

Aspects on the city as a knowledge tool

Leif Edvinsson



Leif Edvinsson is the world's first Professor, adjunct, in Intellectual Capital at Lund University, Lund, Sweden, and The Hong Kong Polytechnic University, Hong Kong.

Abstract

Purpose – The city can be viewed from many perspectives. In this article the author's perspective will be the city as knowledge tool. In the knowledge economy it might be argued that one of the most essential dimensions will be the relational as well as organizational dimensions, such as a city. The city is the larger context, or structural capital surrounding the human capital, for the value creation dynamics. This also implies that the city is a very complex issue but also highly dynamic knowledge context.

Design/methodology/approach – The method is literature review, empirical project case observations and creative research.

Findings – The city might be seen in this context of a more or less good city regime to support the value creation from and for the knowledge workers. Then the distinction can be that a knowledge city is purposely designed for encouraging and nourishing the collective knowledge, i.e. intellectual capital, as capabilities to shape efficient and sustainable actions of welfare over time. The city can be seen as the structural capital surrounding the human capital but also the relational capital connecting the human capital with the structural capital to give a higher value adding for the knowledge worker.

Practical implications – The city design is the critical organizational and relational capital of tomorrow for the knowledge worker. The city concept and design of its new urbanism, i.e. people migrating into cities, is becoming more and more of a strategic tool in the global competition of knowledge or talent war. To shape the efficient interface for the individual knowledge worker to leverage the global opportunity space with a local opportunity space. In the case of urban design for the knowledge economy this might take us to the need for designing a knowledge port for the knowledge flow as an exchange design for the intangible flows.

Originality/value – This paper views the larger structural capital surrounding the knowledge worker by both looking at some cases as well as stating a preliminary model of drivers for design of a knowledge city. These mentioned cases or forecasts might have strong impact on the urban design for attracting and nourishing citizens for the growth of social capital as network of friends into a new type of urbanism for minds. The knowledge city design is a unifying concept that will help to integrate perspectives of economics, urban studies and knowledge management. The design of a knowledge harbor concept is a multidisciplinary issue and is now being prototyped in reality.

Keywords Knowledge management, Design, Intellectual capital, Human capital

Paper type Research paper

Quizzics

Why and in what way is the city and its design an important knowledge tool?

What characterizes old cities versus new ones? What makes new cities as well as old cities vibrant and sustainable? Will an old city become just a museum or an opportunity space to attract migration of talents into a new concept of united cities? Where do you live and why? If you were moving where would you likely move to and why?

In this article my perspective will be the city as knowledge tool to take into consideration. The city is the larger context, for the value creation dynamics.

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Challenges and new attention

The city can be viewed from many perspectives as described in a recent book on knowledge cities (Carrillo, 2006). This also implies that the city is a very complex issue but also highly dynamic. According to a report from UN lived in developed economies 1950 55 percent of urban population in cities and in 2000 about 75 percent with a forecast to grow to over 83 percent until 2030. Furthermore it indicates that people are attracted by cities either for living or for tourism (Radetzki, 2005).

In the knowledge economy it might be argued that one of the most essential dimensions will be the organizational dimensions, or the regime (Bounfour and Edvinsson, 2005). The city might then be seen in this context of a more or less good city regime to support the value creation from and for the knowledge workers. Then my distinction can be that a knowledge city is purposely designed for encouraging and nourishing the collective knowledge, i.e. intellectual capital, as capabilities to shape efficient and sustainable actions of welfare over time.

The city can be seen as the structural capital surrounding the human capital and connecting the human capital with the structural capital to give a higher value adding for the knowledge worker. Is this city good enough? Is the city context shaping world-class performance of knowledge creation for the quality of welfare or quality of life?

The context will demand a continuous renewal or make over of most old obsolescing dimensions. Who is in charge of this more or less required extreme make over? The opportunity cost of not doing anything is visible in the case of traffic jam, schooling deterioration and decreasing social capital. This can also be seen in among others the old steel districts as well as old harbor cities. It might be measured as a friction cost for the relational capital dimensions.

The city regime has to be very explicit on the social intelligence and appoint a clear knowledge leader. The opposite might result in a kind of social ignorance, with a deteriorating city and civil riots in suburbs like the ones outside Paris in end of 2005, among others related to cultural exclusions. To be sustainable and understand the importance of social intelligence, a lot can be learned from the case of Ragusa in Mediterranean (Radovanovic, 2003). This city, now called Dubrovnik, managed to sustain its wealth on a very high level during 1200-1806, due to its regime of social intelligence – an impressively long period (Dedijer, 2002).

Richard Florida (2002) is also addressing this global migration of knowledge workers and what will attract the creative class. He is now (Florida, 2004) also looking into what will prevent the flight of the creative class from cities and regions? He is looking into three dimensions such as talent, technology and tolerance. These three dimensions are the same as the key components of intellectual capital such as human capital, organizational capital and relational capital.

Now from an outlook point-of-view we can ask what the critical design recipe for the knowledge cities of the future might be. This is among others recently addressed in a report from Price Waterhouse Coopers – *Cities of the Future* (Stuesson *et al.*, 2006), looking into a number of city cases around the world, e.g. Vancouver, Phoenix, Melbourne, Stockholm, Zurich, Yokohama, Johannesburg and many more. There is now also a European Institute for

comparative urban research called Euricur for benchmarking and learning that shows that global competitiveness depends on regional systems.

Some aha cases

A more and more known example is the transformation of Barcelona, Spain. It started many years ago in the 1980s, as a consequence of the closing down of a big SEAT car manufacturing plant. It became evident to the city regime to design an extreme make over.

Today the result is evident with newly constructed and remodeled city areas, positive image, attractive world-class events, and high performing schools and research organizations. What might be the most interesting is the explicit focus and vision of shaping the context for the new workers of tomorrow rather than the present focus groups of politics. The artists, designers, food and restaurant entrepreneurs, bio medical researchers, educational entrepreneurs, all working with intangible and intellectual capital have been attracted to this city. This has then nourished the positive gossip and branding to attract also the knowledge tourists. Consequently Barcelona was the very first city in the world to have a knowledge tourist guide. Behind this transformation is also the very impressive organizational design with several organizational bodies, such as 22 @, Barcelona Activa, appointment of a CKO-Chief Knowledge Officer as early as 1999 and recently also CIO-Chief Innovation Officer, attracted from the famous MIT in Boston.

Another case is the recent transformation of Malmoe, Sweden. It used to be one of the largest ship wharfs in the world with a peak in 1970. Due to the shift of global production competitiveness, Malmoe had to close down and ship out this once successful global structural capital, among others to South Korea.

As a consequence the city was urged to start to look for the future, not only replacement of jobs. After some years of diverse quest and growing social intelligence they started to see the knowledge economy opportunities. The city mayor and his chief urban planning professionals started in to sketch vision 2000 with a new university area as a core seed to build a city campus around. The city Mayor phrased the key question:

People ask where I shall live? Here are the brightest brains, here I want to live.

Today almost ten years later the whole shipyard territory is transformed into a knowledge block. And there are today more knowledge workers on the space than blue-collar workers in the high days of shipbuilding, and the new knowledge workers also offer a higher value adding for the collective social well-being (Fredriksson and Tärbe, 2006).

One of the most impressive and interesting case of extreme make over of a city is coming from Malaysia there the transformation of not only the capital city Kuala Lumpur but a number of cities and the whole country with the knowledge city as a change agent. Some 15 years ago, in 1993, a very impressive scenario, called Vision 2020, was launched by the Prime Minister then Dr Mahathir Mohamad. He is a medical trained doctor, born 1925, who went into politics and society entrepreneurship. This vision focused on the extreme makeover of this developing country economy into a world-class attractive place regarding living, work and social services. Today they are a long way into the realization of the vision 2020.

One of the actions taken was to attract foreign knowledge migration and investment. To this end they launched and shaped the multimedia super corridor (MSC), a territory of some 15 × 50 km, as a kind of modern free port area with impressive ICT infrastructure for foreign partnerships (see www.msc.com.my). It goes from a new and very modern airport KLIA to central Kuala Lumpur and some floors up into the Petronas Towers. In late 1990s scored as

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the tallest buildings in the world. New establishment into this area will receive a special attractive MSC status, among others offering free flow of knowledge migration, few currency restrictions, and tax-free status for first ten years. Today already some 22,000 jobs are said to be shaped with some 1,000 international companies there with a turnover of some US\$1.6 billion.

Furthermore in the vicinity is also the new regional space called Cyberjaya to offer a good ICT environment for world-class attraction of multimedia enterprises. It is the prototype of an intelligent city to attract the creative class, with among others a regime offering a combination of mankind, nature and technology in harmony, including innovative cyber laws. Now 12 more such areas are being planned for the rest of the country (see www.cyberjaya.com.my).

Furthermore as the capital city became too crowded a decision was taken to move out the administration to a new site called Putrajaya. A most dynamic execution with planning during some three years and construction during some six years resulted in a totally new administrative capital. The financial capital investment was about US\$16 billion. Today it is planned to be a city for some 100,000 inhabitants (see www.putrajaya.net.my).

Other interesting cases of extreme make over of cities are the transformation of Singapore, Hong Kong and Dubai. Another recent case with some similarities of MSC in Malaysia is the establishment of knowledge oasis Muscat, as a campus region with high attraction characteristics.

Furthermore it looks like there is another catalyst, like a strange attractor, for transforming cities, namely the Olympic games. Many cities have gone through an extreme makeover for the games such as Barcelona, Spain, but also recently Turino, Italy.

All of this is also closely related to an interesting perspective of relational capital that has been researched by J.-E. Aubert at the World Bank in Paris (2005). He has found that more than 50 percent of the top 20 performing countries, according to the list from World Economic forum 2005, are a kind of island, with a very extensive relational capital to its surroundings. This might be related to the trade interactions of an island or in other terms a kind of open standard for relationships to emerge.

In the case of urban design for the knowledge economy this might take us to the need for designing a port for the knowledge flow as an exchange design for the intangible flows.

Knowledge harbor concept

A traditional harbor is a space to anchor up. It is a place to offer protection and space to load, unload and bunker. Through centuries the harbor has been a center, gate or port for flows, migration and exchange. It has been a symbol for relations with the surrounding world. Until now very much of the strategic focus has been on the flow of goods. But today it is more and more a port for migration of talents and knowledge. It is the flow of brains that is critical. For a long period the political rhetoric has been around the industry and its jobs. But now more and more awareness is spreading about the knowledge worker, the creative class (Florida, 2002) and the hub and move generation. The talent will flow to the port and harbor that will make them successful as well as offer them the quality of life. The creative class is the knowledge economy's most attractive input, equivalent to ore for the industrial society. So the knowledge harbor will become one of the essential tools for the new urbanism and sustainability of cities. How to design a knowledge cathedral or Ba (Nonaka and Konno, 1998) will be essential questions?

The city concept and design of its new urbanism, i.e. people migrating into cities, is becoming more and more of a strategic tool in the global competition of knowledge or talent war. This will demand both more innovativeness for urban design as well as to understand what makes a city intelligent enough over time. The old concept of a capital, as the head city will be challenged. The new question might be where the heads are, and what will attract them to our space. In the quest for shaping the knowledge harbor the strategic focus has to move away from shopping centers and transactional trade of goods. The strategic focus has

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to be on trade of thoughts supported by knowledge arenas, research hubs, cultural spaces, i.e. meeting spaces of minds, and how accessible those are not only on a local basis but most of all on a global basis. In this perspective one critical ingredient of a knowledge harbor will be the airport.

The design of a knowledge Harbor concept (Edvinsson, 2006) is a multidisciplinary issue and is now being prototyped in the border zone Oeresund between Sweden and Denmark. Also in Holland they are talking about this knowledge gateway as Brain Port Navigation.

Reflections on a formula

One city researchers, Dr J. Soderlind, at KTH, Royal Technological Institute in Stockholm, is developing a framework of software, hardware and operational system for urban design (Soderlind, 2006). The hardware is what we can see. The software is what is taking place and the operational system is the rules and regulations. One of his observations is that the hardware is designed for the society of yesterday. The operational system might be even older, while the software is of today. Consequently there is a need to upgrade the hardware. But even more important might be the concept of wetware, once phrased by Paul Romer, as the exchange of thoughts. So where is the wetware and who is in charge?

The design of a knowledge city also takes into consideration dimensions to give a good balance between creative energy and mind retreat. This is sometimes referred to as Feng Shui but more scientifically also referred to as psychosocial dimensions to give good context for the brains, also referred to as brain ergonomics. Among others in the new science and technology Park in Hong Kong this is applied. In Japan it is also referred to as chi management (Nonaka and Konno, 1998), i.e. to be in good harmony with the context. The core might be the relationships to the soil or the context for an ecological urbanism. In trade of goods the usual management perspective is to look for transaction cost. In the knowledge economy with flow of knowledge the key focus should be on friction cost of interactivity. The essence of this is then to reduce the friction cost of knowledge flow and talent migration.

According to the late famous architect Hundertwasser from Vienna, architecture can be seen as the third skin, after natural skin and then clothing. The urban design and its architecture shape the context for the knowledge workers. The human capital is surrounded by the city design as structural capital. The interplay between the human capital and the structural capital might be more or less value creating. If Feng Shui is good for interior design how can it be applied for exterior design as a city design? Will this context be good enough, to shape a Feng Shui or quality of life for the knowledge workers? (see more on www.wofs.com).

Talent attracts talent, i.e. shaping a density or cluster. According to a study by Federal Reserve Bank of Philadelphia, the optimal density of talents might be around 2,200 talents per square mile.

Research is pointing towards the focus on attracting talents, but in terms of intellectual capital it can also be expressed as insourcing of talents, or nourishing the relational capital. How long time will this take? What is the time span and perspective for make over or transforming a city? Is it 4, 14 or 24 years? As the global growth of knowledge as well as flow of talents seems to be growing exponentially, what time frame will be given for the knowledge city design transformation due to the growing global brain and talent competition?

Another learning from the cases points towards the visionary long term leadership, or longitude leadership which might be in sharp contrast to the traditional mandate time for city leadership. A shortsighted leadership is something both the private business sector as well as now the public sector today is suffering from. So a recipe might be to search for courageous and visionary long term thought leadership and short-term execution. The longitude leadership perspective is focused on the aspects of knowledge navigation, i.e. what is around the corner, what is the time flow, and what is the cultural context for strategic evolution (Edvinsson, 2002). This might be both amplified and coordinated by appointing the Chief Knowledge Officer (CKO), or Chief Innovation Officer (CIO) as in Barcelona for the cultivation of the drivers of the knowledge city of tomorrow.

Emerging model

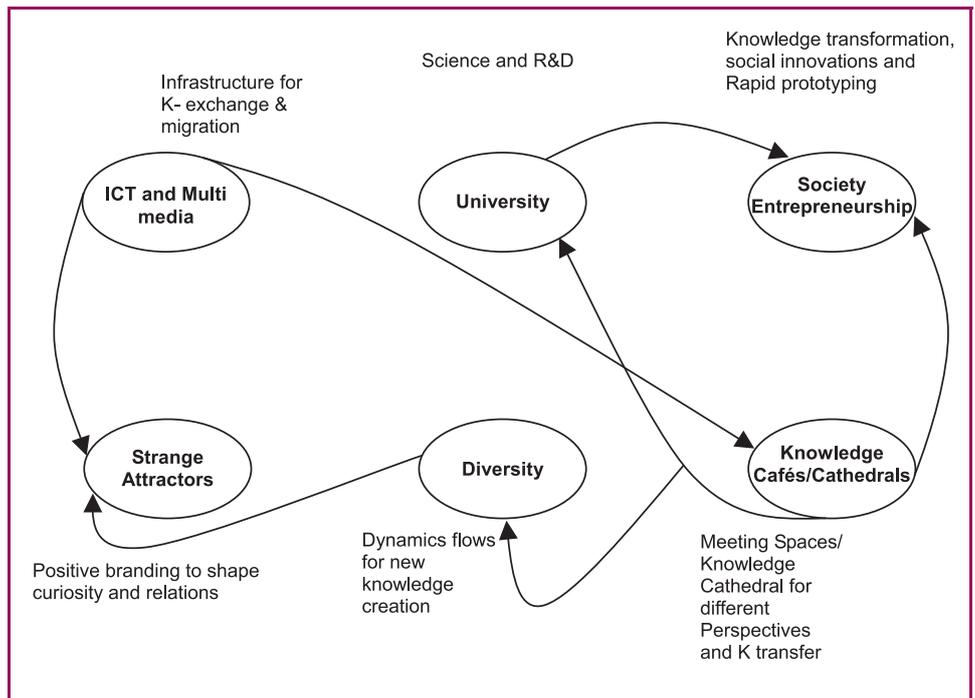
A tentative template, emerging from research 2006 at Lund University, the three major intellectual capital components, for a regime for the new knowledge city design might be illustrated in Figure 1. It highlights some of the major driving forces for the aspect of organizational capital and relational capital surrounding the citizens as human capital.

ICT and multi media university society entrepreneurship strange attractors diversity knowledge cafés/cathedrals infrastructure for K-exchange and migration dynamics flows for new knowledge creation positive branding to shape curiosity and relations meeting spaces for different perspectives and K transfer knowledge transformation, social innovations and rapid prototyping and migration knowledge creation and science.

The next embodiment of a society might be the dream society, as stated by Rolf Jensen (1999), former Director of the Institute for the Future in Copenhagen. He is also referring to this as the fifth generation, where we more and more are looking for the emotional procurement of infotainment, knowledge tourism and entertainment. In the terms of the knowledge economy it might also be referred to as knowledge tourism, and one of the big attractors of city tourism of today.

This is also very close to the research of cities of tomorrow done in Hungary at the Strategic Research Institute, Budapest by Varga (2002). He is referring to that we are leaving the

Figure 1 Knowledge city drivers



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knowledge era and will more and more move into the mind era. This is an era that is focused on the mental dimensions, social intelligence, mindful culture and intangible social well fare. For urban planning this will be another interesting opportunity, which is to some extent being prototyped in a city called Abba outside Budapest.

These above scenarios or forecasts might have strong impact on the urban design for attracting and nourishing citizens for the growth of social capital (Putnam, 2005) and network of friends into a new type of urbanism for minds. This might also take us to cities connected, not only by internet and wire, but also by the opportunity space for endorphins and creative well-being. In the era of minds it might shape united cities of talents between continents, nations and cultures. Especially for the hub and move generation it is a possibility to shape interlinked united cities for the attraction, flow and migration of talents. In e.g. the research communities this is to some extent already happening such as the Cambridge and Oxford, Boston, New York, San Diego, and Stockholm. Mega cities have already started to form what is called the Mega Cities Council.

The critical city leadership dimensions are related to the above model and should focused on:

- mapping capability, such as dragomans for the strategic social intelligence to handle uncertainties and dilemma;
- refinement of unique historical roots and context;
- speed and rhythm of transformative renewal actions; and
- flow of knowledge at a low friction cost supported by ICT, architecture and airports.

Key message

The city design is the critical organizational and relational capital of tomorrow for the knowledge worker. A good and systematic look into a more holistic perspective of intangible as well as tangible drivers is necessary to shape the efficient interface for the individual knowledge worker. Key roles will be the designers and conductors, as CKO of this new city regime in collaborations with the global citizens and local politicians. This will leverage the global opportunity space with a local opportunity space. This might be organizing of chi management to give a good harmony for the mind crafting of the talents. The knowledge city design is a unifying concept that will help to integrate perspectives of economics, urban studies and knowledge management.

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About the author

Leif Edvinsson is an Adjunct Professor both in Lund University and The Hong Kong Polytechnic University as well as Honorary Chairman for Henley Management College KM Forum. Co-funder and chairman for The New Club of Paris for Knowledge Initiatives.

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