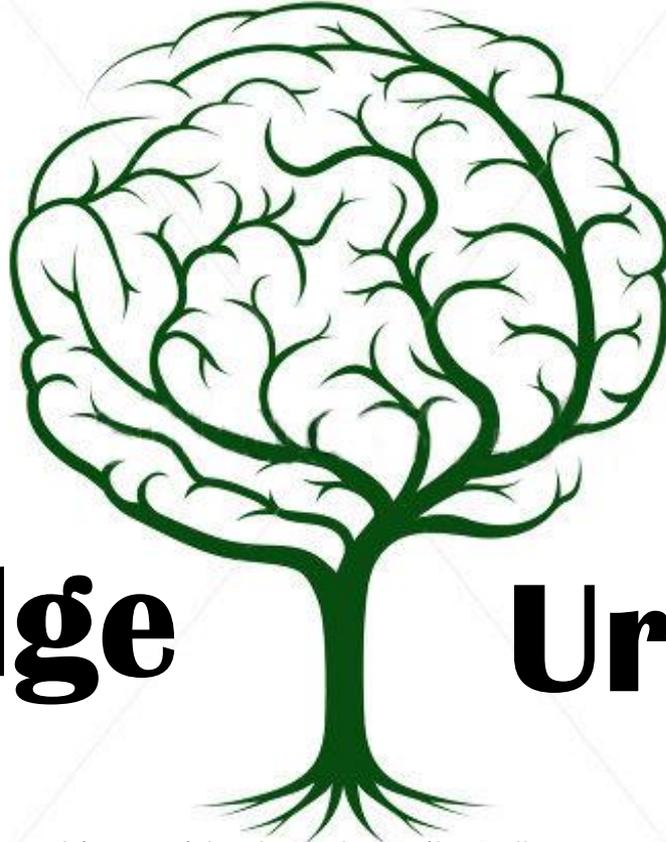




Qatar University
College of Engineering
Department of Architecture & Urban Planning
ARCT 421 - Introduction to Urban Design and Planning



Knowledge

Urbanism

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What's knowledge ?

- Knowledge is a resource, which relies on the past for a better future.
- In the 21st century, more than ever before, cities around the world rely on the knowledge of their citizens, their institutions and their firms and enterprises
- The knowledge image, the human competence and the reputation of their public and private institutions and corporations profiles a city. It attracts investment, qualified labor, students and researchers
- And it creates local life spaces and professional milieus, which offer the quality of life to the citizens that are seeking to cope with the challenges of modern life in a competitive world.



What is a knowledge city ?

- A society which develops in parallel with knowledge development is termed a “Knowledge Society”. The by products of knowledge development, that go through the stages of knowledge creation, dissemination and utilization form the core of “Knowledge Economy”. A knowledge city therefore, becomes a geographical area with an expanding knowledge society, and with knowledge as a strong pillar of its economy.



What is not a knowledge city ?

- The concept of Knowledge City though being a familiar term in Western countries is merely interpreted in the Indian society as a geographical concentration of Special Economic Zones (SEZ's) and I.T. Companies. This has led to the development of various – “Knowledge City” areas, which merely consist of various knowledge based and knowledge intensive industries. However, one needs to realize that the SEZ's, I.T. companies and the other industries, are an integral part of the city of knowledge, and by themselves do not constitute a Knowledge City.



Rise of knowledge Urban development

The concept of knowledge-based urban development has first come to the urban planning and development agenda during the very last years of the 20th century as a promising paradigm to support the transformation process of cities into knowledge cities and their societies into knowledge societies

'knowledge-based clusters' (Arbonies and Moso 2002)

'ideopolis' (Garcia 2004)

'technopolis' (Smilor et al. 1988a; Smilor et al. 1988b; Dvir and Pasher 2004)

"the 21st century society is post-industrial, the Knowledge City is its horizon"

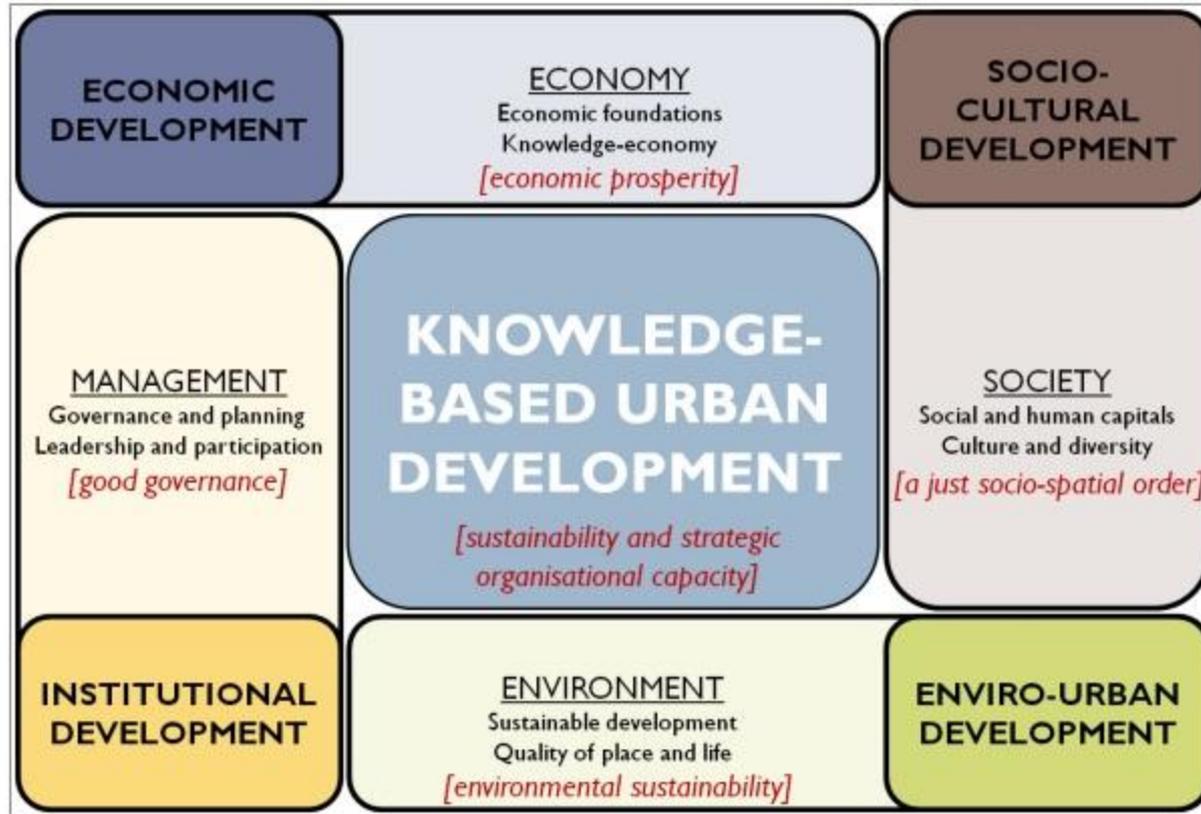
Rise of knowledge Urban development

- It became increasingly relevant in the 21st century. The move toward intelligent and holistic cities, the adaptation to global changes and the development of sustainable mega-projects all require a comprehensive knowledge of social, environmental and economic factors. At the forefront of these innovative and important fields is the study of Urbanism.

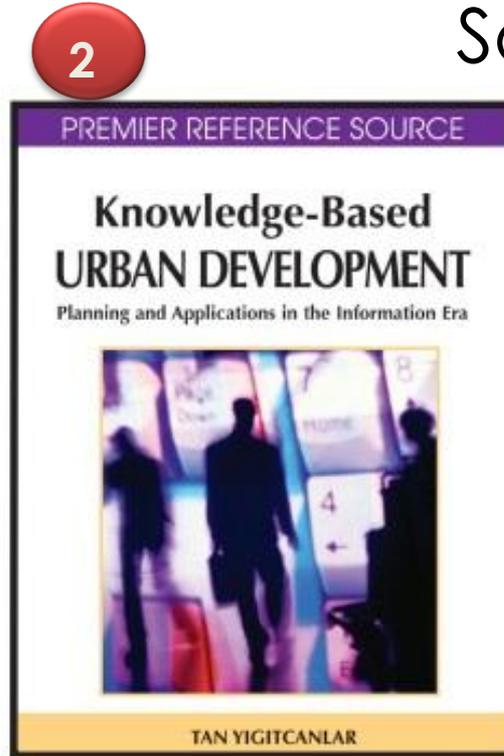
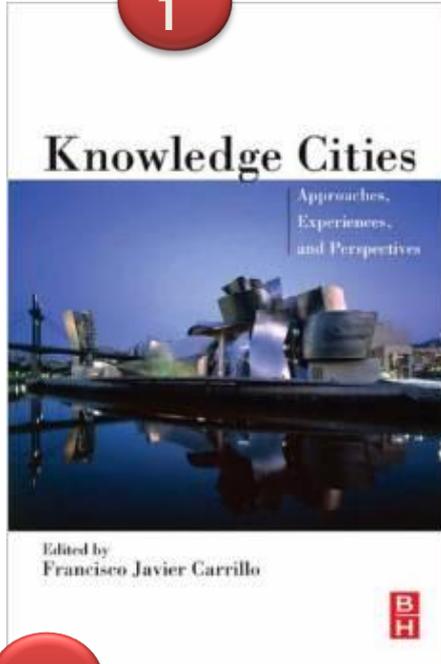
Knowledge city characteristics

- (a) has instruments to make knowledge accessible to citizens
- (b) has network of public libraries
- (c) provides access to new technologies for citizens
- (d) has all cultural facilities and services with a central educational strategy
- (e) has a high newspaper and book reading level
- (f) has a network of schools connected with artistic instruction throughout its territory
- (g) is respectful of the diversity of cultural practices of its citizens
- (h) places the streets at the service of culture
- (i) simplifies, through the provision of spaces and resources, the cultural activity of the community collectiveness and associations
- (j) has civic centers that are open to diversity and that foster face-to-face relations
- (k) makes available to citizens from other territories all the tools required for them to express themselves.

Rise of knowledge Urban development



Sources Background



KC: Francisco Javier Carrillo of the Monterrey Institute of Technology (ITESM) brings together a group of distinguished scholars to outline the theory, development, and realities of knowledge cities. Based on knowledge-based development

KBUD: Planning and Applications in the Information Era covers the theoretical, thematic, and country-specific issues of knowledge cities to underline the growing importance of KBUD all around the world

3

Knowledge Cities
Official Web Site

Knowledge Cities is Sponsored by



Knowledge cities world summit



Knowledge Cities World Summit is an annual event, founded by the World Capital Institute, focusing on the research and management of knowledge cities, knowledge societies, knowledge based development and knowledge ecology. The first summit was held in Monterrey, Mexico (2007) and the second in Shenzhen, China (2009).

The third Summit took place in Melbourne, a city already known as a city for the arts, literature, fashion and major events and internationally recognized as a "Knowledge City".

Implications on design

What is the urban design criteria of the knowledge based urban development ?

**Knowledge
interactions**

**Social
Environmental
Economic
Transportation**

Implications on design

Workspace planning & Urban planning /design studies for knowledge based environments

Scale : Building



- **Space syntax Analysis:** Exploit differences in *spatial layouts, circulation systems, visibility, adjacencies, mean integration etc to maximize the probability of interaction.*



Scale : Precinct

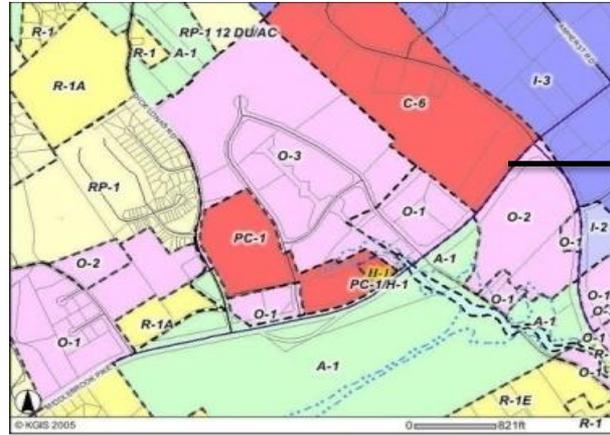
There are almost no studies looking at how to design interactive environments on an urban scale as required for KBUD.

Implications on design

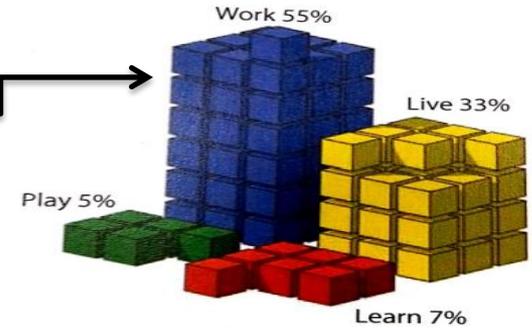


Single-use plan

Vs.



Mixed -use plan



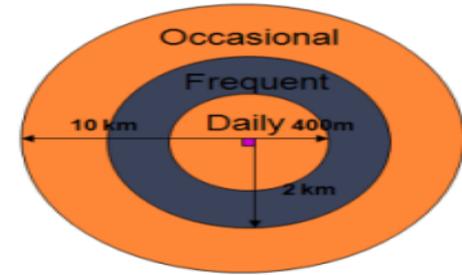
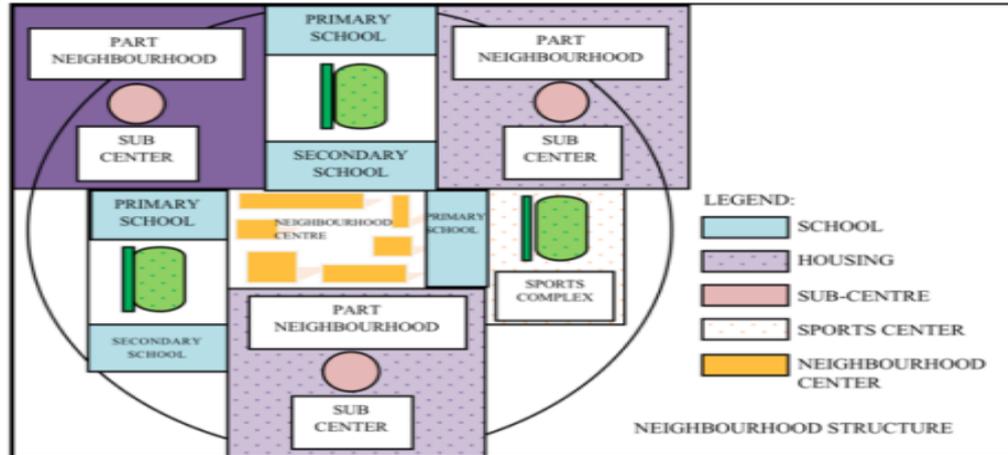
A mixed use design should promote “**knowledge**” interactions (planned and spontaneous)

This is achieved through complimentary zoning

- **Premise:** some actors have higher chances of interaction than others.

Implications on design

Design goals (criteria) are important for physical planning to take shape over time. Effective zoning can help actors share resources efficiently. It can prevent land use conflicts arising from different actors.



E.g. Housing Estates

- Reduce commuting costs
- Make amenities accessible by walk
- Social goals

- less pollution.
- Schools ,parks,retail etc.)
- fostering sense of community

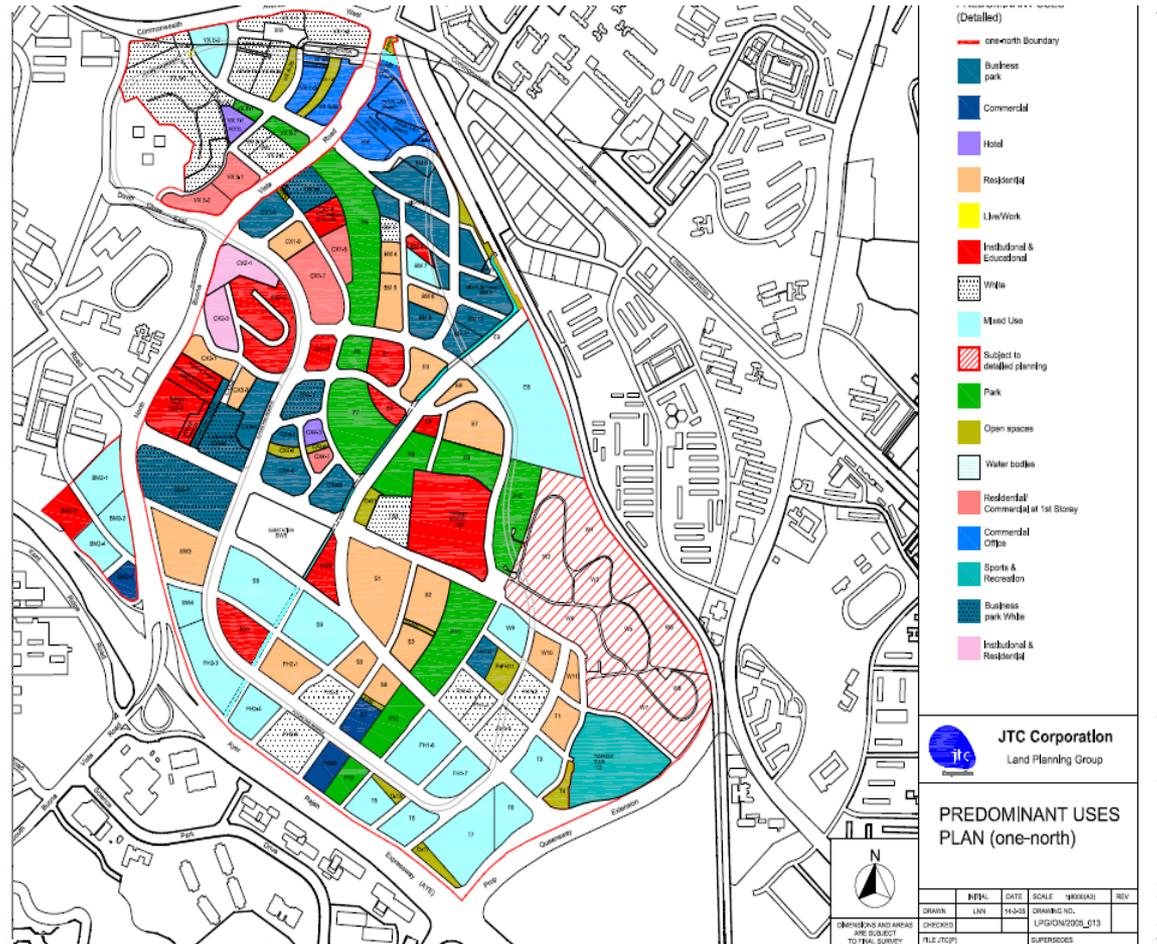
Digital Media city, Seoul, South Korea KBUD design



- a “*futuristic info-media industrial complex*”, has planned for a city street which is to host “*entertainment and retail establishments, technology companies, prestige housing, R&D institutions, and universities*”.
- The same street supposedly would host leisure activities such as “*theatres, cafés, stores, nightclubs and LCD screens as big as whole buildings*”.

One North KPUD model

one-north is a 200 hectares (490 acres) Singapore business park developed by JTC Corporation for the R&D and high technology cluster, comprising biomedical sciences, infocomm technology (ICT) and media industries. Though the development was first conceptualized in the National Technology Plan 1991, it was only launched officially in 2001



Four constituents of urban development



Creativity and innovation as key drivers

Among the four constituents, 'creativity, innovation and economic vitality' is maybe most important as it refers not only to the economic base of the city but it also propels the generation of solutions to large urban problems in the other constituents.

Six related policy lines are usually adopted in urban policies to enhance urban creativity and innovation, and these now start to be increasingly criticized for their limited impact and/or undesirable side-effects.

None of these six policy lines resides exclusively in one of the four constituents of urban development but all lines connect interactively between them.

1. Creative Knowledge workers and Urban amenities

Economic success is related to the ability of a place to attract the creative class, and that 'quality of place' is a key determinant

Members of the 'creative class' are thought to prefer lively and mixed environments, top-quality urban infrastructures and cultural facilities



Toronto (Canada)



Seville (Spain)



Milwaukee (US)

2. Triple Helix formation

City and regional governments increasingly regard higher education institutes, particularly universities, as sources of growth and prosperity.

As the European economy since the early 1980s made the shift towards an economy that is more reliant on knowledge, innovation and skills, national policy makers started providing incentives to a stronger relationship between universities and the economy.

Urban planners consider universities increasingly as catalysts for the regeneration of urban areas, thereby also recognizing the economic significance of the student population

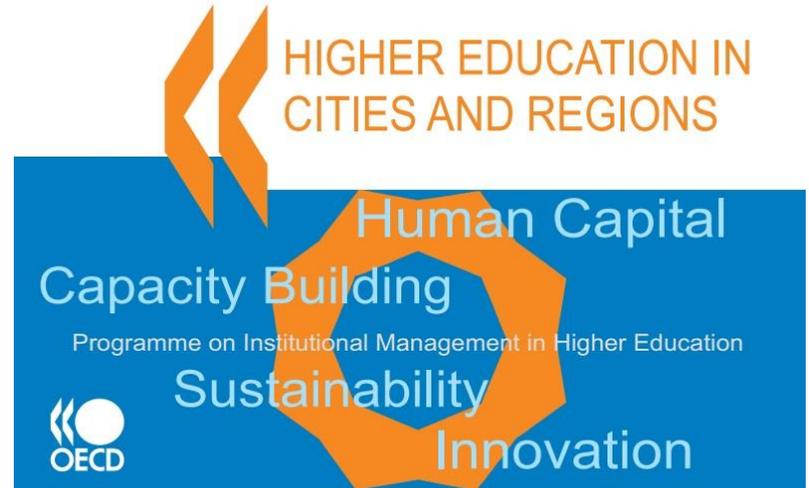
2. Triple Helix formation

The benefits of universities are multifaceted.

To increase such benefits is a global trend today and is supported by the OECD in recommending cities to make more out of their knowledge base and improve a smooth triple helix interaction of universities, government and business

Criticism

The common barriers to such an interaction – mostly covered by the term **fragmentation** – are, however, not sufficiently addressed in urban policies like competing instead of collaborating universities; a complicated policy situation due to adjacent cities of different size, economic structure and ambition; universities without a match with the surrounding city and regional economy



2010

3. New trends in spatial design

Several cities have invested in landmark architecture and other 'grand projects' to underline their ambitions as a 'knowledge city'

Seville may again serve as an example with the **Metrosol Parasol** as a showpiece of new architecture: six connected large timber parasols that shade the central square and protect archeological remains. An interesting manifestation of the knowledge turn in urban policy is the trend to link knowledge-based activity to urbanity



3. New trends in spatial design

An increasing number of cities seek to create or foster 'knowledge quarters' or 'creative quarters' as an integrated part of the urban fabric, or attempt to 're-integrate' campuses at the edge of cities

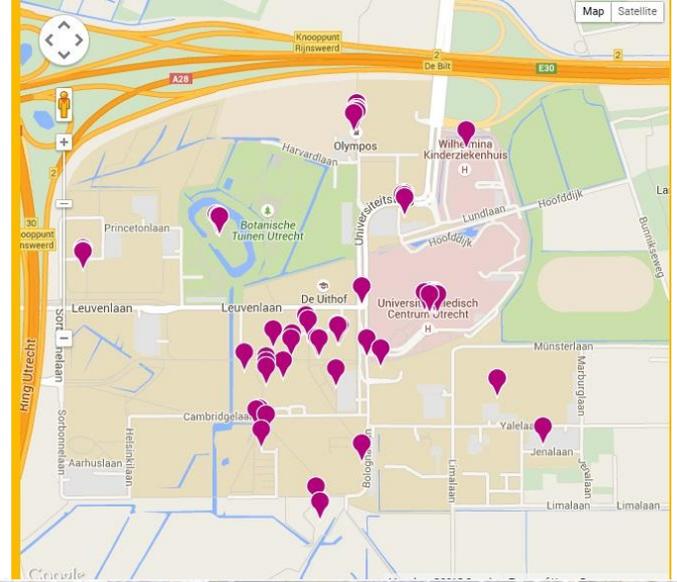
- The last trend is exemplified by the city of Utrecht (the Netherlands) where the university was relocated to a single function site (De Uithof) outside the city in the early 1970s, but where, since the mid-1990s, a multi-functional campus and science park has emerged as an integrated part of the city.

The logo for Utrecht Science Park consists of three stacked lines of text. The top line is 'UTRECHT' in a grey, sans-serif font. The middle line is 'SCIENCE' in a multi-colored, sans-serif font where each letter has a different color (S: red, C: orange, I: yellow, E: green, N: blue, C: purple, E: pink). The bottom line is 'PARK' in a grey, sans-serif font.



UTRECHT
SCIENCE
PARK

Utrecht neighbourhood De Uithof in
which the Utrecht Science Park (USP)



4. Creating Knowledge identity through Branding

The identity or image of a city – recognized as a significant 'soft' location factor for knowledge-based firms and people, is increasingly deployed in marketing and branding techniques to change it towards the 'right' direction

Cities typically seek to associate themselves with knowledge and creativity, thereby stressing the quality of local knowledge assets, such as students, a skilled labor force, universities

Copenhagen (Denmark)

Bilbao (Spain)

Dublin (Ireland)

4. Creating Knowledge identity through Branding

Qatar Airways has kicked off a search for a global advertising agency to promote its strength in key regions around the world

It wants the appointed shop to produce ads to run in countries where the airline flies to more than five cities, including China, India, the US, Saudi Arabia, Australia, the United Arab Emirates and the UK.

Activity includes print, radio, outdoor, digital, direct mail and point of sale



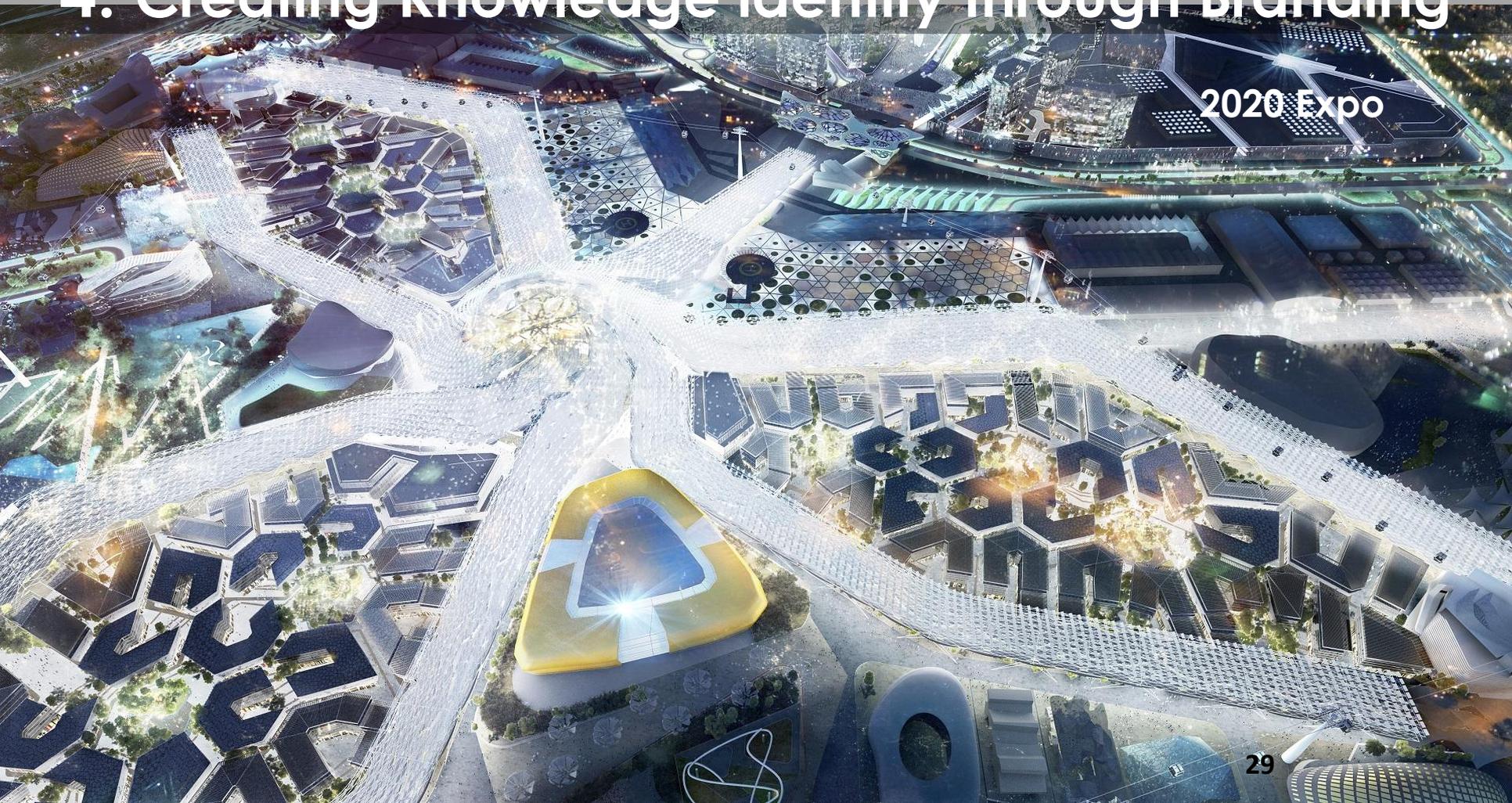
4. Creating Knowledge identity through Branding

Mega events are used to support and sustain the urban image as knowledge city or creative city. Industrial cities work especially hard to bridge the 'perception gap' between a creative knowledge city and a polluting manufacturing industry town

Criticism

What makes 'branding' difficult and not easily successful is that it needs to be original to a certain extent but it need also to be derived from a sufficiently common identity of the city, and it needs to work convincingly and be persuasive to the outside world

4. Creating Knowledge identity through Branding



2020 Expo

4. Creating Knowledge identity through Branding

Equidistant between Abu Dhabi and Dubai, our venue site will be serviced by three international airports and a world-class road and transport system to ensure ease of access and seamless operations for both participants and visitors



4. Creating Knowledge identity through Branding

Master Plan legacy

Prior to the design of the Expo master plan, a strategy was developed for the usage of the Expo site after the Expo has finished which will see it transformed into a world-class conference and exhibition centre.

Expo 2020 Dubai will be a catalyst for the development of a mixed-use land development and a thriving community, ensuring a strong legacy after the completion of the Expo and taking advantage of some components of Expo 2020 Dubai.



5. Social Capital

Social capital is one of the 'soft factors' in creative city development that is highly difficult to understand.

Origin and creation of social capital are not well understood. In some cities, it is simply there and in other ones it needs to be carefully build

The process of building depends on :

Size of the cities

Different fabric of networks derived from different ways of doing business, cultural habits, and industrial traditions.

5. Social Capital

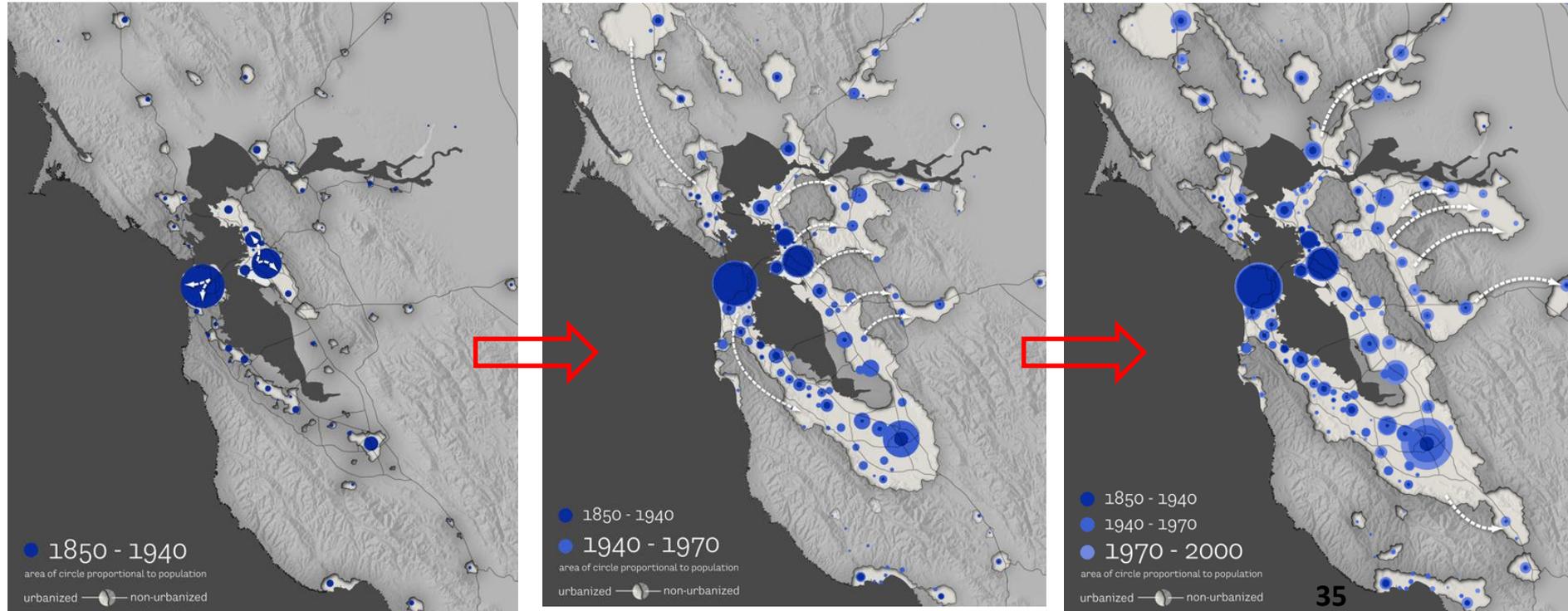
It is considered fairly important for creative city development in increasing community-building and civic engagement, in restoring cohesion, and in getting 'changes' from the ground, for example, in sustainability issues

Silicon Valley can be seen as a vital network 'city' built on social capital, but it is a different type of social capital than that in civic engagement as indicated above. In Silicon Valley, social capital is anchored in collaborative partnerships that emerged due to common innovation and competitiveness goals among economic and institutional actors. It is the networks resulting from these collaborations that form the threads of social capital in Silicon Valley.



5. Social Capital

These diagrams, drawn by an urban planner and GIS specialist at AECOM, show changing settlement patterns of the Bay Area as it progressed from a monocentric region clustered around San Francisco to a polycentric one with contiguous growth along highway corridors and spilling over the hills to areas "off the map."



6. ' Hard factors '

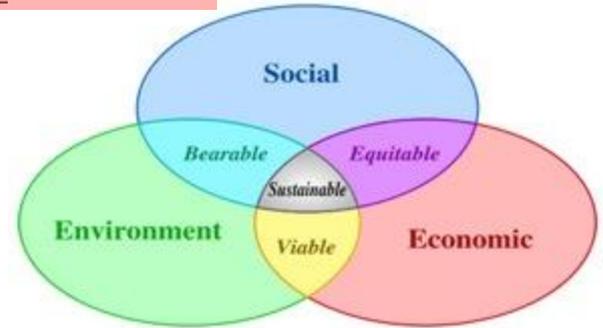
The importance of 'hard' factors in creative urban growth has already been emphasized in the mid-1990s, particularly in terms of fast and reliable corridors of transport and communications infrastructure

'Hard' factors include basic infrastructures to connect knowledge cities physically and virtually with cities in the region and around the globe

Knowledge Urbanism & Sustainability

Economic and organisational benefits

Creation of more rewarding and well-paid employment;
Faster growth in community's income and wealth;
A more sustainable economy, by technological innovations and off-shore investment;
Revitalization of traditional industries;
A boost to the city's pride and confidence for the reinvestment of local capital into the local economy;
Promotion of measured risk taking that helps build an entrepreneurial culture;
Creation and innovation are central elements of its development; and
Constant connection between universities, enterprise and creators.



Social and cultural benefits

Greater opportunities to share the wealth through investment in the public domain and better funding of social safety nets;
Creation of knowledge communities that will provide 'just-in-time' knowledge when it is needed;
Better education services and network of school connected;
Creation of a tolerant environment towards minorities and immigrants;
Leader in cultural production and the culture industry
Instruments that make knowledge accessible to citizen; and
Access to the new communication technologies for all citizens.

Physical and environmental benefits

Leader in the incorporation of premise of the digital area;
An urban design and architecture that incorporate the new technologies;
Uses and exploits its monumental, architectural and natural heritage as an attractiveness factor;
Improved capacity to enhance and repair natural and built environment; and
Greater community commitment to environmental decision making.

Relevance to Qatar

Qatar is the first Gulf country to adopt a knowledge economy as a conceptual base for its 2030 vision. The vision suggests four pillars for a more developed and prosperous Qatar. Sustainable development is a core element in this vision. Historically, Doha, Capital city, was a fishing and pearl diving town. In the present day, the city is home to more than 90% of the country's 1.7 million inhabitants.



Human Development

Development of all its people to enable them to sustain a prosperous society.



Economic Development

Development of a competitive and diversified economy capable of meeting the needs of, and securing a high standard of living for, all its people for the present and for the future.

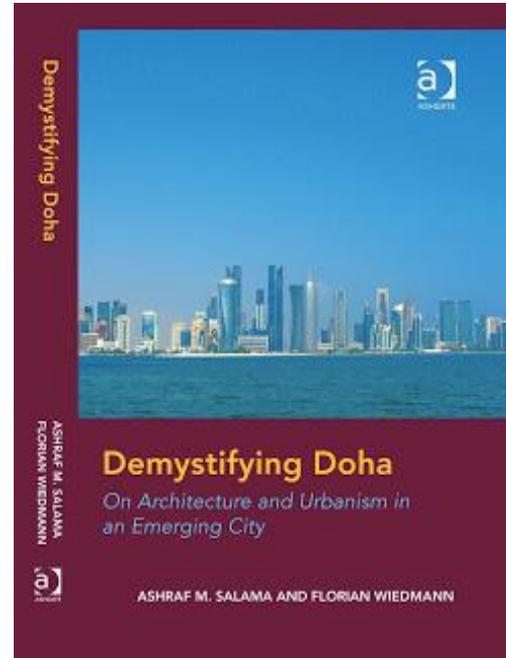


Social Development

Development of a just and caring society based on high moral standards, and capable of playing a significant role in the global partnership for development.

Environmental Development

Management of the environment such that there is harmony between economic growth, social development and environmental protection.



“The city of Doha is a unique ongoing Urban experiment busy reinventing and rebranding itself”



Relevance to Qatar

Human Development

An Educated Population



الصندوق القطري لرعاية البحث العلمي

Qatar National Research Fund

عضو في مؤسسة قطر

Member of Qatar Foundation



مؤسسة قطر
Qatar Foundation



Relevance to Qatar

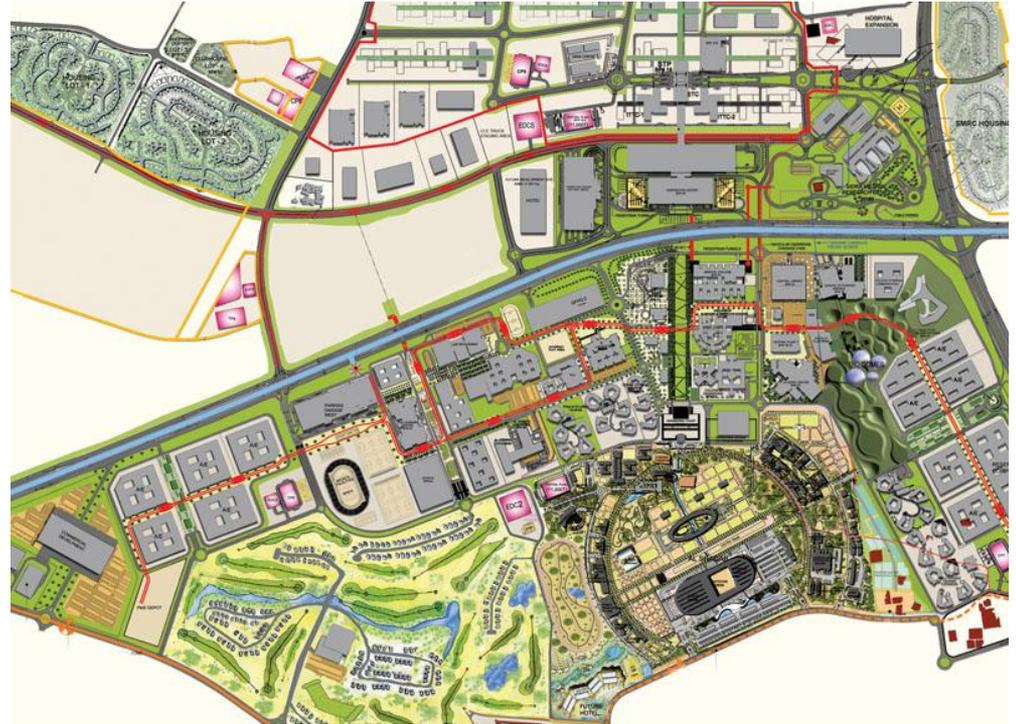
- Creation of knowledge-based cities lies in three interrelated processes that create and transfer tacit knowledge, [which are]
 - local knowledge creation
 - transfer of knowledge from external sources
 - transfer of that knowledge into productive activities.



Relevance to Qatar

Education city :

1. Virginia Commonwealth University
2. Weill Cornell Medical College in Qatar
3. Texas A&M University
4. Carnegie Mellon University
5. Georgetown University School of Foreign Service
6. Northwestern University
7. HEC Paris
8. UCL



Relevance to Qatar

Economic Development Outcomes (cont.)

Suitable Economic Diversification

- ◆ A knowledge-based economy characterized by innovation; entrepreneurship; excellence in education; a world-class infrastructural backbone; the efficient delivery of public services; and transparent and accountable government



FIFA World Cup
2020

Olympic Bids for
2016-2020

Global sports
channels



Building towards the World Cup will inject a new dynamism into the drive by Qatar, and the region, to diversify its economy away from its dependence on oil and gas.

Almost US\$ 60 billion-worth of projects that were planned will now definitely happen as a result of this success, giving a decade long boost to the state's projects industry that had reached a peak.

Challenges

- National economic development receive more attention from free market scholars than **land-use regulation**
- Importance of the urban development process that provides the space where **entrepreneurship** takes place.
- In a free market, cities will continuously move toward an equilibrium in which they are best suited to meet the needs of their residents, but land use regulations put a stop to this process. Because cities provide the spatial component of entrepreneurial learning, preventing these marketplaces from improving over time comes with a high toll in economic growth. Like markets, successful cities grow, but they cannot be made

Conclusion

1. KCs are becoming fundamental to the economic growth and development of the 21st century cities
2. They create, develop and 26 maintain new technologies for emerging industries, and also contribute to an improved quality of life and culture within the city
3. Large international technology companies are vital as they play a catalytic role in the expansion of the KC by maintaining relationships with major research universities, and becoming a source of talent for the development of new companies. These companies also contribute to job creation and indirectly support an affordable quality of life

What does knowledge Urbanism requires from us ?

It requires visionary power, creativity, holistic thinking, the willingness to cooperate with all groups of the local civil society, and the capability to moderate communication processes to overcome conflicts and to develop joint action for a sustainable future

References

- Doucet, I. (2011). *Transdisciplinary knowledge production in architecture and urbanism towards hybrid modes of inquiry*. Dordrecht: Springer
- The Use of Knowledge in Urban Development. (2013, November 15). Retrieved April 10, 2015, from <http://marketurbanism.com/2013/11/15/the-use-of-knowledge-in-urban-development/>
- Secchi, B. (2001, December 4). Knowledge. *Planum*.
- <http://www.europeanfinancialreview.com/?p=1627>
- Barcelona City Government (2003). Culture, The Motor of the Knowledge City: Strategic Plan of the Cultural Sector of Barcelona. Barcelona, Steering Council of the Strategic Plan of the Cultural sector of Barcelona.
- http://www.gsdp.gov.qa/portal/page/portal/gsdp_en/qatar_national_vision/qnv_2030_document/QNV2030_English_v2.pdf
- http://www.theworkfoundation.com/assets/docs/publications/208_ideopolis_education061208.pdf
- http://expo2020dubai.ae/en/road_to_2020
- <http://www.europeanfinancialreview.com/?p=1627>
- <http://eprints.qut.edu.au/46970/2/46970.pdf>

Thanks for your attention

