Whither Away Office Space as we Know it Today?

by Alan R. Winger

The movement of more and more business activity into the Internet economy raises concerns about the long-term future of the office building market as we know it today. While these concerns have been pushed under the rug by a booming economy and relatively low interest costs, they will arise again. The business cycle is not dead and the movement of more and more economic activity into the virtual world is inevitable. If so, doesn't it imply a very bleak future for real estate that houses office activity today?

This manuscript will address the preceding question. The author will focus on certain elements in the demand for office space as he sees as relevant to any evaluation of the impact of the digital/information revolution on office markets. He believes the arguments offered, provide the basis for some reasonable speculations about the long-term future of the office space market. To preview these, the prospects over the several decades are by no means bleak. Beyond that time, radical change becomes a real possibility. While office space will never whither away, what we consider to be such space and where we will find it is likely to be changing substantially as we move into the second half of the 21st century.

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SOME HISTORICAL PERSPECTIVE

The activity housed in office buildings is for the most part head-using activity.[1] A basic ingredient in that activity is information. The folks involved are concerned with many matters (*e.g.*, planning, monitoring, researching, controlling, marketing, purchasing, and finding human resources) that are essential to the success of the enterprise. What they do usually involves using information in ways that help them deal with the many practical problems that arise in running most businesses.

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outgrowth of the industrial revolution. What that revolution did was to increase the scale of operation in many businesses. It was a reflection of an emerging technology that fostered a high degree of specialization, which to take advantage of required a large-scale operation. Firms had to be big to be a part of the party and "big" meant they had to have operations and markets that often times spanned great geographic distances.

All this came about because there were significant productivity benefits to be realized by breaking tasks down into many highly specialized parts. But doing so gave rise to the need for a great deal of coordination. Much effort had to be aimed at making sure everything fit together and worked smoothly. This meant massive controlling and monitoring. And the emerging technologies made this all the more difficult by the complexities they introduced into the process. To do what had to be done to carry out a successful operation required much information and increasing amounts of head-using activity to use that information. Add to this the fact that most markets began to evolve in ways that fostered product competition. This led to a setting in which research and development along with extensive marketing activity flourished, adding further to the need for head-using activities.

That these activities became concentrated at particular sites in particular buildings was no accident. It was the result of economic decisions aimed at minimizing the cost of assembling and organizing information and maximizing the benefits from its use. Given the information transfer or communication technologies of the time, being close to one's co-worker was the cheapest and most effective way of getting and using much of the needed information in many business activities.

That a good deal of this activity was housed in the "skyscraper" structures built in the center of many of our cities in the early and middle part of the 20th century was no accident either. Given the patterns of residential living and the transportation systems of the times, being in the center of a city made economic sense. Sites in the center were convenient to where office workers lived. They also had good access to an assortment of other inputs that had bearing on the bottom line.[2]

The suburbanization of the American city, of course, changed all this, making it and central business district locations less accessible to the office worker. As a result, many office activities followed residents

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to the suburbs, forming the core of most of the edge cities that emerged in the second half of the 20th century. There was geographic dispersion with a lot of the activity being placed in a less dense setting. Much of this was activity that had close links to suburban residents—finance, real estate, and professional activities like medicine and law. What remained in a number of central cities was head-using activity not closely allied to the consumer; rather it was activity that was usually part of a bigger more complicated operation that required a good deal of interaction among the many folks who were a part of it, *e.g.*, headquarter operations. Even so, not all of this kind of activity remained in the central city. Some of it moved to the suburbs to be close to transportation hubs, *e.g.*, a major airport, or to find a more spacious site with good environmental features. The key in all such moves was to find a location that had access to something of importance to the mover.

This is how it was before the new economy began to unfold in the early part of the 1990s.

THE NEW ECONOMY: WHAT IS IT?

The new economy is, in the eyes of some, something that has come into being as a consequence of revolutionary changes in the information industry, changes that are being diffused throughout the entire economy. Many who talk about the new economy characterize it as the digital economy.[3] They see it as an economy in which information is digitized and communicated through digital

networks. The result is large amounts of information compressed into very small spaces and transmitted over great distances at incredible speeds and minimal costs. What this has done, among other things, is to greatly enhance the role of knowledge in the economy. With instant access to relevant information, so much more can be done and what we do increasingly puts knowledge content into what we produce and how we produce it.

Discussion of how all this works itself out in the way markets organize economic activity emphasize its impact on market competition. Markets are said to be much more competitive, filled with pressures that increasingly take the form of quality rather than price competition. The underpinning of these pressures is innovation. Firms are much more innovative than in previous years. The aim is to bring new and/or better products to market more quickly than competitors. But doing this often means doing things in ways that complicate the production process and gives rise to the need for smarter inputs. Knowledge thus becomes critical to a successful operation in today's hyper-competitive markets.[4]

These descriptions, of course, characterize activity that is on the cutting edge of the technological revolution, especially the digital revolution. While change is everywhere, a great deal of the economy remains relatively the same; it is simply a matter of degree. What makes this all so relevant to the consideration of office space is its implication with respect to how businesses operate. Apparently, significant changes in how we do business are on the way. Indeed, some of the expected changes have already happened in firms that are in the center of the technological storm.

THE NEW ECONOMY, HEAD-USING ACTIVITY & THE OFFICE BUILDING MARKET

With knowledge growing rapidly in importance as an input in production, we seem to be moving into an economic world dominated by head-using activity. If so, aren't we headed into a world in which office space demands will mushroom or maybe even explode upwards?

Certainly, there are some recent signs of improvement in the office building market that seem linked to the information revolution. In eyes of the new economy guru, we have become a nation of knowledge-oriented entrepreneurs dedicated to building the electronic infrastructure needed to take us into a digital economy. Right now it is the small firms making all the noise, firms that are searching out "cool" space often found in or around the center of the city. The current revival of the core areas in more than a few cities is a reflection of this economic trend.

But is this something that will last? There is reason to believe that it might not. There is one impending element in the digital/information revolution—the expected dramatic reduction in communication costs—that could "upset this apple cart." When the infrastructure now being built around the Internet—or whatever else develops—is fully put in place, we should have an electronic mechanism that will allow us to communicate or transfer information quickly anywhere at almost a zero cost.[5] If what we need to communicate in our monitoring, planning, purchasing, or marketing activities can be done electronically, it should happen if markets remain as competitive as they are now. In fact, it has begun to happen.

How will this affect the existing office building market? If the personnel currently in these buildings are there to minimize communication costs, substantial cost reductions in ways of communicating that do not require physical co-location will remove some of the incentive to remain where they are. But can we then expect office activities to "fly their current coop?"

Obviously, what is important here is whether those currently housed in office space will choose to communicate information electronically or continue to do so on a face-to-face basis. Their choice will be influenced by the kind of information they wish to communicate, insights into which flow out of a recognition of some important distinctions that can be made with respect to information.

SOME IMPORTANT INFORMATION DISTINCTIONS

In considering the question of the choice of a communications medium, the first thing to note is that what is communicated — information — is far from homogenous. This lack of sameness has roots in the very nature of information itself. Consider several important distinctions that can be made about it.

First there is the distinction between information and knowledge. Knowledge is the part of information that is interpreted. It is something that can be related to meaningful behavior and experience. It really tells us something. The second is between codified and tacit knowledge. Codified knowledge is the stuff that can be written down; it is the basic

raw material of an electronic transaction. Tacit knowledge, on the other hand, is that which is in our heads; it is intuitive; it cannot be written down. Finally, there is a distinction between transmissions. One is the simple transmission with information flowing from sender to receiver. The other is a transmission that involves interaction between sender and receiver.

Obviously, the information we communicate in business is not homogeneous. Some of it is pure data; more of it is knowledge, some of which is codified. But a good deal of it comes out of the head of the sender with a lot of interaction between the sender and receiver. What we communicate comes in different shapes and sizes, not all of which is suitable for transmission through electronic means. Indeed, the means we have today is best suited for transactions involving simple transmissions of data that can be written down. While interaction is possible and we can transmit more than simple data sets, most business-to-business e-commerce today consists of relatively simple transactions. When there is complexity and the need for a lot of interaction, the communication is likely to be through a face-to-face meeting.[6]

Given today's information technologies, being face-to-face remains the richest means of information exchange, encompassing all of the senses, logical discourse, and a feedback mechanism that is both immediate and intimate. With face-to-face communication, we can bring to bear more knowledge critical to the solution of complicated business problems compared with any other means including electronic communication.[7] That is why much business communication is still carried out on a face-to-face basis. But this may not always remain so.

DECLINE IN FACE-TO-FACE COMMUNICATION TO COME

Given what we know today, no one can doubt the coming diminution of face-to-face communication in business. The process has already begun and will accelerate with oncoming technical developments that will reduce the richness advantage face-to-face meetings now have over electronic get-togethers. Much more sophisticated kinds of electronic interaction lie ahead of us. While we may never be able to duplicate in cyberspace all that we can do when we are face-to-face, we are going to be able to do a lot more.[8]

When this sophistication materializes, the cost benefits it provides will surely be incentive enough for moving much more of the communication in our head-using activities into the electronic world, especially given the hyper-competitive markets in which most firms are expected to operate. The opportunities will be there and, equally important, we should be in a good position to take advantage of them. We are, after-all, rapidly acquiring a population that is skilled in the art of navigating in this electronic world. The use of the computer and other electronic devices are fast becoming a part of what we learn even at the elementary grades of our education. Combine this with the progress that is being made in the efforts to make the entry-way mechanisms user-friendly and you have almost an explosive increase in the proportion of the population capable of functioning in cyberspace. Moreover, this seems to be a population that is increasingly disposed to communicate in this world.[9]

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Combined, this suggests a world in which electronically-mediated information will grow substantially in importance, leading to a significant diminution in face-to-face communication in the conduct of business. This does not bode well for the office space market as we know it today. But it is also something that won't happen over night.

WHY FACE-TO-FACE BUSINESS COMMUNICATION WON'T DISAPPEAR QUICKLY

Face-to-face communication won't disappear quickly, in part, for a reason to be found in the revolution leading to its diminution. Through its impact on how we do business, the information revolution is leading to markets that are more global and increasingly dominated by innovation. The outcome for many firms is a lot of uncertainty and fuzziness not only about how to get where they want to go, but where they want to go in the first

place.[10] The business world is a much more complicated place in which to operate than it was just a short time ago.

Complexity is, of course, nothing new and is no reason, in and of itself, for excluding the communication involved in a complex business operation from the world of cyberspace. To the extent that we have codified knowledge of a complicated process, we can communicate that knowledge to others electronically. We have been doing it for years in defense-related and aerospace activities. But having such knowledge is not something that just happens. It has to be acquired and we do this through systematic thinking (analysis) and/or experimentation as well as through computer simulation. Further, codified knowledge is something we usually don't have when dealing with the complexity that comes out of innovation. In the early stages of the development of the idea, we deal with problems that don't have simple answers or certain outcomes. Indeed, we often deal with something that has problems in the beginning we do not even recognize.

How do we handle all of this? We apparently found out some time ago that it helps to assemble teams of knowledgeable people to work collectively on getting a good start. We have also found that it helps to have these people working in close physical proximity interacting on a face-to-face basis.

In time, we gain the knowledge and understanding necessary to articulate what is involved in the development of an idea. In other words, we acquire codified knowledge, meaning knowledge that *can* be transmitted electronically in today's world. What we are working with then becomes a commodity that *can* be involved in e-commerce and, therefore, its ties to the office building market are loosened.

While all this is happening now, the dominant element in the information revolution as it has developed thus far is the work of innovators who are currently adding substantially to the trailblazing kind of activity that fosters face-to-face communication. We can look at what is going on in the current technological maelstrom as the generation of complexities in business operations that offset some of the push the information revolution is giving us into cyberspace. Most of the problems this complexity gives us are being dealt with in a time-honored way—collaboration with collaborators working in close physical proximity to one another. While we see this all around us, it is especially pronounced in the growth of cutting-edge high-tech communities such as the Silicon Valley, the Golden Triangle, parts of Boston, and Austin, Texas.

Over time, we will come to solve these problems in a way that gives us codified knowledge of what is involved. This, in turn, will lead to more and more electronic encounters, particularly when the electronic channels come closer to simulating what we can do when face-to-face. But the current pace of innovation suggests that problem-solving that fosters face-to-face communication is not about to diminish. While innovation continues at its present pace, it is hard to see a massive shift of business communication into cyberspace occurring. My best guess is that what is going on now should take us out over the next several decades.

Then there is the matter of the social nature of people. Being close to one another physically has social effects that can enhance productivity. The absence of day-to-day encounters is apparently one of the reasons why telecommuting has yet to live up to its earlier promise.[11] While by no means do all the relationships we have in a traditional work situation make us happy — indeed there is misery in many of them — the overall effect seems to be positive for most. Simply working in close physical quarters with others apparently generates productivity benefits that will be hard to reproduce in a virtual world. There is undoubtedly an irreversible minimum of face-to-face communication that will decorate the business landscape as far into the future as the eye can see.

INFERENCES AND SPECULATIONS

It is not difficult to find prognostications of the upcoming demise of the office space market as we know it today.[12] In my view, such speculation is unwarranted if the concern is with the next several decades. The information revolution is exerting a good deal of influence on how we do business in most areas of the economy, but the changes thus far, with exception of a relatively small segment of the economy, can hardly be considered as radical.

Everyone agrees this revolution is providing businesses with the means of dealing with their information problems in creative and cost-effective ways. But by no means do all information problems have solutions that can be found with what that revolution has given us so far. That we still communicate with one another on a face-to-face basis when dealing with a great many knotty business problems

(even in cutting-edge areas of the technology) is not the result of some people continuing to live in the dark ages. It is a consequence of having a technical infrastructure that cannot do what face-to-face encounters are able to do when dealing with certain kinds of problems. It is also a consequence of the technology itself, creating activities that can be best carried out when the participants are physically close to one another. All this bodes well for the existing office building market.

But—and this is a big "but"—as technology improves, it will (over time) provide us with something that comes close to mirroring what we can do now face-to-face. As this happens, the basic structure of the office building market will change, just as it did when the automobile came to dominate the journey to work. This time, however, the ultimate result could be much more dramatic. The specifics of such change are, at this time, anybody's guess. But what we can say is that significant changes are on the way both in what the market looks like and in the way we will have to look at it to make sense of it.

As noted earlier, traditional models of the office building market have emphasized the accessibility of the site of the building to workers, customers, and suppliers of certain kinds of services as the key to its value. To the extent that our head-using personnel no longer need to be close to one another and those they serve and are served by, accessibility in the classic sense loses its importance.

This is going to happen, but not overnight. Nor will it be an abrupt change.[13] The answer to the question of when will depend, in part, on how we are able to deal with the complex problems being given to us by our unfolding technologies. Right now, dealing with those problems is strengthening the demand for office space. The race to build our cyberspace infrastructure is, in fact, helping to revitalize parts of some of our cities.

Suppose the pace of innovation slows. The impetus it is currently providing to office space demand would ebb and could substantially be reduced, which would not bode well for this market.

Of course, there are those peddling the idea that we are now living in a world in which there will forever be innovations that change what it is that we do and how we do it in the business world.[14] If so, there will not be a quick retreat from the need to huddle close to one's co-worker in order to deal effectively with the complexities and uncertainties continuous innovation brings about.

AUTHOR'S CONCLUDING THOUGHTS

Personally, I am less sanguine about such things. Historically, innovations have come in spurts and there seems to be no compelling reason to expect this to change in the future. Thus, in my view, as technology gives us electronic means that mimic more of what we can do face-to-face and the current spurt of innovation begins to wind down, virtual head-using activity as a proportion of the total will begin to increase substantially. If you accept these two hypotheses, there will come a time when the decisions made about where to conduct such activity will be based on considerations much different from those of today. This could very well mean dramatic changes in the office building market as we now know it.

Just how much change and what kind of change will, in my view, depend both on technical and social elements in the equation. The technical elements are those that will determine just how closely we will be able to mimic the strengths of face-to-face communication and whether any currently unrecognized strengths in electronic communication emerge as we develop the technology. In the minds of those enamored with the subject, this is a no-brainer. The technology will deliver the means of radically transforming how we communicate and hence how we organize our businesses. But it is well to remember that the same thing was said about the telegraph, the telephone, and even television.

More important, as I see it, are the social elements as they come to bear on the question of the future organization and operation of business. There can be little doubt about the prospect of more physical isolation of the individual in how we organize our business activities in the future. But how much more is going to depend, in part, on how we view that prospect. Just how much of a social animal are we? How important is interaction on a face-to-face basis over the course of a workday?

What all this says to me is that if we want real insights into what is going to happen to the office building market over the long term, we are going to have to focus more on subject matter that has traditionally fallen outside the analyses we have been making of this market — social relationships that reflect such things as feelings and trust. As I have found out, what we know about these things is not

easily gleaned from the disciplines in which they are currently being studied, especially if we want to fit what they tell us into some kind of market framework. To get what we want to know will require a mind that is open to interdisciplinary work.

My broad-brushed view of what is likely to happen is that there will be more geographic dispersion of the head-using activities that now fill up our current office space. This movement, however, need not be to far away places; nor must it dramatically reduce the density of the population in most places. What it will be is movement that is closely co-located to activities that are now outside present-day office buildings, including what happens in the home. We are, in my view, social animals who will resist moves that isolate us from one another. Yet we are also economic animals who will be more than willing to take advantage of technologies that will be giving us the means to avoid some of the problems that arise when we concentrate our activities in geographic space, *e.g.*, congestion, pollution.

In my view, we are probably headed into a world populated with urban villages — places where people work at sites of their own choosing but choose to live near one another in well-thought-out and well-planned communities. What this implies with respect to "office space" is a matter that, in time, will become a major preoccupation of those who analyze the office space market. REI

NOTES

1. Office activity is not easily defined because it is work that cuts across both occupation and industry classifications. We can say in a general way that it involves mental activity as opposed to physical activity. And it is mental activity only as opposed to mental activity that is combined with physical activity. There also gradations in the level of thinking required, going from the low-level requirements of clerical work to the high-powered requirements of the executive staff. Clerical work, however, is diminishing so that office work is increasingly becoming head-using activity in the sense of dealing with complicated problems.
2. For a detailed discussion of the economics of these location decisions, a discussion that emphasizes the importance of access, see DiPasquale, E. and W. C. Wheaton. *Urban Economics and Real Estate Markets*. Prentice Hall: Englewood Cliffs, New Jersey, 1996, Chapters 5, 6 and 11. Also see Clapp, J. M. *Dynamics of Office Markets*. Washington D.C.: The Urban Institute Press, 1993, Chapter 4.
3. One of the more celebrated promoters of this view of the new economy is Don Tapscott. See *The Digital Economy*. New York: McGraw-Hill Publishing, 1996. See also Kevin Kelly, *New Rules for the New Economy*. New York: Viking Press, 1998 and Department of Commerce, *The Emerging Digital Economy*. Washington D.C.: Department of Commerce, 1998.
4. For an insightful discussion of the nature of knowledge as an input into business activity in our new economic world see Teece, D. J. "Capturing Value from Knowledge Assets: The New Economy, Know-how and Intangible Assets." *California Management Review*, 40 (3), 1998, 55-79.
5. See *The Economist*. "The Death of Distance: A Survey of Telecommunications, (Special Supplement)." September 30, 1995, 1-28.
6. This is not to say that there is no interactive communication currently being carried out in cyberspace as indeed there is. It is to say that the kind of electronic interaction currently possible does not measure up to many of the communication needs in today's business world. For a discussion of what is going on in the virtual world today see Duarte, D. L and N. T. Snyder. *Mastering Virtual Teams*. San Francisco: Jossey-Bass Publishers, 1999.
7. See for example L. Trevino, R. Duft and R. Lengel. "Understanding Media Choices: A Symbolic Interactionist Perspective," in Falk and Steinfields (ed.), *Organizations and Communication Technology*. Newbury Park, California: Sage Publications, 1992.
8. For one discussion of some of the possibilities see M. Dertouzos. *What Will Be: How the New World of Information Will Change Our Lives*. San Francisco: HarpersEdge, 1997, Chapters 3, 4 and 9.
9. See R. D. Putnam. "The Strange Disappearance of Civic America." *American Prospect*, Winter 1996, 34-48.
10. See B. Arthur. " Increasing Returns and the New World of Business." *Harvard Business Review*, July / August, 1996, 100-109.
11. See N. Pliskin. "Explaining the Paradox of Telecommuting." *Business Horizons*, March / April, 1998, 73-78.
12. See for example Roberts, S. *Harness the Future*. Toronto: John Wiley and Sons Inc., 1998, Chapter 4.
13. One recent survey of the location decisions of "information-age" companies is suggestive of the kind of changes that will be a part of this process of change. See O'Mara, M. A. "Strategic Drivers of Location Decisions for Information-Age Companies," *Journal of Real Estate Research*, Vol. 17 (3), 1999, 365-388.
14. See for example Schwartz, P., P. Leyden and J. Hyatt. *The Long Boom*. Reading, Ma.: Perseus Books, 1999.