowledge economies affected by the crisis?

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How does the economic crisis affect the development of cities towards 'knowledge cities'? This paper discusses the impact of the crisis on the knowledge economy in general, and the development of new 'science districts' in particular. It focuses on cities that are united in the REDIS-network<sup>1</sup>.

### Recalling the basic drivers of urban economic growth

In turbulent times of crisis and recession, it makes sense to recall the basic drivers of economic growth. It is clear for some decades now that economic growth does not only come from 'traditional' production factors (land, labour and capital). Rather, technological progress and innovation are key drivers of growth. Governments and companies around the world are aware of this, and have invested heavily in research and development (R&D), knowledge infrastructure and knowledge management. The annual global budget devoted to R&D currently exceeds one trillion US dollars.

There are signs that the emerging knowledge economy has reinforced the role of cities in the economy. After a long period of urban decline, the end of the 1980s marked the beginning of a remarkable revival of urban areas in Europe and the US, and this tendency coincides with the emergence of the knowledge-based economy. The strong knowledge infrastructure of many cities has turned into a key economic asset. Moreover, the diversity (of people, firms and cultures) so typical for urban regions constitutes a fertile ground for new ideas and innovations. The diffusion of new knowledge and technology is faster in urban areas, thanks to the density and physical concentration of large numbers of knowledge workers and knowledge-based firms<sup>2</sup>.

### *Knowledge economy is people's business*



Source: presentation Kartrinebjerg

### Planning for the knowledge economy

Cities throughout Europe deploy a variety of instruments to boost their knowledge economy. They make policies to attract talent, to reduce school drop out rates, to develop knowledge clusters, facilitate knowledge transfer between universities and companies, and to promote entrepreneurship. Several cities have invested in landmark architecture and other 'grand projects' to underline their ambitions as knowledge city. The city of Valencia (Spain) for example created a futuristic 'city of

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<sup>1</sup> <http://urbact.eu/en/projects/innovation-creativity/redis/homepage/>

<sup>2</sup> See Van Winden, W. (2006), Globalisation and Urban Competitiveness: Challenges for Different Types of Urban Regions, in OECD (2006), Competitive Cities in the Global Economy, OECD Publishing, Paris

arts and sciences' (designed by Calatrava), a multimillion euro investment presenting Valencia as a knowledge center of the 21th century<sup>3</sup>.

### *Valencia's City of Art and Science*



An increasing number of cities invest in urban 'knowledge quarters' or 'creative districts', and develop them as integrated parts of the urban fabric. This brings knowledge back to the heart of cities. The trend reflects the growing conviction of policy makers that innovation and knowledge creation is an iterative and interactive process that thrives in diverse and mixed environments. There is a sharp contrast with the 1970s and 1980s, when knowledge and science parks were typically created at 'greenfield' suburban locations, outside the core city. The shift from the isolated campus model to integrated approaches has brought knowledge-based development to the heart of Europe's cities. New ideas about the significance of user (read: citizen) involvement in innovation reinforce this tendency.

The city of **Dortmund** exemplifies this shift from isolation to integration. Like much of the Ruhr area, this former industrial powerhouse faced massive economic decline due to deindustrialisation. Since the 1980s, knowledge based development has been the cornerstone of local economic policy. Back in the 1980s and 1990s, the city developed a mono functional technology park, physically remote from the city. Currently, the city is developing a second, 'new generation' knowledge hotspot on the Phoenix site, a former industrial site near the city centre. In contrast to the first technology park, this one is being redeveloped as a mixed-use area, including residential functions, leisure, and all sorts of amenities. Moreover, to give it identity, the development is explicitly linked to the industrial past of the area. Parts of the industrial heritage are preserved and reconverted. This attempt to preserve or create 'identity' is typical for post-modern knowledge locations. More info on [www.phoenixdortmund.de](http://www.phoenixdortmund.de)

The city of **Newcastle**, UK (REDIS-partner) is another fine example. Over the last years, the city has already successfully transformed its industrial image, through heavy investments in culture and flagship architecture. The cities' next ambition is to become a significant 'city of knowledge' in the UK. Among other things, the city 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 city centre quarter, focused on attracting and developing world-class knowledge and business in science and technology. See [www.newcastlesciencecity.com/](http://www.newcastlesciencecity.com/)

### **Impact of the crisis: observations and expectations**

<sup>3</sup> [http://www.spanish-living.com/regional/Valencia\\_city-of-arts-and-science.php](http://www.spanish-living.com/regional/Valencia_city-of-arts-and-science.php)

How will the current economic crisis affect the transition process of cities towards a knowledge economy?

There are some good reasons for optimism. Public spending on science, research and higher education knowledge will probably not decrease on the short run. Some countries, including France and Germany, even announced to increase R&D spending as part of the economic rescue package. In that sense, the knowledge sector is robust. Changes are under way, however. The recession is fuelling debates on the nature of R&D investment. Many argue not just to augment expenditures but to spend resources more economically, and develop 'smart specialisations', not only on the national but also on the urban level. There are strong voices to focus public R&D spending even more on pressing issues such as addressing climate change and moving to more sustainable forms of energy.

Inevitably, in the not-so-distant future, governments will have to raise taxes or cut expenditures to reduce the debts that they are now accumulating. This constitutes a possible threat to large knowledge based programmes. There may be a mounting societal and political pressure to spend tax euro's on social policy rather than 'fancy' or elitist knowledge economy projects.

Luc Soete, innovation professor at Maastricht University, identifies a gap between EU countries in this respect. On one side, there are countries with high R&D investments (examples are Finland, Sweden, and Germany). The governments of these countries generally consider the financial crisis as an opportunity for reforms that strengthen R&D and innovation, and the development and use of "green" technologies and eco-innovation. On the other side, there are countries with low private R&D investments. In their response to the crisis, they appear to only marginally refer to research and innovation stimulation measures. In the longer run, these different policy responses may forge a growing divide between EU countries, with technologically leading countries taking a further lead, and a group of falling behind countries adjusting their specialisation towards less technologically advanced goods and services.

The impact of the crisis varies among European countries, but also within countries, not every city is equally affected by the economic crisis. There are signs that industrial regions (including those specialised in high-tech industry) are particularly hard hit, due to their strong export orientation and the collapse of world trade. A recent UK report shows that workforce skills largely determine how well cities are performing in the recession and that most of the worst hotspots are repeat casualties from previous recessions. And: "High skills cities, places with highly qualified populations such as Cambridge, York and Oxford, have fared better compared to areas with a high proportion of residents with no or low qualifications, such as Stoke or Rochdale which have been much harder hit". (<http://blog.taragana.com/pr/repeat-casualty-cities-hit-hardest-by-latest-recession-and-risk-long-term-cycle-of-decline-3817/>)

In The Netherlands, similar tendencies can be observed. Industrial regions in the Southeast of the Netherlands suffer more than knowledge and service based cities like Amsterdam. This early evidence suggests that diversified knowledge cities will emerge stronger out of the crisis than industrial regions, but this conclusion could be too early. Industrial regions are hit harder because of their export orientation, and a rebounding world economy may boost their exports and bring them back with a vengeance.

There are some positive aspects of this recession, too. First, the recession may give a boost to R&D co-operation between the public and the private sector. There are no strong signs yet of private sector cuts in innovation efforts and expenditure, but that

might change when the recession lasts. In any case, private firms are keen to save costs and may be interested in co-operation with public science to economise. This could have positive long-term effects, and contribute to regional types of 'smart specialisation'. Moreover, the crisis is a catalyst for entrepreneurship. Many employees start their own business.

### **Effects on the development of urban 'knowledge quarters'**

The REDIS network<sup>4</sup> (under the URBACT II programme) unites eight European cities with advanced plans to develop 'knowledge quarters': special areas or quarters in the city where knowledge economy is central. What is the impact of the current crisis on these developments? What trends do we observe?

In some cities, declining land prices and real estate values have a deep impact on the value proposition of newly planned knowledge quarters. Private investors are faced with higher capital costs while expected revenues are on the decline. Developers are inclined to opt for cheaper solutions (higher density building, less luxury, 'stripped' plans for public space and infrastructures). One of the key questions is whether sustainability issues (investing in green technology, energy saving buildings, new ways of energy supply) will suffer from the crisis. In the REDIS-network, we see that some large-scale knowledge projects are delayed; also, the envisioned participation of the private sector is abandoned or downscaled. In Newcastle, initially the partners were looking to procure a private sector developer to take forward the development of Science Central knowledge quarter. Due to the economic crisis, the delivery of the site has changed. The city development company (1NG) is now managing the site on behalf of the land owners. A phased approach to the development of the site is to be implemented now. There is also more focus on using public sector funding in the short term to invest in the infrastructure for the site to provide the right conditions to attract private sector developers.

In many cities, the development of new knowledge quarters does not depend much on the private sector but rather on investments from universities, public authorities or EU funds. Here, we see little if any impact of the crisis. In **Bialystok**, one of REDIS partner cities, the impact of the crisis is not severely felt. In general, Poland is less affected by the crisis, thanks to strong consumer demand, stable EU funding and a devaluation of the currency. 45% of entrepreneurs in the region claim that economic slowdown does not influence their businesses at all. The rest of them say the situation is unfavorable. The most visible results of crisis are growing unemployment rate (from 7,9% to 10,4% in the first half of 2009) and a growing city budget deficit. The city of Bialystok is developing a science park, but it is mainly financed with EU funding. The city even experiences "benefits" from the crisis: companies offering services propose lower prices in public tenders. The city allocated almost PLN 3 mln (~750,000EUR) for architectural design and site development for the science park. As many as 23 bidders stood for the tender. In similar tenders organized before there were regularly only a handful. And the final price the city paid for the project is about PLN 1 mln (~250,000EUR). The same situation holds for other public investments like roads, public transport, etc.

In **Magdeburg**, the situation is also rather stable; the public investments in the cities' 'science port' will continue as planned, and there are no signs of declining interest from the private sector. On the longer run, there is a threat of budget cuts for universities. The Land Sachsen-Anhalt is discussing the budget for 2010-2011;

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<sup>4</sup> <http://urbact.eu/en/projects/innovation-creativity/redis/homepage/>

expenditures have to be cut by about € 3 billion, and universities will have to take their share. This may affect Magdeburg University as well, with negative impacts on the cities' ambition for the science quarter.

### *Magdeburg's Science Port*



The city of **Aarhus** is developing the "IT city of Katrinebjerg". The area is home of companies, research institutes and an incubator for innovative firms, all active in ICT. The effects of the crisis are modest so far, with some firms facing a decline in turnover and profitability. Niels Chr. Sidenius, Managing Director of INCUBA Science Park comments on an emerging lack of funding and risk capital, due to the credit crunch: "Firms experience more difficulty to find funding, in particular bio-tech and life-science companies. One of the reasons is that a number of business angles have lost a lot of money on property assets". There is some postponement of projects, but this is not a general trend. Importantly, the market for office space is under pressure, which undermines the area-based concept to some extent: "It is easy for many of our companies (and potential tenants) to find alternative locations we therefore have to focus even more on the additional, more science park specific facilities and services".

### **Summing up**

The economic transition of cities towards knowledge-based economies will continue during and after the crisis. Some effects of the crisis can be observed. First, the impact is different on different types of cities. There are some indications that diversified cities with a strong knowledge base are outperforming industrial cities, but the effect could be temporary. It is simply too early to tell what the structural effects of the crisis will be. Second, it is clear that national policy responses matter for cities, and here we see major differences between EU member states. Overall, investments in public R&D will not decline, but there is a divide in the EU between countries that explicitly boost knowledge investments (those are the countries that already spend much on R&D) and those that do not. The effects will be strongly manifest on the urban level, because it is in cities where the lion's share of R&D takes place. On the positive side, the crisis may bring public research and private enterprise closer to each other. Firms facing economic difficulties have an interest to turn to universities (or other public research institutes) to keep their innovation train running. This may have lasting effects, and local governments are wise to lend a helping hand. The REDIS project unites cities that are making urban plans for knowledge-based development. Here we see a division. On the one hand, there are public sector dominated (and financed) plans for science parks and knowledge quarters. These developments are hardly affected by the crisis so far, as they mainly rely on public funding (national, regional and EU) that was secured and earmarked before the crisis broke out. On the other hand, some cities have development projects in which the

private sector is heavily involved as co-investor. Here, we see significant downsizing and postponement effects: investors face lower land and real estate values, higher capital costs or limited access to capital, and lower expected revenues. The value proposition of these projects has radically changed for the worse, in a very short period. There is a tendency of the public sector taking over the role of the private sector as driver of the developments.