



## Future of the ‘Street’: Reading from William J. Mitchells’s City of Bits

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**Abstract** - In the end of twentieth century starting with 1970s, the world was introduced to a brand new concept of digital communication and information system. It is obvious that developments in computer technology have caused rapid transformations in various fields including technology-based processes and related daily activities [1]. Especially with the invention of the internet, the transformation accelerated. In this article, –focusing in the field of architecture–it was questioned how this new concept reconstructed the way of designing, perceiving and experimenting the space. In a larger –urban– scale, what is public and what is private were being questioned. One of the public city elements;–a place,space is allocated for both public and private use,for buildings and for open spaces [2]– ‘streets’ will be transformed into what? To realize the future of the city transformation, William J. Mitchell’s City of Bits: Space, Place and the Infobahn [3] was the key source of this research, and relative references supported as well.

**Keywords** - City of Bits, digital communication, street

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### 1. Introduction

The book ‘City of Bits: Space, Place and the Infobahn’[3] posits some of the social, legal, and philosophical consequences of revolutionary advances in electronic communication and computer technology. Mitchell addresses the impact that the electronic information highway is making on traditional definitions of space, time, and human interaction. The Internet challenges old ways of viewing “workspace,” “homespace,” and “cityspace” and demands a redefinition of architecture and urbanism for the twenty-first century [4].

Before focusing on the book, let us check the situation depending on sociology and its effects to societies. We may consider the revolution of agricultural society and then *industrial* society to *informational* society happened in around 1970s.

In sociology, industrial society refers to a society with a modern societal structure. Such a structure developed in the west in the period of time following the industrial revolution. It is argued that we are located in the middle of a transformation or transition from industrial societies to post-modern societies. The triggering technology for the change from an agricultural to an industrial organization was steam power, allowing mass production and reducing the agricultural work necessary. Identified as catalyst or trigger for the transition to post-modern or informational society is global information technology. Depending on that an informational society is a society in which the creation, distribution and manipulation of information is a significant economic and cultural activity. Information technology is not only internet, and there are discussions how big the influence of specific media or specific modes of production really is [5].

Development of worldwide telecommunications infrastructure began in 1837, when the telegraph was demonstrated and patented. The telephone followed in 1876. Long-distance telegraph and telephone networks had developed by the dawn of the twentieth century. By the 1950s extensive analog telecommunications networks employed wire,cable, and microwave links together with crossbar switching technology. Fiber optic cables became increasingly commonplace in the 1980s. By mid 1994 Internet can be accessed from homes, and it was clear that

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existing, largely separate, telephone, radio, television and data networks would eventually evolve into a worldwide, broadband digital service [3].

Fiber-optic network system is analogically the *street network* of 'cyber' world, so called *infobahn* and reconfiguring space and time relationships in ways that promised to change our lives forever [3]. With the use of internet, you don't need to go to work anymore, or shopping, or hanging out with friends, or many other daily life routines. Going outside is when you really want to be socialized, physically *to be* with someone. Mitchell points out that homes will be places with network addresses as well as street addresses. The functions of the various interior spaces will be established. And, as networks and information appliances deliver expanding ranges of services, there will be fewer occasions to go out [3].

## 2. Streets

Streets are not the dividing elements within the city. They are to be communal rooms and passages.

*Pattern* – A single given street is always to be part of a street network [6]. Connectedness and continuity of movement within such a network will encourage the mixing of uses in the city.

*Hierarchy* – There is to exist a variety of streets based on their pedestrian and vehicular loads.

*Figure* – The architectural character of streets is to be based on their configuration in plan and section [2].

## 3. Networks

The most significant of all opportunities that the developing computer technology is the concept of networking. In order to share the sources (software), information and hardware, a domain of computers are connected to each other. Connection provides data transfer and communication, with such tools as direct cable-to-cable connection, fiber optic cables and infrared connections, utilizing radio transmission instead of any physical device. Networking had presented a new medium to interact [1].

Consequently, the digital revolution of the networking technology offered new ways of communication and socialization. It is a new medium, occupied by a community which has a different sense of communication, socialization and visualization, so a different perception of space.

It is now a network community. Although the participants of this community are the same, the network community has a different inner structure. Logging on the network, the participants transform themselves into faceless identities [1].

Mitchell reminds us to update Churchill's bon mot: Now we make our networks, and our networks make us.

"Click, click through cyberspace; this is the new architectural promenade" [3].

The worldwide computer network, subverts, displaces and redefines our notions of gathering place, community, and urban life [3]. MSN Messenger is my usual gathering place with friends, who are America, Italy, England or all over Turkey. When it is kind of impossible to meet in one 'physical' place with all those friends, internet became an alternative way of keeping in touch. As in city scale, it will play a crucial role in twenty-first-century urbanity as the centrally located, spatially bounded, architecturally celebrated agora did in the life of Greek polis [3]. At an urban scale, streets and public places interconnect buildings. Classical architects of the eighteenth and nineteenth centuries handled the task of putting spaces together by creating hierarchies of great and small spaces around axial, symmetrical circulation systems connected to grand, formal entries and public open spaces. With the aim of being as logical and efficient as possible, functionalist modernists of the twentieth century have often derived their less regular layouts directly from empirically established requirements of adjacency and proximity among the necessary spatial elements.

But when telecommunications through lickety-split bits on the infobahn supplements or replaces movement of bodies along circulation paths, and when telepresence substitutes for face-to-face contact among participants in activities, the spatial linkages that we have come to expect are loosened... we will find compelling advantages to putting together spaces- like living spaces and work space- that were once thought to belong in different buildings located in different zones of the city. In any case, the old bonds break down and new groupings can begin to form [3].

Peter Anders explains the contributonal relation of architecture to cyberspace with the following words:

“The architectural metaphor of cyberspace validates the designer’s work: just as spatial cues help to orient us in a real building, they also offer a visual structure for abstract information, revealing relationships and hierarchy. Although cyberspace will never replace traditional architectural work, the electronic realm opens up a huge territory for architectural expertise at a time when conventional career paths are hard to find.” [7].

So what is it that, architects should derive from the book? There are serious problems that might occur, because of this juxtaposition of real-world phenomena and their cyber equivalents. It most probably will cause human disorientation and alienation as the machines take control. Martin Pearce answers the crucial question:

“The message for architects is to realise how these changes will affect what we do and to engage ourselves in designing the city of bits.” [3].

How the architects will adapt the designs to the rapidly changing electronic world? How will the elements of a city will be affected from it? As the life changes, can they keep their form or function as it is? As an example library shelves are becoming data servers and art works are digitised and exhibited in virtual galleries [3]. In Magill’s Literary Annual, it is addressed that such institutional and social functions are being severed from physical architecture in the world of communication [8]. So is it the same space to read a book or enjoy an art work, that we need as before? Probably not. The question is how should the architectural elements be designed, flexible in a way, to be adaptable the new ‘cyber’ world. It is given as an example in the annual, that in British Museum London, centering library stacks around a large room, does not allow for electronic information servers of the future or the evolution of reading material from paper to computer screen [8]. It means our buildings are not ready for the necessary transformation.

In the book ‘City Of Bits’, it is argued that how digital technology is turning traditional architectural theory and planning upside down. According to the book’s review in Publishers Weekly; transcending geographic boundries, online communities and social contexts, offer new ways of thinking about urban design, private and public space, the separation of work and home life and personal identity [9].

The street network in a city was used to be the public interface between home-work, home-social life, home-home etc. But in its ‘cyber’ replica, World Wide Web (WWW) is an electronic network of streets providing access between one building and another, between one activity and another. As well, Multi-User Dungeons(MUDs) are electronic neighborhoods in which residents create their own personas or characters in order to participate in on-line role-playing games [1]. As an example ,two people I know were married in the game ‘cyber’ life, infact their physical ‘world’ identities were sitting next in the class, without knowing each other. This sort of games are offering an ‘alternative’ life more than we can imagine and control as a human being.

There were there important issues that changed our level of perception of the world. One was the use of perspective - renaissance discovery of perception- , second was the invention of the camera which was an alternative to the eye level perception with different angles and different heights, and the third was the speed. It was a measurement system in terms of *walking speed* related to human, later become *car speed* related to vehicles, then soon transformed to *internet speed* related to computers;

*Walking speed:* Man power is used. Speed is average 5 km/hour, 120 steps in a minute.

*Car speed:* Vehicle power is used (named as horse power). Speed is average 60 km/hour.

*Internet speed:* Electricity and modem connection is used. Speed is 100 mbps (megabit per second).

How does this change in ‘speed’ concept results? How does the physical affected?

One such transformation concerns human perception of space. On the Internet, spatial becomes antispatial. Face-to-face contact yields to forms of communication in which location does not matter.

#### 4. Conclusion

We use our 5 senses; seeing,hearing,touching,smelling and feeling to perceive an object. City of Bits suggests a different ‘cyber’ world, which is senseless. The only sensing organ active is the ‘eye’, fingers help eye to see. This new phenomena is a new perception of world, without the help our sensing organs. Then how do we ‘perceive’ now,

without our most used instruments. Are they going to die? Is it only 'eye', which will exist in the next generation? Is it the evolution human facing in the world of City of Bits? Is it end of human being?

While you are imprisoned to your computers at home, you may travel Champs Elysees, enjoy the city from bird eye level and come back without paying a bit. Or make your reserach from a library, download your documents, read them. Chat with your friends, and your family in MSN, invite them to a game for fun. Buy your ingredients for tonight's dinner. Why do you need to go outside? Our public life, street network, is still existing physically for what purpose? Is the City of Bits, destroyed the infrastucture of the street life? What is left for us to be 'social' again?

## References

- [1] Karabag, K., "Absolute space: MUD, a reconceptualization of architectural space", Master Thesis, *Middle East Technical University*, Ankara, 2001.
- [2] Moule, E., Polyzoides, S., "The Street, the Block and the Building", *The New Urbanism: Toward an Architecture of Community*, Katz, P., *McGraw-Hill*, New York, xxi-xxiv, 1994.
- [3] Mitchell, W.J., "City of Bits-Space, Place and the Infobahn", *The MIT Press*, Cambridge, MA, 1996.
- [4] Thomas J. Sienkewicz. "City of Bits." *Magill's Literary Annual 1996*. Salem Press, 1996. eNotes.com. 2006. <http://lit.enotes.com/salem-lit/city-bits>, Mar. 2007.
- [5] Wikipedia, The Free Encyclopedia, MUD: <http://en.wikipedia.org/wiki/MUD>, Dec.2006.
- [6] Ozbek, M.O., "Accessibility Patterns of Istanbul's Hans Region as a Traditional Urban Trade District", *Sustainable Development and Planning VII*", *WIT Transaction on Ecology and Environment*, Vol. 193, 2015.
- [7] Anders, P., "The Architecture of Cyberspace", *Progressive Architecture*, v.75, October ,p. 78-81, 1994.
- [8] Bodies in Antispace: Mitchell's City of Bits, Linda Kim, <http://www.scholars.nus.edu.sg/cspace/cspace/cityofbits/kim.html>, Dec.2006.
- [9] [9] City of Bits: Space, Place and Infobahn (Book Review), *Publishers Weekly*, CXCVIII, October, p.96, 1995.