INTERROGATING TIME, SPACE AND PLACE WITHIN TECHNOLOGICAL APPROACH

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ABSTRACT

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Technology was and is the most powerful tool, humankind used to develop civilizations and improve the quality of their environment and life. Beside this fact, humankind comprehends and creates solutions in their physical surroundings like buildings, vehicles and clothes. This process of creation relies upon certain factors as necessities, search of variation and evolution. As technology evolved when covering necessities and demands, the relationship between physical environment and humankind has changed respectively like bridges or space shuttles. Since information age began with emerging computer technology, this change in relationship has peaked to a different level where physical environment is slightly replaced with virtual interactions through computers and other various devices. Here, in cities where technology has distinctive marks on, this effect can be tracked through citizens' everyday life and from the use of urban spaces. The alternating interaction routine of people from physical environment to space-free virtual space has resulted with lacks in using urban space that are the communication spaces of the city. The aim of this study is to paraphrase the evolution of this transformation from literature and designate potential trails to approach this problem by exploring global practices.

ÖZET

ZAMAN, MEKAN VE YERİN TEKNOLOJİK YAKLAŞIMLAR İLE SORGULANMASI

Geçmişten günümüze dek teknoloji; yaşanılan çevre ve yaşam kalitesini arttırmak için kullanılan bir araç olmuştur. Bu olgu ile birlikte insanoğlu çevresini anlayabilmiş; binalar, giysiler ve otomobiller gibi çözümler üretebilmiştir. Bu yaratım süreci; gereksinimler, farklılık arama ve evrim gibi faktörlere dayanmaktadır. Teknoloji, gereksinimleri ve talepleri karşılarken, insanoğlu ve fiziksel çevre arasındaki ilişki de değişmeye başlamıştır. Bilgisayarların hayatımıza girmesiyle başlayan bilgi çağında bu ilişki sıçrama yaparak fiziksel dünyanın, bilgisayarlar ve diğer araçlarla sağlanan sanal ilişkiler ile yer değiştirmesi sonucunda farklı bir süreç izlemiştir. Teknoloji kaynaklı gelişimlerin etkilerinin en belirgin olarak takip edilebildiği kentlerde bu durum, kentsel ve sosyal iletişim alanları olarak tanımlanan kentsel mekanların, insanların mekan-bağımsız servislere yönelmesi sebebiyle, daha az kullanılması ile sonuçlanmıştır. Çalışmanın amacı, insanoğlu ve fiziksel çevre arasında teknoloji odaklı gelişen ve değişen bu sürecin literatür üzerinden açıklanması ve bu sürece dünya örnekleri incelenerek ortaya çıkarılan yaklaşımların geliştirilmesidir.

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CHAPTER 1

INTRODUCTION

Information and Communication Technology (ICT) developments influence cities and urban spaces in social, cultural and physical terms. Under the globalization process, the economic and political background of any nation and/or a city, the structural formations of society are transformed and ICT is one of the most influential components of this process, being the tool of connectivity and information exchange. People are getting used to communicate, work and shop through these new mediums. Inevitably, the urban life and thus, urban space transforms itself with the social and cultural impositions of globalization. The transformation of the built environment caused by the interaction of ICT and globalization takes place mostly in metropolitan areas, since metropolitan areas are more willing to provide necessities of ICT for the spaces of flows and the space of places. Space of flows is a term introduced by Manuel Castells. According to Castells; "the space of flows is the material organization of time-sharing social practices that work through flows" (Castells 1996, 412). In other words, space of flows can be defined as synchronous flow of information through virtual spaces or networks for real-time interaction in different social groups without physical proximity. By the space of flows, geographically unrelated places can exchange, process, manage, distill, manipulate, and/or share information. On the other hand, spaces of places refer to the physical world of society. According to Castells (1996), space is a product of relationships with other products, including people whose background positive meanings to form and function of material spaces.

The individual is simply living in a non-place, a space away from its local assets and characteristics, of sharing global properties and forms. Marc Auge, the originator of the term "non-place", explains this situation as the place can be defined as relational, historical and concerned with identity, then a space which cannot be defined as relational, or historical, or concerned with identity will be a non-place (1995).

Looking at the individual experiencing the environment, city services has evolved from traditional type, which demands such processes involving F2F contact and human interaction, to ubiquitous, which information delivered to anywhere at any time. Basically, this individual experiences desired actions free from its surrounding. So, the environment individuals are living in can be defined as non-places. The terms, space of flows, spaces of places and non-places are crucially important as they can directly be linked to ICT, globalization and urban space transformations that take place. Modern life has been affected in various dimensions since technology emerged rapidly in last few decades. The up most effected actions have been realized in communication and transportation. Emerging technologies resulted with the transformation in sense of place and time. Locality and its places are no longer as important as in the past, when the spaces become more identical. Present, we have airports and hi-tech communication tools, which provide to meet anything or anybody in anywhere at any time. For Castells, it is the 'space of flows' which is a part of logic of globalization that is detaching itself from the social constraints of cultural identity and local society (Castells, 1989).

The globalization originates identical with ICTs and besides, locality is the basis of the global properties which are created by the individuals in the geographical and cultural environment. Surely, the future of cities and modern life will be supported by such technologies and services easing our lives, which remains the embodiment of ICT and the physical environment inevitable. The purpose is to maintain and develop locals as the origin of variety and dynamism. As Pacione (2009), summarizes globalization involving both an intensification of worldwide social relations through time–space compression of the globe, and local transformations involving enhancement of local identity as well as of local consciousness of the world as a whole.

Among these factors, there are any direct links between ICTs and spatial structure. ICTs stand for nothing else but being a tool of distribution of information. The more services are getting ubiquitous, the higher and intense individualization gets, as participation diminishes between individuals e.g. online shopping services, personal gaming platforms. This research underlines the importance of the local character and scrutinizes the potentials of how to embed ICTs into local properties. The question is that; will the traditional life styles and/or forms be changed by emerging new conceptions of communication. The answer would be no, as individuals are creatures of

experience, share and interrelation in an informational manner. In other words, time and information could not be thought separately from our surrounding. Environment and individuals evolve over time, satisfying their necessities, but they intend to keep their essence which derives from culture, geography and society. So, in order to sustain a well-working embodiment that keeps and develops the local opportunities and characters, reorganization will be necessary for design and implementation of the city services developed with ICTs.

1.1. Conceptual Framework

The process of the research study is explained five stages. Every part explains and extends the work to conclusion and evaluation of the study. The aim of the study is to investigate the impacts of the contemporary 'technology' understanding, services and applications on urban life within both social dynamics and built environment interventions. In first part, 'technology' will be defined to clarify the understanding on this term. Then, major application areas of technology, those of which are architecture, transportation, communication, will be delivered and explained.

Additionally, computer technologies will be introduced as it is utilized in most of present technology application areas and in general uses. In Chapter 2, the interaction and affection of technological developments will be scrutinized within social and urban issues as they compose the settlements we live in and provide to be a community and communication. In social impacts, the results in social life due to the shift in technological developments and change in understanding of technology will be investigated.

On the urban side, the change in the contextual change and future predictions about built environment will be explained, like in non-place theory which assumes the loss of social dynamics and integrity over physical environment would cause in vanishing identities of places. In Chapter 3, certain design approaches to ICT-based applications and processes will be scrutinized. From this point, the assessment of these approaches set a proper base up for composing an appropriate aspect to manage convenient solutions in relation between technology concept and urban structure.

Regarding to the outcomes of the former part, the progress of the study will track on examination of worldwide examples. In last part, a further study will be performed in

selected area to exemplify possible attitudes in creating solutions or in defining strategies for defined research problem.

1.2. Methodology

The research problem is built up on the assessment of the interaction between 'technology' and urban context and developing a proposal for creating interactive environments with these two facts. The study is processed in three stages, each of which have its own structure and advance to entire work. The progress of the chapters will involve following questions and research methods respectively.

In Chapter 2, the understanding of the term 'technology' is delivered. These definitions and concepts are compiled from contemporary literature and web-based sources. In this chapter, the aim is to answer what 'technology' means and what processes does it involve.

Next part focuses on the certain design approaches to ICT-based design processes like augmented spaces, ubiquitous computing and digital spaces that provide necessary theoretical ground on which the research study develops. Here, contemporary information about these processes is derived from literature review. Beside, introduction and evaluation of most popular worldwide examples supply better understanding on satisfactory practices. Worldwide examples will be scanned within certain concepts which correspond to design approaches. These concepts will also help in further study phase to understand and assess the area better. Further study epitomizes former literature reviews and assessments of examples to develop a proposal design for interactive built environment with ICTs. Exemplar strategy is introduced with three-dimensional drawings, perspectives and reports to visualize it as a sample to illustrate potential applications that can be realized in case study area.

CHAPTER 2

TIME, SPACE AND TECHNOLOGY

In this chapter, technology and its impacts on social and urban environment are scrutinized. In first part, the definitions of the term 'technology' will be delivered to clarify the understanding of the term. Later on, the concept of 'technology' is explained within certain dimensions and crucial points in understanding the term. Second part introduces a recent era when the term 'technology' has transformed into a new cover. The era of machinery, shortly 'The Industrial Revolution' declared a new understanding with the change in production and marketing processes that trails in mostly every aspect from suburban to urban built environment. These changes are assessed within the concept of urban environment and how the components of cities have transformed by emerging ICT-based services. Proceeding two sections extends and inspects the impacts of technological developments in terms of social and urban subjects. The change of social structure due to the transformation of production and marketing processes have resulted in changes which effects conventional living life habits. Not only consumption or production – based economy took advantage of this social changes but it developed and thus created a new kind o knowledge that emphasizes this process as unitary and inimitable. In relation, the physical environment has been used by same logic to spread and exist everywhere and anytime. Since, social structure has been altered to a new understanding with various potentials which technology provided in both ways (for production, marketing and everyday-life) the necessities and lifestyle is transformed to rush these many potentials to relatively short time intervals. Hence, physical environment which is generated and empowered by social dynamism and context, disfavored and ruled out. The concluding part summarizes and evaluates social and urban impacts of technology to compose a basis for conducting a proposal.

2.1. Definitions of Technology

Technology represents most of the synthetic knowledge, which shapes and improves the life of human beings in all kinds of uses like architecture, transportation, etc. The concept of technology is devoted to the modern world when inventions, discoveries have rapidly developed; however, the origin in the creation of knowledge, which constitutes the basis of all modern world information can also named as "technology". There are many definitions of "technology" which involves specific definitions for variant topics. Although, the term is in a class of its own variation in meaning, explanations below represents an effort to display some of this variety.

Technology refers to all tools and procedures. It is the state of knowledge and development at any given time on controlling our surroundings, and includes all tools, all methods, and all applied materials. In the most general sense, technology is Man's ability to control Nature. In history line of humankind, the progress of controlling and developing the surrounding environment resulted with various branches to constitute civilizations. Although a generalized definition of technology can be extracted, many of its sub-classes have different processes and purposes. From architectural to military technologies, humankind developed services, tools, and methods to improve the efficiency of their relationship with the environment. Even in prehistory, human developed technology to satisfy their necessities or overcome their problems. Technology, which refers to the basic needs of humankind from prehistory to present has evolved and diversified like nanotechnology, aviation technology, and computer technology for specific purposes.

For the basic necessities like sheltering, hunting, survival, discovery or being community, humankind developed processes or tools those which firstly intended to serve basic necessities, latterly improved the way of living that leads to civilizations. Although there is not a certain comparison between these processes and the technology itself, we can match them with contemporary terms of technology like architectural technology for sheltering, transportation technology for migration or military technology for hunting.

Modern man differentiates from prehistoric ancestors in many points. Modern world hosts all the progress of technology and humankind interacts with many various branches of technology in everyday life. Although the basic necessities are same, the opportunity of the potentials variety provides or modifies the perception and interaction of humankind with its environment.

From the first hut to modern buildings or first wheel to automobiles, humankind improved their interaction with environment and developed their civilizations. While technology varied for specialties, humankind seeks for different opportunities in similar axis. Within this rhythm, technology always proceeded where human search for else. For example, architectural technology satisfied the necessity of sheltering and protection, however it proceeded in comfort and aesthetics. Similarly, transportation technology satisfied mobility, but it continues developing in speed, comfort.

Moreover, this concept did not ended up in varying specialties; it also transformed by meaning and perception by whom it is being developed. In contemporary world the term "technology", mostly refers to specialized areas, which works with electronics. In everyday life, individuals meet with various kinds of electronic-driven specialties classified as "technology" like in computer and communication technologies, aerospace technologies, biotechnologies etc. However, this classification represents only a limited understanding of the conception of technology, as it deals with the progress of knowledge that is used to interact with the environment. This contradiction precipitates a limitation in interaction and perception levels of individuals to their environment. Since, technology proceeded in various topics, some of which are directly affecting everyday life, individuals commenced to live mostly according to what technology served recently. Possible reason in the explanation of the shift in understanding "technology" can be found in eighteenth and nineteenth century when industrial revolution arises with machinery technology. Since then, this accelerating progress resulted major changes and transformations in various parts of human life.

2.2. Structural Components of ICT

In time, machinery technology emerged both the process of everyday life has shifted to more autonomous, expeditious and the interaction environment of individuals transformed into an adaptive form for the outcomes of technology. For example, nearly in 1900s first automobile has been invented, which triggered a new necessity for humankind, road to drive this invention. Industrial revolution, the sudden transformation in the process and volume of production caused a boost of population in industrial or commercial cities that latterly resulted in transforming architectural and urban character in those cities.

Leo Marx (1996) explains the change of the representation of "technology" within two major titles. The first one is the material factor; introduction of mechanical, chemical, electrical power systems, following with the development of hierarchical, large, complex systems like railroads, electric power systems. The second one is an ideological factor defining the idea of progress as a shift from enlightenment to more technocratic purpose of pure development.

The aspect of material reality of technological systems resulted with a distinction of mechanical arts and fine arts, which was formerly unified to define the interaction of humankind with nature. The political and economic hegemony controlling the production in new era, limited the understanding of progression and enlightenment to the mass production and machinery control. In this context, the existence of concept and human are faded away from the progression by serving the machinery age as labors.

Since industrial revolution, humankind developed technology in many specified and various topics. Not only they did widen the interaction level with their environment, but also they transformed their physical environment according to the developments. In eighteenth or nineteenth century, the speed in technological developments may have be synchronized to the speed of transformation of physical environment, however in twenty-first century, technological developments are so rapid and various that physical spaces cannot even catch up the basic necessities to adapt themselves.

Although exceptional examples began emerging in adaptation process, the dimension of technological developments shifted from pure interaction of humankind with its environment, to privatized tools or services, which deal with different elements than basic necessities. As a result, both the interaction environment and the social processes have been effected in this movement when the production era developed. The diversification of the technologies, in both organizational forms and production, provided acceleration in everyday life. David Harvey (1990) defines time-space compression, with the achievements in production by organizational shifts towards vertical disintegration, thus producing an increasing roundaboutness in production and in financial centralization. The progressive shift in production line surely effected the consumption where the accelerating mechanism provided new organizational forms to marketing.

Two of the developments are particularly dominant and important in total system. One is the mobilization of fashion in mass markets to gear up the pace of consumption in clothing, decoration and in services which spreads life-styles and recreational activities. The second one is the shift away from marketing goods to consumption of services like business, educational, entertainment and distractions. As the life span of this kind, services are far shorter than any physical good in consumption, the turnover and accumulation of finance will remain its dynamism and existence. (Harvey, 1990)

In the realm of production and consumption, speed is mostly everything as in fast food, disposable goods or instant services. Although it became common in present world, Alvin Toffler (1970) explains it as "throwaway society" of which the speeded up consumption affects not only the physical goods or services marketed but also values which individuals are engaged in daily life. This result may have been come up when the political, economical developments in production are arranged for society, which latterly ended up in unconsidered individual daily experiences. The more situations, opportunities are flowing in society at any interval of time, "the temporariness in the structure of both public and personal value systems" causes a fragmented society with diversified values.

In cities, the complex physical spaces of societies, the status is similar to the social changes. The leap in technology does not only effect the intangible organizations and systems. As the machinery technology developed, cities entered a massive transformation with various outcomes of this era. While emerging mass production increased population in cities, transportation, communication and architecture gained importance. Since industrial revolution, not only land transport, but maritime transportation and air transportation is also highly developed. As a result, cities adapted themselves to these developments by involving new roads, harbors and airports to the city. Different from the past, present cities are networked with arterials, highways and roads constituting linkages with surrounding regions. Similarly, airports and harbors are the connection nodes to global regions. The city itself also networked with different modes of transportation like metro lines, coaches, steamboats. This modes are the urban transportation systems delivering people, goods to almost anywhere of the city. The importance of nodes in transportation systems raise each day while population centralizes in cities. As distance to arrive increases and time remains constant. In addition, like other developments, technological progress continues and these examples gain speed to increase their volume. By the increment in speed and modes of transportation, cities get smaller and so as the world. Now people have to chance to travel in anytime to anywhere of the world in far much sooner compared to earlier stages of transportation. As shown below, people took advantage of the technological progress to widen their accessibility (See Figure 2.1)

Either for business or for life experience, travelling became usual. The change in the potentials of transportation technology not only affected the social life but also the life in physical environment. Since, transportation nodes like airports, train stations or harbors provided global access in larger scale; some passengers travel only on these nodes and never are in cities as others live. The lifestyle of this kind of people can be explained as travels between their home and workspaces. (Castells, 2004)
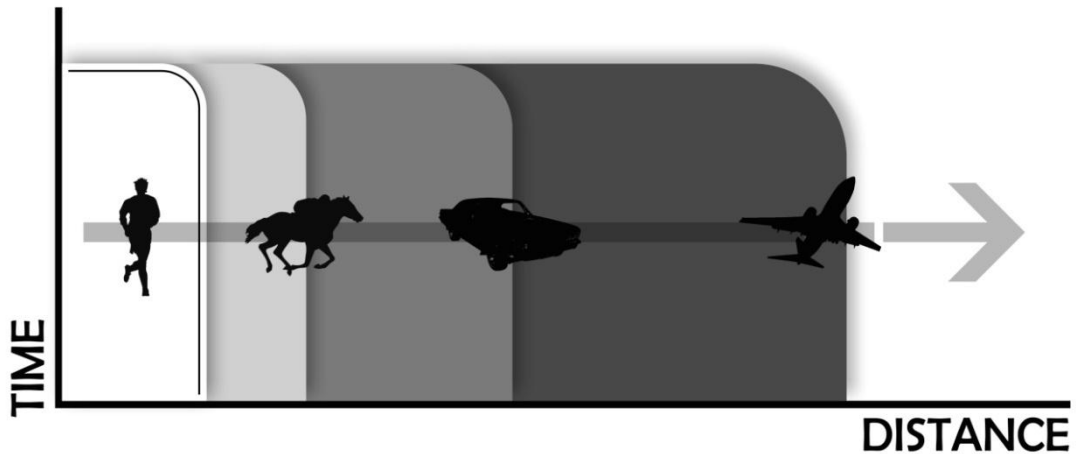
Figure 2.1. Increment of arrival range in same interval of time

Time plays an important role in their work and daily life, city centers no longer exists as a space for this group. The purpose of their lifestyle may be business related; however, the outcome of this process is the obsolescence of city spaces day by day. The physical environment of the cities transformed into a new form by the outcomes of the developments in 1900s. As population has drastically increased when mass production progressed and the necessity of employment emerged. Working class fulfilled the urban areas, with even creating new settlement areas. Both in city centers and in suburbs, physical environment evolved to enhance the capacity to host upcoming population. Since then, major cities that own excessive population transformed into a composition of high-rise buildings, mix use environments and networks of circulation. Although architectural technology provided high-rise buildings to host more population in limited area, the character of the streets has changed with the separation of the people from the ground. This high-rise environment caused not only a distinction between two basic elements of urban life but also affected urban context to evolve different from before. As the higher or bigger buildings needed in urban areas, urban context where people create memory or identity for spaces were replaced with large masses with unidentified spaces in between.

Communication technology has also evolved immensely in past century. Although Face2Face (F2F) relationship is still important, the opportunity of technological developments relocated the understanding of communication to another level. Since the discovery of telephone in nearly 1900s, communication technologies provided space-free connection to humankind. Although the distance was important at the early stage, present communication technologies made it global. In present, we can access everywhere we can by small mobile communication tools. The effect of this development resulted with a step down between the interaction social dynamics and physical spaces. Since people are provided to have accessibility in anywhere, the concept of gathering and communicating are no longer altering the potential of space-free communication.

Beside these developments, one addition has advanced to the everyday life of the world. The invention and progression of the computer technology has effected more than anything reviewed formerly. Although this technology has developed nearly in 1960s, its momentum has provided a new shift by any means almost in every topic in various processes. From natural science to art where computer applications took place, they shifted and improved existing processes to a new level. More, the concept itself evolved and created new working topics for themselves, as computers was invented to be supportive to existing studies. The opportunity of this technology has widespread all over the world. The capability and the speed of this technology were used to develop ongoing processes faster than before. However, increased volume of development separated the world, as we know to two realms as physical and virtual. Since the information and knowledge of the physical world processes are transferred through applications and physical documents, computer technology provided an opportunity to create, keep and transfer information in relatively small devices as "computers".

By definition, "technology" refers to all processes and practical applications of knowledge to overcome necessities and sustain progress. It associates between the intangible realm of ideas and the tangible world of their applications (See Figure 2.2). Since the beginning of information age, the understanding of technology changed computer based developments.

The tangible character of physical world remained same, however intangible character of human mind, ideas, creativity has replaced with virtual environment where mostly everything is possible.
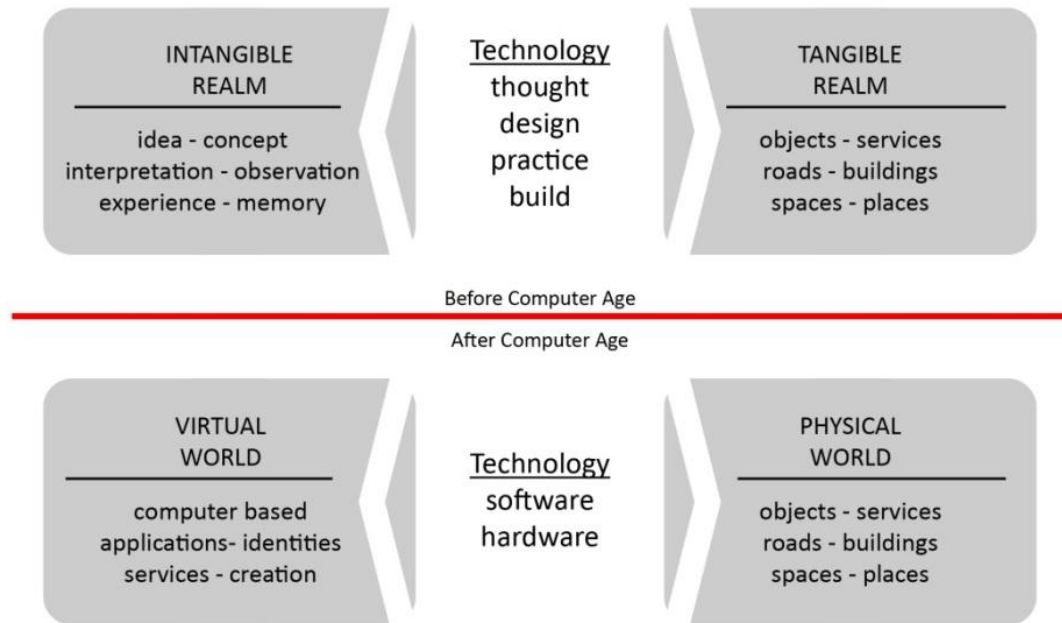
Figure 2.2. The shift in understanding "technology"

Formerly, the interaction between human and its environment can be defined over the processes and applications realized to overcome problems and satisfy necessities. In this circumstance, this relation binds physical environment and social environment to each other, as information or knowledge shuttles between same two realms through spaces and objects. However, computer based applications transformed the transition of information which has widely effected social and physical dynamics. Eventually, individuals face directly or indirectly with computers in everywhere at anytime.

Giddens (1990) argues that technological evolution has driven a universalization and liberalization of time and space. He explains 'time-space distanction' as the globalizing dimension of interactions, with the creation of 'stretched' relationships between 'local' and 'distant' media forms (pp. 63-65) and with 'local happenings' being. Compared to the former modes of communication those are shaped inter-locally and proximity is very important for the temporal and spatial characteristics of communication, technology brought various potentials for local context to develop modes and flows of communication that is no more limited to geography, but provide remote and temporal applications (See Figure 2.3). The result of those developments was in the separation of time from space (time-space distanction), disembodied social interactions from spatial and temporal contexts, stretched and distanciated communication patterns and relationships (Tsatsou, 2009).

The opportunity to access most of the necessary information from a single device is similar to what Harvey (1990) explained in the speeding progress of consumption. The term "Time-space compression", for he refers to the loss of perception by augmentation of opportunities and potentials flowing in an interval of time, is also valid for the potentials that computers provided. Since individuals have more potentials to experience or participate in processes by using computers and related technologies. Space can no longer be defined as one of the components in living, experiencing or creating knowledge. He defines time-space compression as a process of rapidity and change in economical, social dynamics, where communication and other technological innovations like railroads, automobile, television and jet aircrafts tend to remove spatiality from everyday life. The advancing communication and transportation modes, which have compressed time and space, is defined as 'disruptive spatiality' where, aggregation of spaces, cultures and symbols redefine, but do not make extinct, the temporal and spatial order of social life we have known so far (p. 302).

In this context the essence of communication in creating knowledge or more in living, became lost. The boost in consumption strategies due to the production and marketing innovations in the industrial revolution, has repeated in information age. F2F communication in local space has shifted to remote communication in global scale. This leap both provided cities to develop their modern forms and affected the organizational character of the social, economical and political processes. In past, local communication was the only way of interaction as in conversations or letters.

However, in present individuals have chance to choose their mode of interaction (See Figure 2.3) according to the purpose of the work to be done. Either it, is recreational or work related; time became the most important thing in life. The step down in physical processes due to the improvements in communication, computer technologies resulted in isolation of individuals from their physical surroundings and articulation in a new space-free realm. Although, the remote and asynchronous or synchronous mode of communication (See Figure 2.3.) provides ease in accessibility to information, the service it provided diminishes the perception and experience of the physical realm. Similarly, in transportation, as the speed and range of the transportation modes improved, individuals have used the opportunities served.

Figure 2.3. Interaction modes in communication technology
(Source: Mitchell 2000; 138)

Definitions of 'Time', 'Space' and 'Place' vary in different theoretical perspectives. To generalize and create an outline for these terms; time is defined as 'natural time…abstract time … or experiential (phenomenological) time', with the latter being conceived as 'my time: time as experienced by me-or-anyone, my own here-and-now, my situated being-in-the-world, me as a real someone someplace sometime now' (Scannell, 1996, p. 152). And space is defined as 'an amorphous and intangible and not an entity that can be directly described and analyzed' (Relph, 1976, p. 8).

In relation but differently from former terms, place is a well-accepted theoretical construct of spatial studies that implies on the existence of a created environmental form which is imbued with a symbolic significance to its users. Shortly place is where human experiences (activities, memory) and physical form (plazas, streets) are fused together, creating a unitary context. Pacione (2009) defines place as a unique and special location in space, notable for the fact that the regular activities of human beings occur there. Moreover, because it is a site of such activities and all that they entail, place may furnish the basis of our sense of identity as human beings and as well as for our sense of community with others. In this sense, place 'is a concretion of value … it is an object in which one can dwell', whilst 'space … is given by the ability to move' (Tuan, 1977, p. 12). This interaction is qualified from majorly two different perspectives. On one hand, the argument is on the opportunity and potential of communication technology developments in creating new 'mediated' social and physical spaces, whereas the other explains the effect of technological developments on places with the loss of values and identities due to globalization of accessibility and communication opportunities.

Scholars like Auge, Meyrowitz and Relph have supported that developing technologies in specific areas concerned with the urban environment, affected the necessity for face to face interactions and lessen the importance of place-based living. The terms such as 'no sense of place' (Meyrowitz, 1985), 'placelessness' (Relph, 1976) and 'non-place' (Auge, 1995) stresses their argument about the crisis in place and its identity.

This lack of sense in places leads to the weakening of experiences, identities. Furthermore, the identical characteristics, similarities and abstractedness of spaces can be the other arguments on this side. Shortly, spaces are the context of places and places are the context of social realm in cities. The prosperity of the whole system is associated with the accuracy of each constituent. Relph (1976) argues that, the uniformity of the landscape or urban fabric and the lessening in the diversity of places are caused by the domination mass communication which also creates mass culture shaped by fashion and consumption when globalization opened up the accessibility in every term possible to the entire world.

Meyrowitz (1985) explains the role of communication technologies as the major factor that effects our physical and social environment leading to a dissociation of those two. In a globalizing world, single information is open to access like others that are disseminated intentionally for specific purposes. The placing of 'the information' no longer bonds to the geography, rather it is conditional to the global guidance and individual choice from those indicated opportunities. Thus, places are under risk of being identical. Here, Auge (1995), presents the concept of non-place as the space through the mediation of words, where 'certain places exist only through the words that evoke them and in this sense they are non-places, or rather, imaginary places: banal utopias, clichés' (pp. 94-95). Continuing his definition, If a place can be defined as relational, historical and concerned with identity, then a space which cannot be defined as relational, or historical, or concerned with identity will be a non-place.

On the contrary, Moores (2006) criticizes former arguments as they are concerned with the environmental, architectural and technological uniformity of physical spaces of today, rather than assessing them in various ways to facilitate new experiences and potentials. This criticism leads to the enabling of technological opportunities to augment places to more cultural and socially existential dimensions by the exploration of interactions between physical locations and people with ICTs in urban spaces.

In addition, the unification of ICTs and urban space can provide new opportunities, beside existing ones, where individuals experience and define new identity elements. Besides, Moores (2006) explains the current situation of interactions between social life and media technologies in 'physical co-presence' that individuals exist in and participate to social activities where they are both in physical space and experiential space. The facilitation of ICT applications serve as an extension to the physicality that transcends boundaries virtually and instantaneously, while serving to recreate aspects of the liveness and immediacy of physical co-presence'(p.4). Hence, electronic media re-situate people and contribute to the process of place making, rather than to that of constructions of 'non-place' (Tsatsou, 2009).

2.3. Summary

Technology is the basis of all development processes and reasons for the quest of progression. The necessities of people will always emerge in everyday life or just for curiosity. Hence, the intangible world of ideas, concepts, solutions and applications will consistently exist for improving the tangible world of built environment.

These interaction behaviors between individuals and their surrounding environment should be well constructed to sustain the balance. Industrial revolution has decisively effected built environment and social dynamics. Production and marketing strategies changed to increase volume produced or sold in short intervals of time, besides social dynamics has transformed to keep up with the changing rapidity of developing processes. Cities expanded and interlinked with each other for economic and political reasons. The urban space in some points benefited from these major changes like the inner city circulation paths or mix-used environments. Although these changes help to improve place quality, the social dynamics are changing and transforming simultaneously.

The problem seems to be developing in the gap between the speed of developments and adaptation to both physical and social realms. The communication and computer technologies are so rapidly improved, produced and then adopted by users that the same speed cannot be provided in the development of physical spaces. Then the urban environment has dropped back when people virtually update their information each day.

Information and communication technologies provide an economy of using time in most of the development processes as transportation and coordination time, owing to the assignment of these actions to non-human instruments. In this regard, the expectation is on the efficient and quality use of time freed up to their personal life in their environment. However, ICTs themselves seizes upon this spare time by different purposes like creating mass culture with various opportunities, not to fulfill the necessities but provide dynamism in economy.

Eventually, a precise argument cannot be derived here. Although, the pursuit of a certain solution became impossible in these cross-related factors, implementation of softly transforming processes to the problematic subject-areas would support the reunification of social and physical entities. Within technological developments in communication, transportation and computers, the perception, existence, experience, context of space and time has changed. Thus places; "spaces defined by identities", memories and social dynamics, are affected. Interaction between ICT applications and urban entities is evaluated in both as a vanishing point for 'places' with the loss of identity, memory which has replaced with provided services of ICTs; and also as the potential of new creation and potentials be provided again by ICTs.

The necessity of these two facts is inevitable. Neither 'place' nor 'technology' can be underestimated in sustaining social diversity and dynamism. In this point, the solution is to balance the role of each feature in participating to reorganization of urban up to date and as a whole.

CHAPTER 3

TECHNOLOGY OVER PLACE

This chapter explores the types of ICT applications in urban spaces. The aim is to introduce the variety and content of these applications and how they blend with the environment to maintain or augment existing situation. In first part, types of ICT applications will be scrutinized under an umbrella term "Locative Media". This term represents the applications realized within an existing environment that follows up the assets of related place. Then, three different concepts will be examined as augmented spaces, ubiquitous computing and digital places.

The general concept of ICTs use in urban spaces has different point of view when compared to practicing physical elements in design process. As ICT applications are more important with their content of interaction rather than physical existence or appearance, the design guidelines for physical processes do not match with those kind of applications. In theory, the impacts of technological developments can be traced upon social and physical changes in time. Also in practice artists and designers create new perspectives in physical spaces using ICT applications. ICTs deal with users, maintain and transfer content, information and have physical existence. However, the little difference makes sense in this point. ICT applications are majorly virtual and provide ubiquitous access to everything despite their physical point of stand. The importance is on the content and the activity they exchange with users. Since content and information can be updated according to changes in social dynamics, ICT applications can also be up-to-date to communicate in present situation. On the other hand, physical spaces are permanent in content and existence which makes them more vulnerable to time and social dynamics. The importance of physical realm is as much important as social structure as they inevitably live together. However the insufficiency of one, surely affects the synergy of those two.

3.1. Design Approaches

"The Architecture is no longer the play of masses in light. It now embraces the play of digital information in space[1]".

Urban built environment plays a critical role in the construction and reflection of social behaviors. This is reflected in the way it acts to structure space, which does not only reflect and express social patterns, but can also generate these patterns by shaping patterns of movement and co-present between people. In this way architecture actively shapes and reproduces the norms and rules of social interaction of a particular society. Hillier and Hanson (1984) argued that the architecture of the physical built environment plays a much more active role in society than had been previously suggested, through the way it structures patterns of space. However, there has been a number of technologies that have influenced the form and dynamics of cities to a great extent.

A report on locative media from the École Polytechnique Fédérale de Lausanne states the following: "The term "locative media" refers to every information about the physical location as well as other contextual cues. The most commonly used context of mobile systems is the location of the user since it is easy to determine and it could be meaningful to use it in order to adapt the behavior of a mobile application. Academics (Schmidt et al., 1998) propose a wider definition of location awareness. They structure the concept of context by defining a hierarchically organized model in which they distinguish two categories according to the level of abstraction: physical environment and human factors. At the lowest level, the physical environment refers to all the physical variables like location (absolute or relative) as well as conditions (e.g. light, temperature) or infrastructure (surrounding resources for communication, computation, and task performance).

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[1] 1 E-topia: "urban life, Jim - but not as we know it", William J. Mitchell,1999, MIT Press.

At the higher level, human factor related context is structured into: information about the user (emotional state, knowledge of habits ...), the user's social environment (co-location of others, social interaction, group dynamics...) and the user's tasks (spontaneous activity, engaged tasks, general goals ...)." Locative Media concentrates on personal social interaction with a place and with technology. Therefore a lot of locative media projects have a social, critical or personal (memory) background. Locative Media lets us interact differently with our surroundings. Overlaying everything is a whole new invisible layer of annotation. Textual, visual and audible information is available as you get close, as context dictates, or when you ask. Keywords are sharing, messaging, notes, leaving, marking, demarcating, tracking, logging, opinions, trading, and collaboration, gaming and searching.

ICT-based applications show different characters is similar spaces due to their pre-defined content. For example, an urban screen can display either governmental information or artistic content in different hours of the day. Although having multi-purpose content in those applications, we can categorize ICT applications within their content or hardware technology. According to the hardware technology of ICT applications, there are various techniques of practice based on a few tool.

- Display technologies are one of the most popular tool in developing digital services like urban screens as digital poles to broadband advertisement / information or projection systems to transform every surface to a base for content and LED bulbs to create colours / patterns for rendering existing surfaces, objects and voids for different visual contents.

- Communication technologies (both wi-fi and wired) like mobile telephones or computers are ratherly used with display technologies. They became an interaction controller like in gaming consoles for users and they can be used to activate or communicate with the service or other users in-pre-programmed application.

The technological character of the ICTs makes them programmable for different goals such as, advertisement, broadcasting, entertainment, information and surveillance. With the support of these services, various types of usage meets the urban space. This additional spaces help to broaden commercial activity, participation, use and information through the space. The major types of usage in ICT applications are;

- Advertisements and commercial displays: These are one of the most common type in ICT-based services which are mainly driven by commercial forces. The variety of the objects that are advertised freely, generates a chaotic landscape of images. Since market has its inner dynamics when it comes to commercial content, every space that leads to potential consumers is used for stimulate consumptional behaviours like sales, promotions. Even in some artistic or entertaining services commercial purpose can be realized. In this manner, advertisement displays can be used to understand the way to improve the technique of usage and the quality of content of ICTs.

- Artistic purposes represent various creative content to audience and bring the opportunity of using spaces by individuals itself. The types we are facing in this kind of attractions can be installations, light paintings of the building exteriors, public viewing or digital playgrounds. Artistic purposes can be held both by private investors like "FunTheory" by Volkswagen or individuals like "Body Movies" by Lozano Hemmer. Different than advertisements, artistic applications tend to facilitate social dynamics with user-oriented interaction itself.

- The information broadbanding is commonly used by the governmental authorties of the urban environment. The local information and announcements can spread over gsm services or urban screens to the audience, and specific information can be collected from the citizens by authorities with using surveillance technologies over camcoders, interactive urban screens.

The self-programmatic concept of ICT applications support social interactivity with announced events or happenings. Although most of the uses in this context has commercial purposes, nearly all of them has flexible character providing a base for the users that they can define, transform and explore existing spatial organization. The most important issue in ICT applications is the interaction with audience which defines the purpose whether the application is a monologue or communication.

While these technologies accomplish their intentions in a number of different ways, the end result is the same: overlaying the physical space with the dynamic data. Here, the term 'augmented space' refers to this new kind of physical space. Thus, augmented space is also monitored space.

Manovich (2005) explains augmented space as a physical space which is 'data dense', as every point now potentially contains information which is being delivered to it from elsewhere. At the same time, information is gathered by video surveillance and audience inputs from any point in space, recording movements, activities, temperature, light levels, and so on. So, augmenting a space adds a new dimension to physical world, making it multidimensional. As a result, physical world includes more content than before, having physical, social, economic, and political, etc. The design approach of augmented space is an architectural problem. Augmented space provides a challenge and an opportunity for many architects to rethink their practice since architecture will have to take into account the fact that virtual layers of contextual information will overlay the built space. The layering of dynamic and contextual data on physical space is a challange of combining different spaces together. Augmented space is uniquely different as it is for every user. It can change dynamically over time, and it is delivered through an interactive multimedia interfaces. Then it is not only a physical space design problem, rather; it is also a cultural paradigm that includes history and present social, economic and political externalities.

Ubiquitous technology / Pervasive computing is another trend towards connected devices in the environment. It is a trend being brought by a convergence of advanced electronic - and particularly, wireless - technologies and the Internet. Pervasive computing devices are not personal computers as we think of them, but very tiny devices like RFIDs, either mobile or embedded in almost any type of object imaginable, including cars, tools, appliances, clothing and various consumer goods - all communicating through increasingly interconnected networks. Ubiquitous technology is pervasive in nature and embedded in the environment, completely connected, intuitive, effortlessly portable, and constantly available. Among the emerging technologies expected to prevail in the pervasive computing environment of the future are wearable computers, smart homes and smart buildings.

The word "ubiquitous" can be defined as "existing or being everywhere at the same time," "constantly encountered," and "widespread." When applying this concept to technology, the term ubiquitous implies that technology is everywhere and we use it all the time.. Instead, we focus on the task at hand, making the technology effectively invisible to the user. Ubiquitous technology is often wireless, mobile, and networked, making its users more connected to the world around them and the people in it. Mark Weiser, who also coined the phrase "ubiquitous computing - UC", describes UC as the opposite of virtual reality. In VR, users access desired information by surfing between content, whereas UC provides and serves necessary information to user anywhere, anytime. The basic concept is layering information over physical locaitons and objects like augmented reality. But the difference is, UC uses personal commodities as a tool of communication, like wearable computers or context-aware devices. Ubiquitous computing provides a shift in our daily activities in a variety of ways. When it comes to using today's digital tools, users tend to communicate in different ways, be more active, conceive and use geographical and temporal spaces differently and have more control over both on information and physical space. In short, ubiquitous computing is multi-dimensional by being global and local, social and personal, public and private, invisible and visible and last providing both creation and dissemination of information.

Digital technology revolution is creating new digital places at the setting, community, and regional levels. Former two ICT-based design approaches covered the concept of layering dynamic information over physical space to gain additional control on information where and when desired. However, the deficiency here is the other side of the design process which is the physical spaces. When we try to combine digital and physical worlds together. It will not be enough to think about one side to adapt social and physical facts. Also it is not completely sufficient to provide wide range nad various information to serve users. If all these approaches unite to manage effectiveness in designing place. Actual place-making concepts should also be taken into consideration. Horan (2000) explains the concept of "digital places" as the process of creating digital places like "recombinant design". William Mitchell (1995) defines recombinant architecture as "telecommunication systems replace circulation system, and the solvent of digital information decomposes traditional building types,".

Horan (2000), draws an analogy between the recombinant DNA process and urban design and clarifies how recombinant urban design considers digital technologies which can be "spliced" into the recomposition of our homes, offices, communities, and cities to achieve optimal forms of space and place. He explains placmaking as a deliberative and interactive process-settings, communities, and cities are constantly being reinvented based on a complex interweaving of economics, culure, technology, and circumstance.

Horan's concept of recombinant design focuses attention on how digital technology can be incorporated into this complicated yet important placemaking process. In different scales of design the impact of technology acts in different sort of issues like differences between the purpose of a personal computer and interconnected digital community. Here, author allocates his concept into four examination parts as fluid locations, meaningful places, threshold connections, and democratic designs.

In the notion of "Meaningful places", Horan (2000) embodies the need to design digital places in a manner that respects the functional and symbolic associations that places often contain. He focuses on how increasing use of digital technologies affects our perception and use of the physical and social communities. His key point is that, the ability to communicate with anyone from anywhere also means that we are nowhere-that is, dislocated agents not really connected to any person or place. For satisfying urban environments, the sense of place is an anchoring feature. Then, Horan stresses that third places which augment home and work; like coffee shops, centers and hubs are key physical assets which should be interlinked with necessary digital qualities to sustain an efficient combination of physical space and cyberspace.

"Fluid Locations" define the relationship between electronic flows and physical places which cause digital places arise. It refers necessity for place design to identify unprecedented spatial fluidity that we now have to perform day-to-day activities *anywhere and anytime.* It considers Manul Castells' concept space of flows to integrate electronic movement of social, cultural, common activities. And it struggles to anwer how digital places can be created to accomodate new communication and activity patterns.

"Threshold connections" focuses on the necessity to design cognizant of the relationships between physical and virtual space. It consists of two dimensions as reflections of virtual aesthetic to physical environment and "interspace" between physical and electronic environment. The main point is to supply balance between virtual and physical environment such as decidingthe style of the room, type of users, where the user sit and the interaction of user, virtual and physical environment.

"Democratic designs" is about the process by which we design digital places and it is an essential strand for truly integrating our physical and digital environment because it originates directly from the combination of the technical capabilities required by digital systems and the intersts and concerns of those who will occupy this new realm, including users, residents, e-consumers, digital product manufacturers, voters, citizens and policymakers. The process should supply sense of place and community. It focuses who make the design and which community (user type) or place affected from the design.

3.2. Summary

Augmented design process explains a step forward, using ICT layered on physical spaces when adding extra and valuable information or context to users. There are different types of designs that can be named under augmented designs like locative media studies. Different purposes of techniques used in ICT-based designs do not actually seperate from each other. How we can classify them, is the region, or periphery they are affecting, and the purpose they carry. These two facts are the key components when we evaluate or classify ICT-based applications.

The region that ICT applications serve could change due to the purpose of the application. For example a commercial purpose surely desire to broadcast its work globally by internet and viral videos, thus this became out of boundaries. On the other hand and artistic or entertaining event or application could stay local even limited to a street of urban square. The difference here is the creation purpose of these tow distinct example has different character and aim to be designed which are also effected from external facts like economy or politics.

Periphery, as the second component of evaluation is only considered by the designers purpose and attitude. Mark Weiser (1996) use the word periphery to name what we are attuned to without attending to explicitly. His exemplifies this notion as we notice the difference, in time we are accustomed to a situation. Periphery is important when applying non-physical elements to a physical space which will interact with users.

As not all users are same or even similar in perception, characteristics or understanding, the filter of periphery is necessary by determining the social groups in different times in a certaion location in order to propose an ICT-based design to that certain location. Ubiquitous computing applications may lead in this kind of understanding, however what is missing in that point is the satisfaction of the necessities of the users of UC. Pervasive systems surely ease daily life activities; like communication or entertaining. But there is still a need of social interaction like in third places. Although one side of equation can be solved within augmentation or ubiquitous sytems, the physical world should also be reconsidered according to forthcoming digital services. In order to improve the way live in the places where we live, we need to create places that comprehensively integrate human and technological elements in a manner that both electronic and physical networks, and through a process that engages participants. As the design of building and cities has always been affected by the relationship between people's desires and extant constraints, that will advance the symbiotic relations between people and technology. As Horan quotes from Edward Rothstein (1997), "Whether it is heading toward apocalypse or utopia, technology seems to have the power to move us, to create a sense of change. No other aspect of contemporary life has that character." So for efficient and satisfying design process in unifying ICT and physical space, recombinant design brings us a broader concept of design, a concept that engages a wide range of users and decisionmakers in designing and creating communities that meet their collective aspirations and expectations.

CHAPTER 4

WORLDWIDE PRACTICES

It is clear that information and communications technologies have recently been challenging established concepts of space and time, changing our perception of the friction of distance, and, therefore, allowing changes in the way we allocate ourselves, our buildings, and our infrastructures across territories. As Castells (2004) argues; "both space and time are being transformed under the combined effects of the information technology paradigm and the social forms and processes induced by the current process of historical change". This challenge is what shows us that important changes are happening or are about to happen, and that tells us that crucial new elements have been introduced into the everyday processes that constitute life and society. In most cases content plays an important role in urban space when audience is individuals from different ages. Here also the physical part of the ICT applications are important as urban life still and will exist in physical environment. Although there is a lack of guidelines in practicing ICTs in urban spaces, existing guidelines should be maintained to eliminate the risks that would emerge. In this chapter worldwide practices of ICT-based design will be scrutinized, these examples are selected from different locations and with different purposes. The aim of this examination is to exemplify the entertaining and recreational perspective of ICT-based designs rather than commercial, politic or economic purposes like in most common urban screen applications.

4.1. Worldwide Examples

In global practices, ICT applications are used not only for informative or commercial purposes. Although the developments in ICT serves for the market in first place, artistic or recreational purposes are also considered in use of ICT applications which serves social life as additive assets for augmenting interaction quality in street life.

The examples listed below represents some of the global practices of ICT applications and will be evaluated according to their location of application and purpose of service.

CASZUIDAS: moving images in public space is the title of an urban screen arts initiative at Zuidas, Amsterdam – a newly developed district that combines working and living in a strategically chosen location of the city, in between Amsterdam city centre and the airport. High-tech office buildings, comfortable housing areas and cultural services are being developed around the heart of Zuidplein, Zuidas. This application displays local or global works of art like an open art gallery by working together with a website. Although the purpose of the application is artistic, the risk of displaying culturally or ethnically insulting content does exist as the control of the content is maintained by the website itself. In this manner, this risk should be eliminated by administrative forces in case of any social discomfort.

Figure 4.1. Street view from CASZUIDAS - Amsterdam

FED Square: Federation Square is a central and unifying public space, a landmark and a cultural magnet bringing together open spaces and innovative architecture and engineering. Comprising an entire city block, Federation Square's creative mix of attractions that embody all that is great about Victoria fine art, hospitality, bold design, innovation and vibrant events. Located at Melbourne's front door, Federation Square provides a logical base from which you can discover the city's many delights: shopping, parks and gardens, arts, sports and entertainment by both are being an architectural landmark of the city and an open entertainment, commercial center.

FED Square augments this important and powerful urban space with urban displays in which sport games, artworks and TV shows are displayed. Also these urban screens were oriented to have enough audience space to organize theme events for golden ages, children, women or urban history etc.

Figure 4.2. Activity view from Federation Square - Melbourne

ZKMax: The experiment at the ZKMax in Munich is a first step in that direction. The ZKM intends to develop a ZKM-satellite dedicated to the storage of and access to orbiting art. Such Space Art rotates in orbit, but is accessible for terrestrials via mobile screens. The technology required is presented in the scope of this cultural project for the first time as a prototype for consumer or 'prosumer' (poducer/consumer) devices. The ZKMax functions as display and space of interaction as the current status of the «SpacePlace» project is made visible and audible on two large projections screens:

One screen serves as a forum for interaction offering the possibility to explore the data pool as well as to add new information via many mobile phones with free public access Bluetooth protocol. The second projection syncs with selections made by the public on the first projection, and plays them as an «Audio Wobble Movie:» images and video 'wobbling' fluidly to the sound of incoming RSS newsfeeds from webblogs and Net sources concerning science and art in outer space. The soundtrack, the result of text-to-speech synthesis of online information, is narrated by an artificial computer-generated voice, over an added track of the 'sounds of space,' a radio feed that 'listens' to what scientists are studying with radio telescopes in real time.

This audio controls the generation and spacial distortion of still photo and video sequences retrieved from the data pool by guests in ZKMax. The visitors experience the terrestrial simulation of an orbital artwork. This Bluetooth interface is local to ZKMax, yet simulates a sort of 'ground station' of inquiry into Space Art by guests acting as «orbitants.»

Figure 4.3. Street view from ZKMax

Body Movies: The ICT applications are being embedded to urban places, which some of them, the experiential ones consider locality and tend to augment and broadband it. Such as Lozano Hammer's "Body Movies", (2001) (See, Figure 4.4), the artist uses this cultural concept, to develop an installation meeting with up-to-date tools of ICT and broadband it in different locations of the world.

In this context, creativity deriving from locality gains importance. Body Movies transforms public space with interactive projections measuring between 400 and 1,800 square metres. Thousands of photographic portraits, previously taken on the streets of the host city, are shown using robotically controlled projectors. However the portraits only appear inside the projected shadows of the passers-by, whose silhouettes can measure between two and twenty-five metres depending on how close or far away they are from the powerful light sources positioned on the ground.

A video surveillance tracking system triggers new portraits when all the existing ones have been revealed, inviting the public to occupy new narratives of representation. Samuel van Hoogstraten's engraving "The Shadow Dance" (Rotterdam, 1675) is the main source of inspiration for this work. Body Movies attempts to misuse technologies of the spectacular so they can evoke a sense of intimacy and complicity instead of provoking distance, euphoria, catharsis, obedience or awe.

Figure 4.4. Activity scene from "Body Movies"

Yekpare: As quoting from the designers, "Yekpare" is a storyteller which narrates the 8500 year story of Istanbul. The story embraces symbols from Pagans to Roman Empire, from Byzantine Empire to Latin Empire, and finally from Ottoman Empire to Istanbul at the present day. Haydarpaşa Train Station, with its brilliant architectural forms, is the building on which the story is projected. The connection between middle east to west has been provided by Istanbul and Haydarpaşa since 1906.

In the 50's it served as a door for millions of internal emigrants who have triggered the chaos in Istanbul's dialectical daily life scenes.The project's conceptual, political and geographical positioning, the location's depth of field and the fact that the entire show can be watched from Kadıköy coast; make "Yekpare" a dramatic presentation. The first day of the performance also marks the 47th deathday of Nazım Hikmet Ran, the famous Turkish poet. We started out with a quote from his epic novel, "Human Landscapes from My Country": "At Haydarpaşa Train Station, in the spring of 1941, it is three o'clock. Sun, exhaustion and rush lay on the stairs..."

This application is not only influential and pioneer for other similar applications but also represents the cultural and historical background of Istanbul. Although, the technique to display content on an architectural facade is common but being that application of an national landmark makes this application more important and attractive.

Figure 4.5. Activity scene from "Yekpare"

Piano Staircase: With the support of a private initiative "Fun Theory" realized "Piano Staircase" with a motto *"Can we get more people to take the stairs over the escalator by making it fun to do?"*. This installation transforms regular stairs to musical instrument that triggers spontaneous interaction and increase the use of stairs.

Figure 4.6. Activity scene from "Piano Staircase"

The World's Deepest Bin: Again from "Fun Theory", a trash bin is transformed into a more attractive toy that plays "falling object" sound when trash is dumped. The aim is to stimulate people to throw trash to bin rather than ground by making fun. Designers explain their project as "To throw rubbish in the bin instead of onto the floor shouldn't really be so hard. Many people still fail to do so. Can we get more people to throw rubbish into the bin, rather than onto the ground, by making it fun to do?"

Figure 4.7. Activity scene from "World's Deepest Bin"

4.2. Assessment of Locative Media Studies

In the last decade, the architectural landscape in many cities has been undergoing a major transformation. A new form of urban space is emerging that is fundamentally different from past and from the spaces in the physical environments for which our perception get used to. Although there are no guidelines in designing ICT-based applications or events, we can consider Schieck's (2005) definition as a form basis for an inhabitable interface system which develops the design of the interface elements and software - the virtual architecture - in conjunction with the design of the physical environment - the physical architecture.

- ✓ Spatiality: signs in space vs. forms in space
- ✓ Social interactivity vs. commercial monologue
- ✓ Location and mobility
- ✓ Relationship of elements and narrative
- ✓ Obsolescence vs. flexibility
- ✓ Privacy concerns and light pollution

The dualities listed above can/may represent the evaluation criteria for ICT-based services or applications. They also fit what Horan (2000) explained the necessity of considering physical and social perspective in process of *digital places*. From these components listed, we can assess certain qualities of an existing design or consider them as a ground to start a process. If we move back to worldwide practices, we can see that all of them trigger social acts rather then they are commercial monologues. In terms of spatiality, CASZUIDAS and ZKMax stands in separate form, although the rest of them re-covers, re-uses exiting places or objects. In this manner, local users get used to this change (e.g. ICT-based service) easier. In mobility aspect, they are fixed to their location but as their concept can be realized anywhere else within similar framework we would expect same results like originals. The purposes of these designs are mostly recreational and entertaining, so we cannot talk about privacy concerns. However, we can talk about light pollution if only display or projection based applications are active for a longtime in same place. For example, if we imagine *Body Movies* takes place every day for one month, the attraction level of this single event would surely decrease and light pollution will increase in pedestrians' perception.

CHAPTER 5

CONCLUSION

Space is continuously transforming and developing through time. Since "technology"; the development tool of human kind approaches present necessities and situations to find convenient solutions, the interaction environment of those "technological outcomes" will inevitably change with it. This struggle between humankind and physical environment can be traced in certain paths up to the information era where the knowledge and practice level of humankind peaked up to a different path. Information era brought digital devices into our lives (like computers and internet). The routine of everyday life has changed relatively to these developments. However this change was not the same as previous ones. The partial change in the path of the struggle between humankind and physical environment from physical world to virtual environment has affected both physical world we live in and the users themselves. Humankind adopts these developments and services as new customs like the opportunity of accessing information from digital devices or communicating regardless of distance to other people. Eventually, users become more privatized and individual everyday that has also effected the interaction between physical environment and other individuals.

The change in the interaction process transformed in cities and its spaces is alive if only users exist in those spaces. As, everyday life and civilization cannot be imagined without the dynamism and relationship in cities and settlements, the results of the transformation by the information age emerged with new crucial problems like the loss of face-to-face interaction and lack of use in urban spaces due to the attractive and efficient circumstances of ICT services. This emerging problems and situations were handled with various alternatives which in some cases the appeal of physical environment gain importance as the solution or in such cases, the affiliation of ICT services with the physical environment became new attitude.

In maintaining the quality of urban spaces through design initiatives, there are many inputs to be considered. The general framework of urban design indicates certain elements as major concepts to be driven in design processes. However when ICTs are considered together with physical environment, the design guidelines became insufficient to explain and support the design process. The reason is that ICTs work in a different level than physical environment. Although, physical environment and virtual environment consists of certain elements as users, space and content / context; the difference is in the mobility and potential of change. Unlike physical environment, virtual services and applications serve more opportunity for various information and context to be delivered to its audience. This difference makes ICT applications an important tool in installing attractiveness and functions to physical environment.

When composing an ICT-based design, we have a physical layer as the base, a social base of users which have different individual perception, character and interaction level and digital content and hardware in order to broadcast and utilize our design in physical environment. As mentioned before, the design process is affiliated with the environment of which the satisfaction and efficiency is also fundamental. Today, certain design approaches like augmented spaces, ubiquitous computing are gaining popularity, when global firms realize street-performances to advertise, inform audiences around the world. Thus, people are getting used and demand those kinds of installations in their location. On the other hand, projecting content on an architectural surface or providing wearable computers to users immediately can/will cause a gap in perception. Once ICT-based services are provided, the traditional lifestyle and related activities will begin to obsolete. This is crucially important as social life is extremely dependent on physical environment. Technological developments surely improve the quality of life, but Weiser (1996) points out that some technology does lead to true calm and comfort. He exemplifies that there is no less technology involved in a comfortable pair of shoes, in a fine writing pen, or in delivering the New York Times on a Sunday morning, than in a home PC. Then we can think that there certain outcomes which are enraging or encalming. Weisder explains the difference between those two, in how they engage our attention, calm technology engages both the *center* and the *periphery* of our attention.

Augmented spaces are basically digital layers covered on physical spaces. They are all about content which they interact with users. The more they trigger interesting activities, performances or forward information, the more they are perceived as new and popular examples. Of course they are new; and looking at advertisement oriented examples, they are pioneers of technology based designs. However on the downside, the risk of light pollution and content-jam due to the increasing urban screen population in cities, is also be considered in near future beside the risk of obsolescence in physical environment. Horan (2000) defined this possible risk not only in urban spaces, but also at homes, workspaces. With the rise in use of UC devices individuals adapt themselves to a new way of life controlling communication and daily life activities from a single mobile device, leaving third places unattended.

Physical environment is the only and most important fact in which social life can house rather that websites or virtual worlds. Digital communication speeds up the lifespan and fits more content, information and experience than we can realize in traditional ways. For example, we can virtually travel around the world obtaining information about various places and stare photos. Even to some proposal designs, we will experience activities, taste or smell things via upcoming technological devices. Since imagination in limitless, so as the options…

5.1. Further Study

This study surveys the convenience of SSK Building complex in Konak - İzmir for ICT applications and explores the opportunities to improve existing social and built environment within a soft-transforming process. The study area is selected as SSK building complex in Konak - İzmir. This building complex is located in the city center between Konak square, Kemeraltı Historic Bazaar, İzmir Metropolitan Municipality, İzmir Archeological Museum, İzmir Atatürk Culture Center. The building complex has multifunctional purpose as institutional spaces, commercial and entertainment spaces. Most of the ground floor area and one of the buildings in SSK complex is occupied by commercial facilities. The rest of the building complex is occupied by institutions like SGK and Konak Municipality.

Figure 5.1. View of Case Area and surrounding from Varyant-Konak

Konak Square is one of the most important and significant place in İzmir as the landmark of the city (Clock Tower), the branding region (Kemeraltı Historic Bazaar) and other citywide important buildings and regions are located here. Because of these assets, this periphery is highly populated by citizens and tourists. Here, SSK building complex has a different importance, not for its functional character but for located on the major point as it dominates the Konak Square with its mass and physically interlinks paths between Kemeraltı Bazaar and coast of İzmir Gulf (See, Figure 5.2).

Figure 5.2. Aerial view of Case Area and surrounding

Building complex has inner open courtyard elevated from the street by one storey and surrounded by four storeys high. On ground floor the building layout is repeated, however due to the ceiling that forms the courtyard on upper floor limits the indoor quality in terms of lighting and perception in ground floor. The surrounding streets of SSK complex are highly dense due to the commercial and entertainment functions facing to the street. Although the elevated courtyard can be accessed by stairs, there is a significant difference between street level and elevated courtyard. The reason is the functions differ in elevated floor as institutional to street level as commercial and entertainment. Due to this difference, ground floor walk paths are used more than the upper floor although indoor and build quality is low (See Figure 5.3).
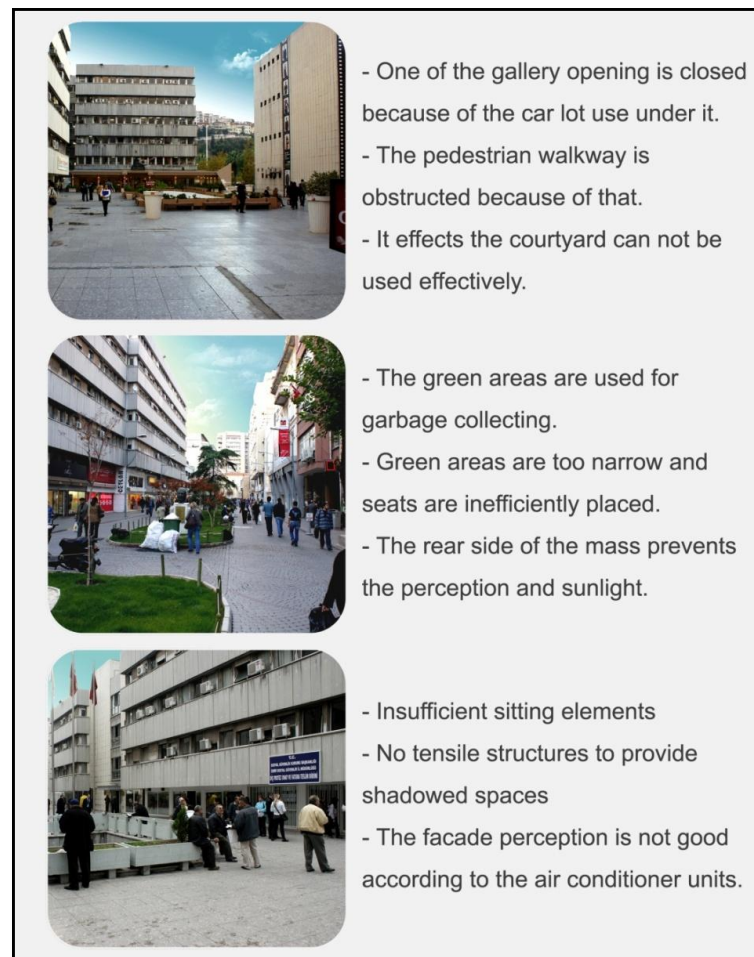

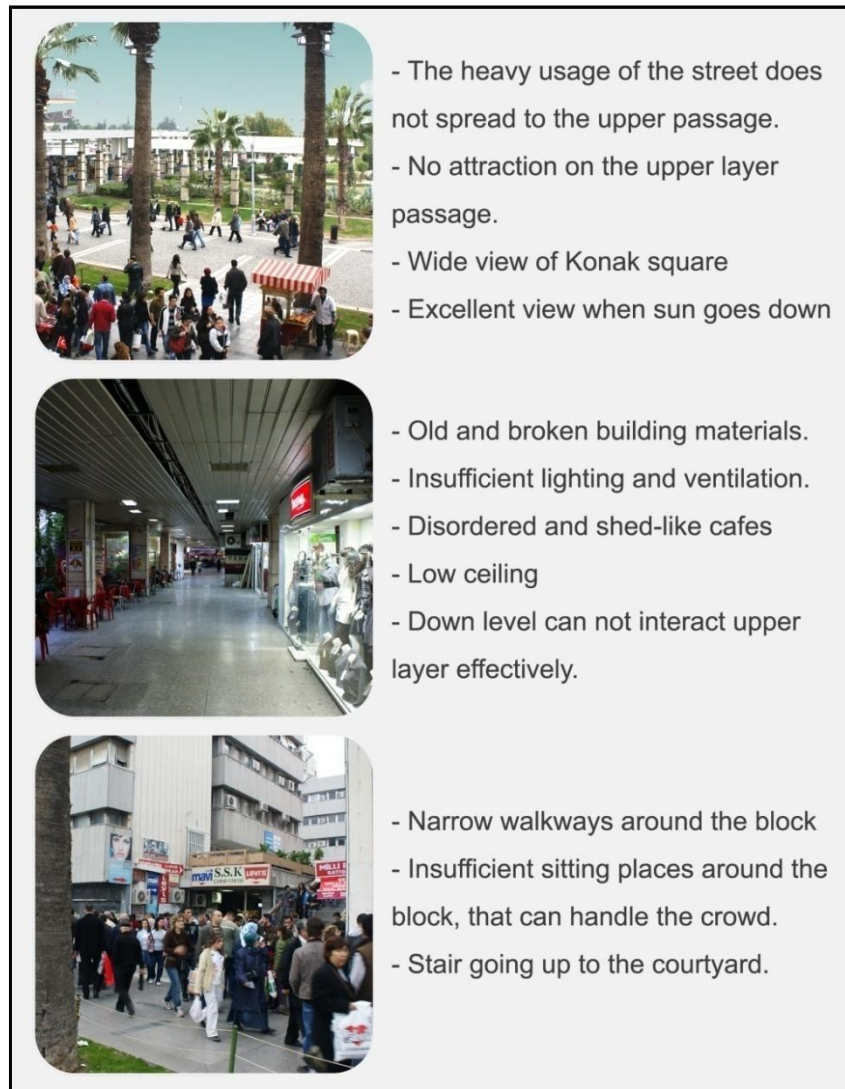Figure 5.3. Analysis of Case Study Area

(Cont. on next page)

- The heavy usage of the street does not spread to the upper passage.
- No attraction on the upper layer passage.
- Wide view of Konak square
- Excellent view when sun goes down

- Old and broken building materials.
- Insufficient lighting and ventilation.
- Disordered and shed-like cafes
- Low ceiling
- Down level can not interact upper layer effectively.

- Narrow walkways around the block
- Insufficient sitting places around the block, that can handle the crowd.
- Stair going up to the courtyard.

Figure 5.3. (cont.)

When the area is evaluated, location and facilities of the building complex serves suitable basis for open-air and indoor usage. The arcades link the Kemeraltı Bazaar and Konak Square to each other. The streetscape is well utilized with the ground floor shops of the SSK complex. However the functional layout of the building cannot serve pedestrians to use the elevated courtyard efficiently as the elevated courtyard is not organized like the streetscape to provide commercial and entertaining functions. On the other hand the ground floor courtyard provides commercial usage and closure for pedestrians, but the build and spatial quality of ground floor courtyard is very low.

The proposal studies illustrate potential application that can be realized in SSK Building complex in terms of ICTs. The outcomes of the proposal studies will not necessarily provide improvements in built-quality of the existing structure but transform the usage customs of pedestrians and relatively the social environment in elevated courtyard. The proposal studies will not only be designed regarding the problems in ground floor courtyard or in elevated courtyard, also the surrounding environment of SSK building complex will be effected by the installations in the study area.

The proposal studies are;

- ✓ Theme spaces, located on interior and exterior facade
  (Figure 5.5, Figure 5.6)
- ✓ Illusion Pool, located in elevated courtyard
  (Figure 5.7, Figure 5.8)
- ✓ Display Yourself, located on selected facade partials
  (Figure 5.9, Figure 5.10)
- ✓ Interactive Playground, located in surrounding green areas around SSK complex (Figure 5.11, Figure 5.12)

These four study topic are designated to achieve suitable approaches for the problems or deficiencies in the area. Here, the idea is to supply new outdoor facilities for pedestrians who are accustomed to conventional use of built environment and to those who use ICT applications and devices but in subjective manners. ICT applications and installations provide a new interaction layer in social and built environment. As these kind of interventions do not effect physical environment hard as building new structures and separated functions, they tend to improve and vitalize the relationship between the user and the used space. "Basic physical elements such as paths, edges, nodes, districts, and landmarks will not change with new information technologies" (Fathy, 1991).

While the elements will not disappear as physical objects, their spatial potential is diminished as their meanings are transformed in the context of heightened flow networks. We argue that while telematics reconfigure and replace traditional physical activities, they also make important contributions to creating a physical urban form that acts at various speeds simultaneously. The combination of spatial and electronic connections creates a puzzle of varying time–space relationships much larger and more complicated than the typical urban design palette of spatial elements. Physical spaces lose their importance.

Figure 5.4. Analysis of Case Study Area

theme spaces

Augmentation of a space brings that space more attention, because of the increased permeability and content or function.

"Theme spaces" is a series of installation, changes the places character or attitude according to important local, national or global events.

The events provides attraction to the space. As the selected area is in the very central place Kemeraltı; this attraction transforms to a citywide focal point with all projections and activities held inside.

The space will own many activities inside with special lighting fixtures and hq projections and customized seats.

SSK buildings which are dominating the Konak Square with its massive form, will be re-used, by a soft transformation process, as a focal point and memorial.

The available blind part of the entire facade of the building is going to be used in the installations. These parts will be used as screens to project or display the necessary data extremely big and expressive.

The courtyard of the building is organized with seats, trees and projecting tolls and lighting fixtures. The customized seats are mobile but not can not be taken away, so the organization changes necessarily.

examples:
1) National events
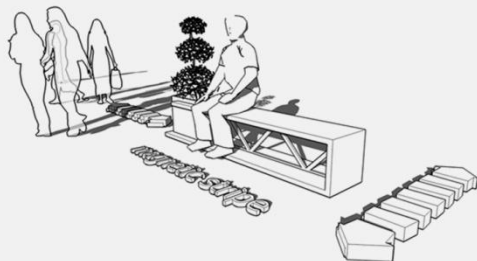October 29th, August 30th, November 10th, April 23, May 19
2) Religious events
Ramadan , Feast of Sacrifice, Holy nights
3) Local informative or entertainment presentations
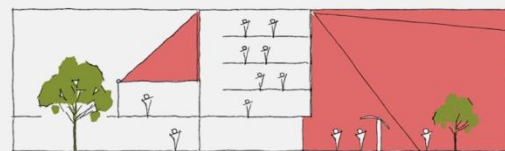News broadcast,Municipality announcement, movie presentation
4) Advertisement
Commercials, Publicity
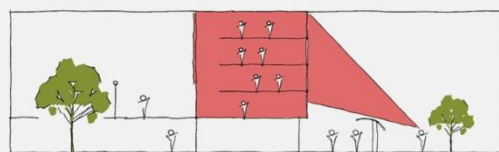
Magnetic stripes are the bordes of the space that mobile seats can reach at last.
The courtyard is organized with this stripes that seats can quickly be organized in any activity, e.g. open-air theatre.

video surveillance and facade projection
(invisible masses)

interior space is projected onto the facade
(invisible masses)

Figure 5.5. Concept of "Theme Spaces"

The massive effect of the SSK buildings will be reduced by installing projection and display systems onto the facades. So the facades will be displaying the interiors of the building or the rear side of the building creating a visual illusion on the facades.
The users of the space will be perceiving the presented activity or the scene behind the mass.

Figure 5.6. Illustrations of "Theme Spaces"

illusion pool

Illusion pool is entertainment and attraction tool that suprises people that are not aware of that such technology.

In certain places, this technology can be used to add value to the existing context.

The concept of this design derives from the analysis of the SSK buildings. The 2 floors which are open to public acces are so seperate from each other that, each two has transformed into passageways rather that used spaces although they have necessary units to attract people for example, cafe, cinema, seats, trees.

The seperate status of this 2 floors can be minimized with physical intervention of technological action. This concept bases on a technological action which results as a physical intervention.

In "*passthrough*" position the system works as single object surveillance mode. The motion sensors sense the speed and direction of the user and displas a random image or motion video.

The real target of this design is to suprise the users with their own mind. The same place which is used everyday, has changed to another thing for a short period of time, and they are suprised or trembled.
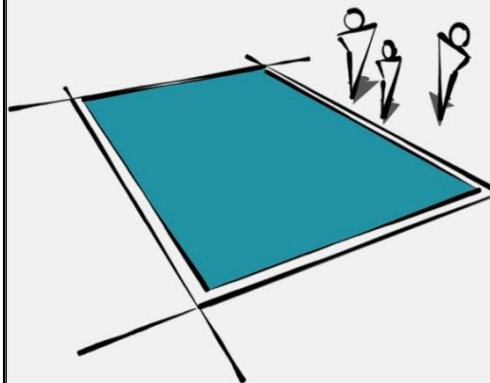
In "*idle*" position the system works as a standard screen to display either commercials or random imagery from its database. In period that user ratios has changed drastically, the system can display attractive videos, to effect people.

In futher design, we can think this system which covered the whole floor area. So the desired effects will be more powerful and continuous.

In "*standstill*" position the system works as dynamic display system that reacts every motion with different types of imagery.

When pedestrians get used to this system after certain period of time, the system can be used as a smart stage that answers the contextual entries.

When dancing activity is realized on the system, every step of the users will be replied with color circles of waves accordingly organized with the motions.
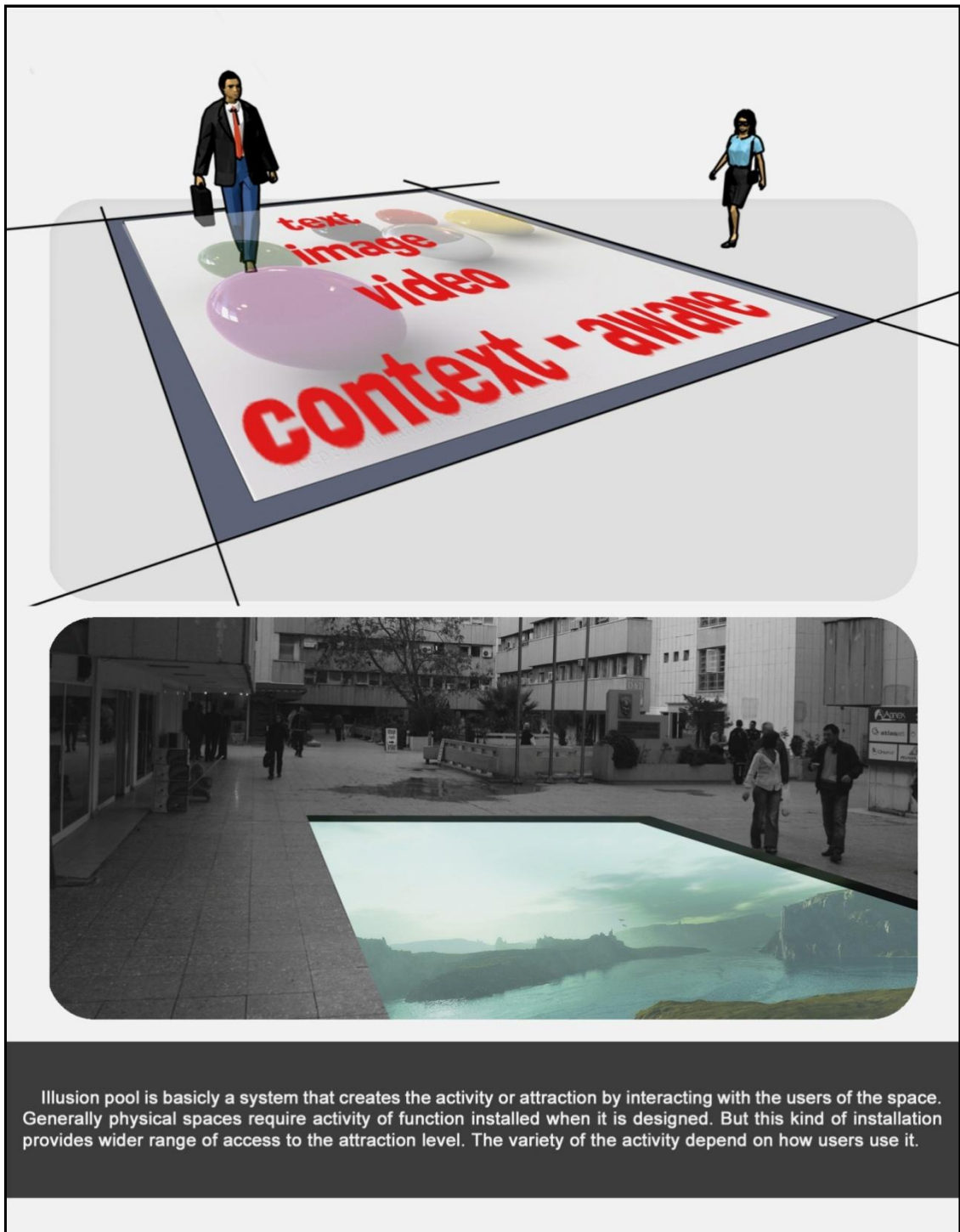
Figure 5.7. Concept of "Illusion Pool"

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Illusion pool is basicly a system that creates the activity or attraction by interacting with the users of the space. Generally physical spaces require activity of function installed when it is designed. But this kind of installation provides wider range of access to the attraction level. The variety of the activity depend on how users use it.

Figure 5.8. Illustrations of "Illusion Pool"

The memory is created by the users of that space. Public spaces become "places" with these kind of memories that people created for themselves.

Display Urself, is a standalone installation around the SSK buildings and Konak square.

The main idea is to call people to leave a memory to where they have been.

This system works optional, rather than the surveillance systems.

The user and system interaction results as a scene on the facade.

LCD panels and camcoder is organized to work optionally. User stands in front of the system and camcoder takes a snapshot of the user and sends it to the main computer which places that shot randomly on an available frame on the facade.

The images stays for a short period of time, then leaves its place for a new shot.

This system is a public utility which interacts with the pedestrians, to share the space in a different way and leave a mark on it.

Artistically, this system can be thought as the presentation of the public character getting virtual everyday by the improving technology. Since the definition of "socialization" has changed. Every figure represents "virtual man" as a digital sculpture.
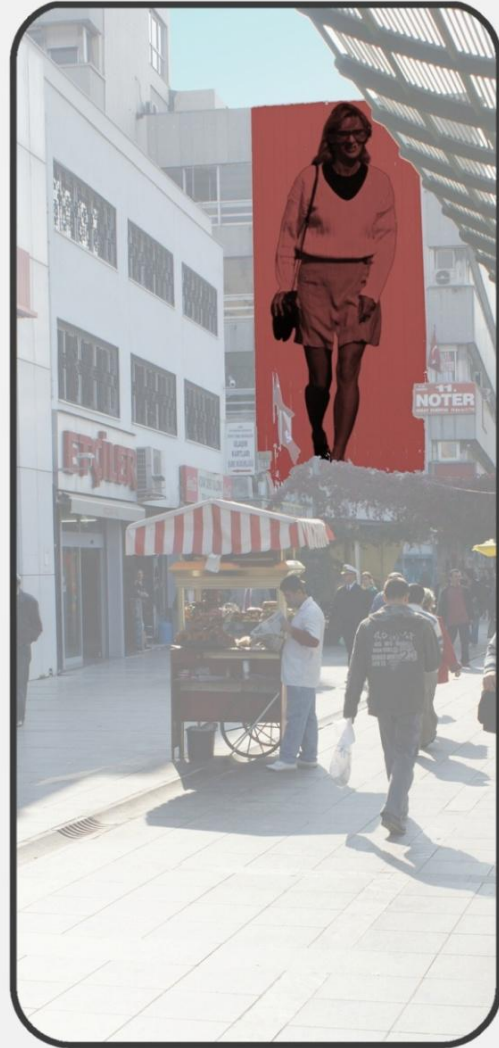
Figure 5.9. Concept of "Display Yourself"

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Figure 5.10. Illustrations of "Display Yourself"

interactive playground

The public spaces were beaten down with the transformation of the definition of the term "socialization", and so playgrounds.

The children of a working mother and father grows alone or asocial.

The creation of interactive playground bases this thought. Not only for the city, the designed toys can be used both in suburban settlements.

The designed toys differ from standard playground toys.

The main concept is to gather people around the toys with their children to socialize.So the toys designed for at least 2 person.
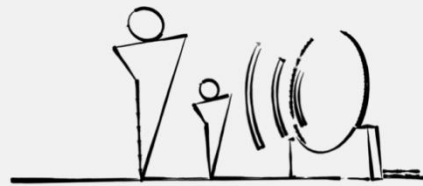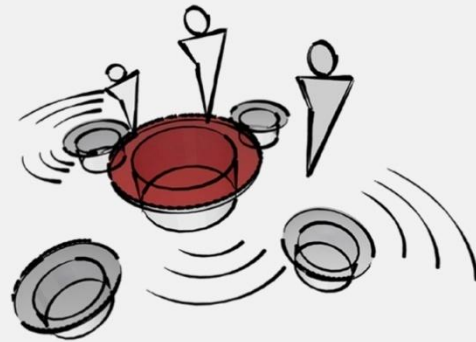
Aquamusic, is basicly a waterpipe with customized whistles on it. This pipes are organized in a park with certain infrastructural elements.

The users create different notes of sound by closing or opening the holes on the whistles. The toy itself shows itself a sculptural element in the playground.
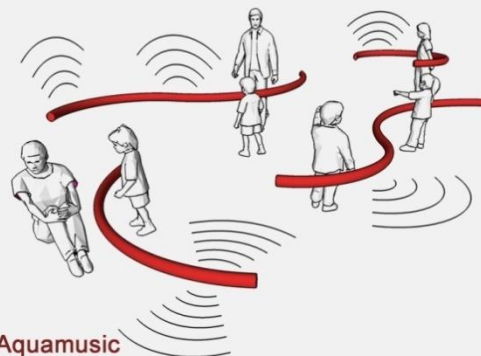
"**Creative audio**" and " **Audiotube**" are sound toys that makes conscious about how sound is created and transmitted.

In creative audio, users move or hit the metal bowls to create sounds. The distance between the bowls morphs the sound that is created.
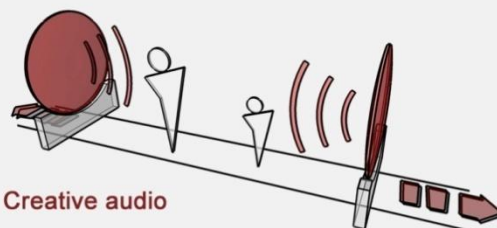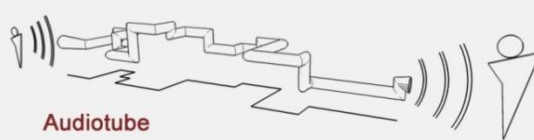
Figure 5.111. Concept of "Interactive Playground"

In audiotube (as a primitive form of phone), users talk within certain distances by this toy. This structure can also be used as a sitting element.

The distance of the tube can be very long which provides itself to have multiple mouths to let multiple persons to use it at the same time.

Audiotube

DrumWorks, is also a sound toy and a sitting element. Every seat or table-like drum creates different note of sound. As it provides variable usages and space to gather, it is favorable to use to organize it in an interactive playground.
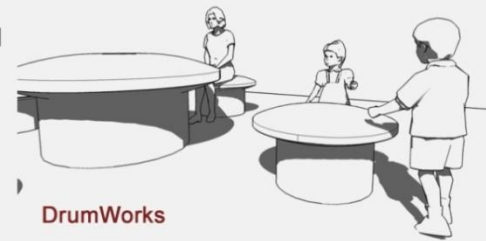
DrumWorks

Interactive playgrounds, are the modified types of standard playground. To keep up with the transformation of other spaces and the changing cultural habits due to the technological states, it becomes crucial to modify the outdoor spaces and its functions accordingly with the necessities.

Figure 5.12. Illustrations of "Interactive Playground"

The study area is one of the most important spaces in İzmir in terms of having historical, administrative and commercial entities in that region. Although these entities supply the necessary *appeal* factor for citizens and tourists, emerging technological improvements inevitably affects the must-have of the city and users. The necessity of physical spaces to occupy dynamic and vital facilities to presence, obligate both functions to update themselves and users to adapt to upcoming uses. Here, SSK building complex provide commercial, entertaining and institutional facilities. However, due to the disorientation in functional layout and lack of attraction for pedestrians separate valuable spaces in case area from more alive streetscape.

In search for augmenting physical environment; providing dynamic and up-to-date information and entertainment for users accustomed to their present routines, ICT applications become a soft design tool. In case of İzmir, SSK building complex has lack of attractiveness in certain open spaces inside it, although the street level of same building is more lively and crowded. The main reason for designated difference between two open spaces of same building is the difference in uses from commercial to institutional. In order to improve the quality of spaces for users, soft-transforming processes can be designated which are small scale interventions in physical environment but with their interchangeable content they became adaptable to different necessities like national festivals, special occasions or they serve just entertaining purposes. During design process there are two sides of the problem as urban design and ICTs. They were handled respectively that none of them, depreciate. Important point is to keep these two realms in balance within a social environment. Eventually, most of all transformations, developments and installations to physical environment are for improving the quality of the life of users. As time, being one of the major components of place, the necessities of individuals and physical spaces change through it. So it is crucially important to update those components with present tools and services which maintain the interrelationship.

Further study would guide researchers for how they could approach the problem. The process of redeveloping physical spaces with ICT services can be handled by private investors, artists or local authorities. But the starting point is the choice of the implementation area. The choice of location is affected from the periphery of social groups, to which the physical space interacts. To sum up, since the design process of physical environment is intricate, as various externalities participates the development process. We cannot expect to see how visual artists and computer engineers do with physical spaces. Of course, the process of design will need multidisciplinary actors to elicit necessities. Then, it is not that simple when we cover a layer of new technology over physical environment hoping to adapt themselves to each other by social processes and time. But the key is to prepare guidelines about how this relationship will work out efficiently and sustain. ICT implies a new form of infrastructure that transports data or information as an addition to the existing forms of infrastructure; however this new kind provided a wider access to any information for the users at anytime. Since globalization deployed ICTs, with extensive content in every environment, cultures, characters began to share similar information in different locations. The major driving forces in this deployment are individualization, sustainability, globalization and ICT.

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