

The Future Business Environment and Its Impact on Property*

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- I. Introduction
- II. Changing Business Environment in the Digital Economy
 - 1. Emerging Digital Economies and New Business Paradigm
 - 2. The Transition to Knowledge-based Economy
- III. The Impacts of Changing Business Environment on Property
 - 1. Replacement of Real Space by Cyberspace
 - 2. Accelerated Relocation of Office toward Suburb
 - 3. Real Estate Transaction and Electronic Commerce
- IV. Toward Conclusion

I. Introduction

The 21st century is expected to be the age of digital economy based on developing the Internet and information technology. Many experts say this emerging digital economy is not a new fashion but a new industrial revolution in the terms of reforming socio-economic

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paradigm fundamentally just like the Industrial Revolution of the 19th century. Furthermore, the digital revolution is happening so quickly. We cannot but be surprised by the rapid diffusion of Internet around the world. The agricultural revolution of the Neolithic era required for the time of 5,000 years, and the diffusion of the Industrial Revolution in 19th century took nearly 100 years. But the digital revolution has dispersed around the world only in 30 years.

The wave of digital economy is becoming higher and stronger and is landing on the shore of every nation of the world. However, the digital revolution is just beginning. We cannot exactly predict the effects of the Internet and information on our life and economy at the beginning stage of digital economy. However it is certain that digital economy will derive the growth of world economy, and will change the business environment significantly, creating the new benefits and risks.

In this paper, I consider how the changing business environment in the 21st century, Internet Age will impact on property. The paper is divided into two sections. The first section depicts the nature of digital economy and new business paradigm. The second section deals with the impacts of changing business environment due to digital revolution on property. The focus of discussion is on what changes will be driven in the demand for office space, office location, real estate transactions, etc. by the digital revolution.

II . Changing Business Environment in the Digital Economy

1. Emerging Digital Economies and New Business Paradigm

The digital economy gets all the headlines these days. The digital economy is based on the rapid growth of the Internet. While advances in telecommunications and computing largely occurred side-by-side in the past, today, they converge in the Internet (U. S. Department of Commerce, 1999a). Recently the Internet is growing faster and faster. Fewer

than 40 million people around the world were connected to the Internet during 1996. By the end of 1997, more than 100 million people were using the Internet. According to Nua, as of May 1999, 171 million people across the globe had access to the Internet (U. S. Department of Commerce, 1999b). Approximately 320 million people around the world are expected to use the Internet during 2000, and experts believe that one billion people may be connected to the Internet by 2005.

The expanding pace of the Internet is really dramatic. This dramatic expansion of the Internet is basically driven by the digitalization of information. The ways of information flow in the digital economy are significantly different from them of the past. While the traditional ways of information flow had physical forms such as mail, report, face to face contact, in the digital economy information flow requires physical means no longer. Digital information is stored, processed, and transferred in the digital economy. The cost of digital information flow goes down sharply, thereby the explosive diffusion of the Internet becomes possible.

Internet technology is a direct driver of changes in commerce and in firm structure and operations. The Internet enables new network - based forms of activity that either span organization boundaries or represent new, more open forms of organization. Especially, the explosive growth of electronic commerce, combined with rapid changes in information, computing and communications sectors, is having a profound effect on the business environment.

The diffusion of the Internet requires a new business paradigm. The Internet business is not simply to adapt information and communication technology. Because the potential of the Internet business can be maximized only when new business paradigm that reflects the basic characteristics of the Internet is adapted, even though previous businesses exist still with the Internet. The basic characteristics of the Internet may be summarized as follows.

First, the Internet is a medium that enables two-way interaction unlike previous media. While media such as newspaper and broadcasting provide information for client unilaterally, the Internet is a device through which provider and receiver of information can interact each other. It means that new business is possible in terms of firm.

Second, the Internet enables the communication between clients faster and easier. Thereby, a new concept of community is beginning to be diffused with the Internet in virtue of such a characteristic. This also provides a new opportunity of Internet business for firms.

Third, the Internet promotes the personalization of business. In the past, mass production system that provides standardized goods or services for numerous people, if possible, was the main stream of business. Thus, one of the most important business strategies was to provide goods or services for numerous people at the minimum cost. But recently mass customization system that provides various goods or services for individuals is being generalized gradually. The Internet is a useful tool of mass customization.

2. The Transition to Knowledge-Based Economy

Today, the transition to knowledge-based economy is also an important force that change business environment fundamentally. The nature of contemporary capitalism itself has transferred to knowledge industrial economy with the digital revolution. In contemporary capitalism, it is difficult that production sector is certainly separated from service sector as hitherto. Thus the dividing line between service work and production work becomes indistinct more and more. The relative significance of knowledge-based service labor gets magnified, while the intensity of physical labor is reduced. The contemporary economy is going to the age of permanent innovation, and continuous restructuring for the innovation is happening in all aspects of industry and organization. The value of good is not determined only by functional and physical elements, but knowledge put into good is more important thing in determining the value of good. It is said that the age of knowledge-based society has set in.

The term "knowledge-based economy" results from a fuller recognition of the role knowledge and technology in economic growth. Knowledge, as embodied in human capital (as "human capital") and in technology, has always been central to economic development. But only over the last few years has its relative importance been recognized, just as that importance is growing (OECD, 1996). The economy is more strongly dependent on the production, distribution and use of knowledge than ever before. Knowledge-intensive service sectors, such education, communications and information, are growing even faster.

Investment is thus being directed to high-technology goods and services, particularly information and communication technologies. Computer and related equipment are the fastest-growing component of tangible investment. Equally important are more intangible investments in research and development(R&D), the training of the labor force, computer software and technical expertise. Although the manufacturing sector is losing jobs, employment is growing in high technology, science-based sectors ranging from computers to pharmaceuticals. Indeed, non-production or "knowledge" workers - those who do not engage in the output of physical products - are the most demand in a wide range of activities.

The advent of knowledge-based economy age is bringing to change the economic theory and model. In traditional economics labor, capital and resource are centered in production function, while knowledge and technology are recognized as external valuables. But the approach that includes knowledge among internal valuables is being developed. Because investment in knowledge alters other factors of production into new output as well as increase their productive capacities. Investment in knowledge is characterized by increasing return to scale. It is thus key to long-term growth of firm.

Therefore, firms and individuals cannot but spend more resources on producing knowledge. Real estate sector is not an exception to this trend as well. The knowledge industrialization and the establishment of knowledge management system in real estate service sector are becoming a task that cannot be avoided. The competition among professional services in real estate sector would be more intensive in process of knowledge industrialization, and thereby professional services would be integrated.

III . The Impacts of Changing Business Environment on Property

Information and communication technology (ICT) is recognized as a major foundation of the digital revolution and the knowledge-based economy. Its enormous and continuing advances make it possible to store, process and circulate an increasing amount of data rapidly

and inexpensively (OECD, 1999). The Internet is the fastest-growing segment of ICT, with more and more households and companies connecting up and using it. The price of accessing to the Internet has dropped sharply over the last years, owing to technical change and growing competition in the telecommunication industry.

Significant changes in real estate market are happening in the process of developing ICT, particularly the Internet. The most important characteristic of the Internet is that it has no limit of distance. The Internet makes it possible that business affairs are conducted at home, what is called telecommuting. Consumers can also use on-line service through the Internet, not visiting bank. According to a report of IDC, Market Research Company, the number of telecommuting households reached 27.4% of the United States total, as of August 1999, and Internet users grew from 25.5% last year to 30% this year. Telecommuting rate is expected to reach 50% by 2000 in the United States.

More significant than amount of these transactions, however, are new business processes electronic commerce enables and the new business model it is generating. It is certain that the traditional means such as telephone, mail, facsimile, face-to-face contact will not be significant any longer in commerce transactions. Electronic commerce has the potential of changing the economic structure fundamentally. Attempts to replace all economic activities with those based digital information are becoming the main focus.

1. Replacement of Real Space by Cyberspace

The rapid development of ICT and the explosive diffusion of the Internet are changing business environment fundamentally as mentioned above. First of all, it is replacing real space with cyberspace. In fact, the nature of digital revolution is in creating cyberspace through the Internet. Cyberspace is a place in which communications among computers happen. But it does not exist in both of my plastic computer and others computers. Cyberspace is just a network connected by the Internet. Cyberspace is intangible and invisible. But business affairs can be conducted there, like in real space. Customers can do shopping and firms can do commercial transactions in cyberspace, as if it was real space.

In addition, cyberspace has advantages over real space. First, cyberspace has the possibility of boundless expansion, while real space has spatial and temporal limits of expansion. Therefore, the occupancy cost of space is much cheaper in cyberspace than in real space. The occupancy cost of space in cyberspace may be nearly zero. Second, there is no limit of movement in cyberspace. If infrastructure for Internet is established, the movement to any place around the world is possible in cyberspace. The movement cost is also very cheaper. It cannot be comparable to the movement cost in real space. Such two facets of advantage mean that physical and fixed offices are not necessary any more.

For instance, venture boom has sprung up lately in Korea. As a number of venture companies are increasing rapidly, office rent is recently soaring, and the vacancy rate is dropping sharply. However, this trend will not continue in the long run. Because most venture companies base on the Internet technology, and they use cyberspace rather than real space. It is a natural phenomenon that the aggregate demand for physical space like office building is reduced due to the diffusion of the Internet (Gibson and Lizieri, 1999).

Changing business environment by the development of Information technology and the diffusion of the Internet does not only impact on the demand for office space in the aspect of amount. Information technology and the Internet are creating new types of office. High-tech office buildings such as intelligent building or smart building have already been constructed since the 1980s. In the past intelligent buildings or smart buildings providing high-tech service were the extraordinary cases, but today they are becoming ubiquitous. The demand for office space is changing qualitatively. In the future almost all office buildings might be intelligent. (Arai, et. al., 1998). Recently remodeling office building is highlighted in the construction industry of Korea, related with changing of the demand for office space in quality. As of 1997, the average market size for remodeling building is 35% of the total construction in fifteen European countries, and remodeling projects amounts to 31.7% of total construction investment in the United States. Remodeling market size of Korea is smaller than ones of these countries, but it is growing very rapidly. It is expected to be 14% of total construction investment by 2005 (Yun, 2000).

It is more significant than the construction of intelligent building or remodeling for

intelligent building that fixed space for business affairs might disappear in the long run. Even if it disappears completely, it will certainly be reduced gradually. As mentioned above, we are facing the age of business activities, overcoming the spatial limit through cyberspace. We can work in cyberspace besides actually existing physical space. The development of information communication technology is changing not only the type of business enterprise, but also is creating the new style of business practice. One of recent outstanding phenomena in business practice is to increase SOHO, teleworking or telecommuting using by telecommunication technology. Laptop computer and cellular phone also increase significantly the mobility of business activities.

In other words, it means that autonomy of choosing time and space is being expanded. Most workers still have their own fixed desk in office, conducting some affairs at home. But the significance of fixed office space is being reduced. The existence of physical office space itself may become uncertain beyond movement of work place in the long run. Papers have already disappeared one after another by computer in office. The emergence of paperless office will not take a long time from now. And then desks may disappear in office. Business space will show the tendency toward being intangible gradually (Kim, 1999).

As the future knowledge-based society is realized, business affair would have two facets. One is the intensification of cooperating system between branches, and the other is the maximum access to clients in marketing and sales, etc. The former is to activate the variable meeting space which maximize the interactions among teams according to the period, schedule and size of project, and the latter is to enlarge the business space which business affairs can be conducted. Especially the latter is highlighted with the development of information communication technology.

In the future just-in-time office, which users make a reservation of using time previously or non-territorial office, which workers conduct autonomously at convenient place for work with movable desk and cellular phone, will be universalized. Telework center may emerge beyond non-territorial office. Telework center is an office at which business affairs can be conducted at the dispersed branch office like stopping by hotel. Virtual office is another new type of office, responding to business environment. It is a kind of non-territorial office or free

address office, which workers can use anytime, anywhere. To put it shortly, future office space may be characterized as the uncertainty and variableness of place and time (Jae, 1997; Lee, 1997; Park 1997).

According to formal logic, physical business space would be replaced by cyberspace completely. But businesses will still be social activity and interaction in the future. All of the social activities and interactions cannot happen in cyberspace. New concepts of office will emerge continuously owing to changing business environment in virtue of the development of information communication technology, but it is impossible that physical business space is replaced by cyberspace completely.

2. Accelerated Relocation of Office toward Suburb

The reasons why business functions concentrate on urban center can be explain by external economy of agglomeration and centrality. Both of them are like two sides of a coin. Urban center has advantages in business activities, because it is the place that has the highest accessibility, where commercial and administrative function has concentrated from the past. Traditionally firms pursue proximity and easy access to assets and markets according to an economic logic based on minimizing factor, transaction, communication, transport cost, assuring a sufficient market scale and supplies at the same time.

But the recent development of ICT is undermining the traditional conception that a place of easy access to market as a node on transportation network is an optimal location. If a place has a good infrastructure for information communication, despite low accessibility to market physically, it has more competitive power than other places. Thus the location advantages of urban center, where rent is high, are reduced sharply as the development and expansion of ICT such as Internet. That is to say, It is not necessary that office is located in urban center where firm is charged with high rent.

The relocation of office to suburban area to settle the over-agglomeration of urban function in metropolitan center has been already discussed since the early 1970s. (Goddard, 1974) Information is defined as an important location factor in this discussion. For example,

Goddard and Pye reported that suburbanization of office location was being promoted by the rapid development of information infrastructure in suburban area. (Goddard and Pye, 1977) It is needless to say that this trend of office relocation from inner city to outer city will be reinforced as the expansion of Internet in the future. It is certain that the diffusion of teleworking and electronic commerce makes office location get freer and easier. The recent restructuring central place system in metropolitan area shows that CBD is not a primary central place any longer. Metropolitan area is composed of the dense nodes for business activities, and each node is connected with other nodes through electronic tool. At the same time, each central place in metropolitan area is connected with global network, and metropolitan area becomes a control base over global activities (Sasseb, 1995).

In this manner the development of ICT decentralizes business functions at metropolitan scale, while it agglomerates business functions in metropolitan area at global scale. Centrality of inner city is being reduced due to the development of ICT, and sectors using information technology frequently have the outstanding tendency of relocation from inner city to suburb (Kuray, 1986; Graham and Marvin, 1996). In respect that ICT will be advanced highly, the concentration of business function in inner city is expected to lose its necessity in the near future.

But the office function of inner city in metropolitan area would still be important. One of the reason why the office function of inner city will still be important is that the latest information in high-tech industry is not usually standardized but is ambiguous. Such information cannot be transmitted through information communication network completely. Continuous contacts, the interactions and discussions between the related people make it clear. Probably face to face contact is sometimes the most important in final decision-making. The fundamental defect of teleworking or telecommuting is that teleworkers or telecommuters cannot percept their partner's feeling amid interaction, exchanging information.

Teheran venture valley of Korea is exemplified as a good case in this point. Recently venture companies equipped with high technology are rapidly increasing in Korea. As of the end of November, 1999, there are approximately 4,700 venture companies in Korea. Most of them are concentrated on an small area, Teheran street, which is one of downtowns of Seoul.

This concentration illustrates the importance of informal network and the limits of on-line communication.

In the same context, the recent suburbanization of office location, which is driven by the development of ICT, is happening in the functions of back office rather than in the functions of front office or headquarters. Back offices might be disappeared absolutely, while headquarter might be bigger and bigger. Because the functions of headquarter, which converges, analyze and delivers information, get more important. On the contrary, branch or back office, which deals with low-class information, will be disappeared or downsized.

In addition, information communication network is preferentially established in the region where demand for information is abundant and information technology industry is profitable. Such regions exist in metropolitan areas where a lot of economic activities have already agglomerated. Therefore, the development of ICT has a tendency to reinforce the centralization toward inner city and its centrality. However districts where commercial facilities are sparse or transportation is inconvenient in inner city will be deteriorated relatively. Observers expect such districts will be information ghettos like slum.

3. Real Estate Transactions and Electronic Commerce

Electronic commerce is growing fastest among Internet businesses. The Internet makes electronic commerce affordable to even the small home office, and cause exiting market to change seriously. At the early stage transaction between business and customer like cyber-shopping mall was the main type of electronic commerce, but recently electronic commerce between business and business is being diffused. According to Forester research, business to customer electronic commerce was worth of \$8 billion in 1998, and it jumped to \$20 billion in 1999. Forester research also expects the Internet will be used for \$145 billion worth of commerce between business and customer, and for \$1,300 billion worth of commerce between businesses by 2003. The rapid growth of electronic commerce is due to the Internet's utility. That is to say, both of producer and customer can get profit in commercial transaction through the Internet. On the one hand, customer can reduce search cost for information, and can get information beyond region and nation. On the other hand,

producer can use the Internet as a new channel of circulation and marketing, and can improve business productivity.

The rapid diffusion of Internet and the activation of electronic commerce through the Internet are also impacting on real estate transaction. First of all, the imperfection of real estate market can be quietly remedied by the introduction of electronic commerce. That is to say, electronic commerce can make real estate market more efficient. The inherent features of real estate preclude its diverse markets from being highly efficient, because each parcel of real estate is unique and its location is fixed. No two parcels of real estate are physically identical. Although some parcels may be economically similar and could be substituted for each other. These characteristics of real estate make its market imperfection inevitably. The fixed location of real estate significantly localizes its market and raises the information costs of market participants (Corgel, et. al., 1998). In fact many types of real estate service have existed until now, relying on the imperfective diffusion of information in real estate market.

But electronic commerce is expected to change the nature of real estate market significantly. First, electronic commerce provides much more information related with real estate for its market participants, and helps them overcome the spatial and temporal constraints of market. Traditional practice of transaction in real estate market is that buyers visit and identify the subject properties, because their location are fixed. In spite of such efforts, there are some risks that buyers could not recognize physical or legal defects of the subject property. However, electronic commerce through the Internet enables buyers to identify the subject properties without visiting it, and to reduce information cost. Sellers don't have to depend on several real estate brokers, and thereby can reduce transaction costs and time related with the sale of real estate (Ryu, 2000). Real estate brokers can also carry on their businesses with all the Internet users as potential clients for 24 hours a day, and can do businesses beyond geographical constraints. It is said that the elimination of paperwork dramatically reduces the cost of a transaction by as much as 20 times (Waller, 1999).

Second, electronic commerce through the Internet will transfer the control power over real estate market from real estate service providers to customers. Until now, information inefficiencies in real estate market have given service providers such as real estate brokers the

control power over market. Thus customers could not help significantly depend on service providers in the transaction of real estate. However, information communication technology enables more information about real estate markets to be available to the general public (Baen and Guttery, 1996). ICT is transforming and transferring valuable information previously monopolized by the real estate profession into a virtually free service. Customers won't depend on real estate brokers any longer, because they can get "free" information about real estate markets on the Internet. Buyers can directly transact real estates with sellers through the Internet without depending on real estate brokers. In the future, direct transaction or auction between buyers and sellers through the Internet is expected to be more popular.

On the other hand, the role of real estate brokers in market is also expected to change significantly. In the past, the main role of real estate brokers is to mediate between buyer and seller and to achieve the transaction of real estate through face to face contact with them. But in the future real estate brokers will mainly play roles of listing properties for sale on the Internet as managers of Web sites, and searching information about properties for sale on Web sites. The future roles of real estate brokers is to collect and synthesize information related with real estate markets, and to provide them for customers. Thereby, real estate brokerage may transform from a numerous and small businesses to a few and large ones.

Third, electronic commerce through the Internet makes real estate brokerage network business. Informationalization of real estate brokerage due to the development of information communication technology has broadly two trends. One is the establishment of transaction information network on which real estate brokers share information related with properties for sale, and the other is real estate marketing using Web site. Information network for real estate transaction signifies that scattered information about properties for sale is gathered in a spot and component brokers of network share them. Most real estate brokers have monopolized information about highly localized markets, and existed as small businesses until now. But the advance of ICT enables real estate brokers to do nationwide or worldwide businesses beyond the geographical constraints. As a result, real estate brokers have no choice but compete at the nationwide or worldwide scale unlike the previous way of business. It may be said that information communication technology deprives real estate brokers of monopolies on localized markets and drives them to compete each other. However, in the

future, there is quite possible that the primary information about properties for sale will still be gathered in terms of local unit. Because the location of real estate is fixed, no matter how highly the information communication technology may advance. These changes mean that real estate brokerage may be restructured in the way that brokers network to share information related with real estate and divide revenues with each other.

IV. Toward Conclusion

The diffusion of the Internet is fundamentally altering the business paradigm as well as the way of individual daily life, and is creating the digital economy based on the electronic commerce and the information technology industries that make electronic commerce possible.

The future of real estate sector cannot be discussed without the advance of the Internet technology. The digital revolution now entered on its beginning phase. Nobody can predict the future business environment due to the digital revolution and its impacts on property. However, it is certain that the digital revolution will determine the destiny of real estate sector.

While the full economic impact of digital revolution on property cannot yet be precisely evaluated, its impact is significant. Especially, the infinite expansion of cyberspace through the Internet is a key source that changes business environment and impacts real estate sector. As cyberspace expands, the utility of real space decreases relatively. The diffusion of the Internet means the expansion of cyberspace. Therefore, it is possible to infer the impacts of changing business environment due to the diffusion of the Internet on real property in some measure, even though cyberspace replaces real space completely. At present, its impacts are restricted within narrow limits, and have also vague aspects in part. However, some symptoms as mentioned above have a significant implication about the future of real estate sector.

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< 요약문 >

21세기는 흔히 디지털경제시대로 전망된다. 이 논문에서는 디지털경제시대의 변화하는 기업환경이 부동산시장에 어떤 영향을 미칠 것인가를 고찰하였다. 인터넷의 확산과 정보통신기술의 발달은 종전과는 근본적으로 다른 기업패러다임을 요구한다. 이러한 새로운 기업패러다임은 의사소통의 쌍방향 관계, 공간적 한계를 뛰어넘는 공동체의 구성, 기업활동의 개인화를 기본특성으로 한다. 이와 같은 디지털혁명의 본질은 가상공간의 창출이라고 할 수 있으며, 이 가상공간의 창출이 부동산에 미치는 영향의 원천이 된다. 그 영향은 세 가지 형태로 집약된다. 첫째, 가상공간에 의한 실물공간 수요의 대체로 인터넷이 확산되면 될수록, 가상공간이 확장되면 될수록 실물공간에 대한 수요는 줄어들게 될 것이다. 둘째, 오피스 등 부동산 입지의 외연적 확산이다. 그러나 정보네트워크의 중요성과 온라인 의사소통의 한계 때문에 소멸 또는 외연적 확산은 주로 지원기능(back office)에서 발생하게 될 것이다. 셋째, 인터넷을 통한 전자상거래의 활성화 등에 의해 부동산시장의 효율성이 증대하게 될 것이며, 그에 따라 부동산서비스산업의 구조도 변화하게 될 것이다.