Real Estate Review

A WARREN, GORHAM & LAMONT PUBLICATION Vol. 19, No. 3/Fall 1989

The Real Estate Institute of New York University

WG&L

The dimensions of technological change are far broader than "smart building" issues.

The Real Estate Business and Technological Obsolescence

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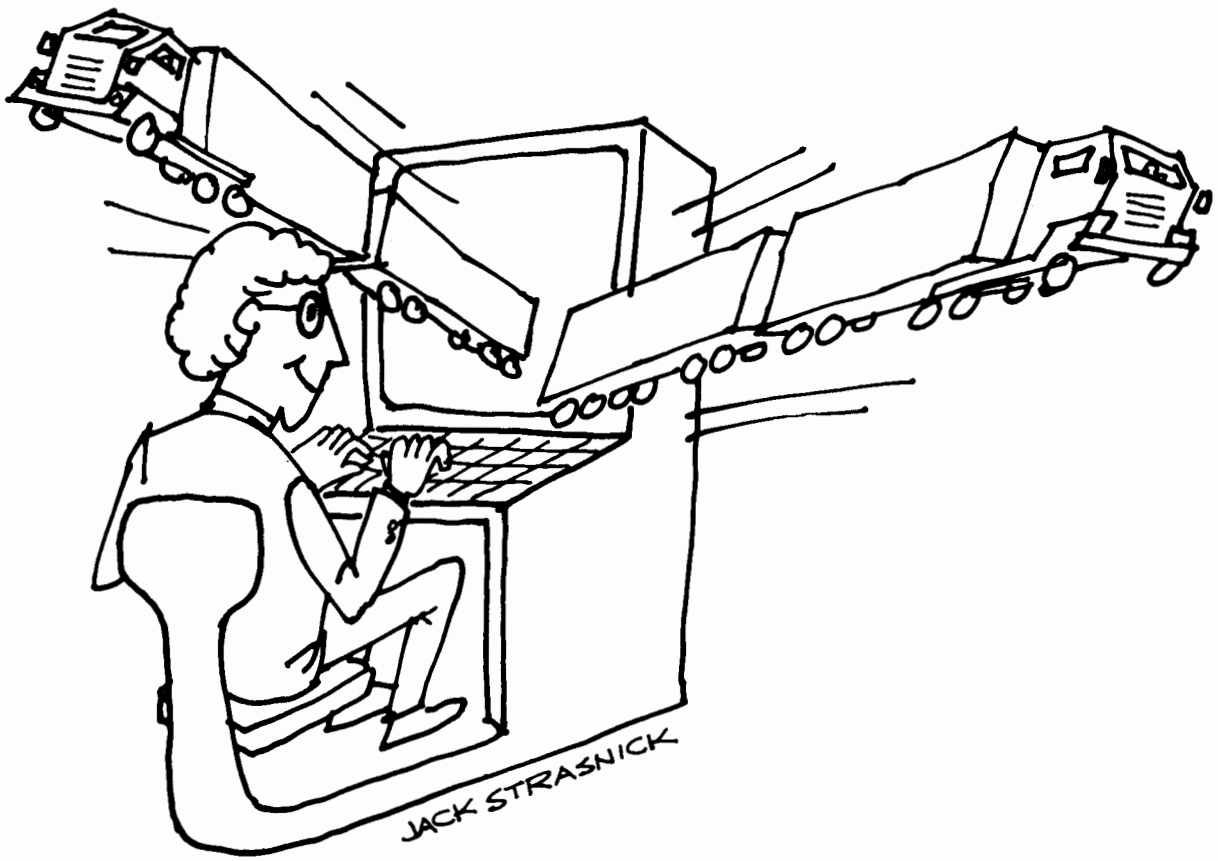

THE REAL ESTATE business is dead. Long live the real estate business. The survivors of this long-thriving business will be those who recognize that their function is really to provide services to their customers' businesses and who therefore adapt those services to meet ever-changing customer requirements.

In 1987, I was lecturing in Moscow to a group of Soviet economists. Their interest in recent changes in the U.S. commercial real estate business, and the implication of those changes for the Soviet Union, led me to an important realization. A major problem there is the inefficiency of the distribution system, where the government makes products that people want, but can't seem to deliver them without long lines and terrible

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waste. Thus, while I was trying to describe an industry engaged in managing and investing in warehouses and shopping centers, my Russian colleagues thought that industry was the business of distributing goods and services from the factories of the United States to the consumer. In an important sense, they were correct.

WHAT IS THE "REAL ESTATE" BUSINESS?

When asked what business they are in, most real estate professionals answer simply "real estate." But that response is no more revealing than would be the response of a businessman who is involved in just "business." Individual real estate executives are really functional experts in specific areas like sales, finance, construction, or design. The medium through which they exercise their talents is called real estate.

In the vertical chain of business activity, the functions most real estate firms perform are (1) assisting tenants to distribute goods and services (shopping centers and warehouses); (2) assisting tenants to create, market, or stimulate ideas, and to process information about their products (office buildings); or (3) providing tenants with what the architect Le Corbusier called machines for living (houses, hotels, and apartments).

Perception of the role of real estate as a service activity to other industries was not important as long as our rapidly developing country continued to have a general shortage of developed real property. The business of simply providing the customer with physical space, even if it was not optimal for their specific purposes, was in itself a business. In fact, the primary skill base of many real estate developers has been the ability to make deals, to put together the divergent public and private interests necessary to develop a project, rather than specific technical skills. Most innovation in real estate development has come from industry customers (tenants) or suppliers (finance and construction firms). Additionally, much of the success of developers has depended on such exogenous factors as inflation and population growth, rather than on the quality of their product or their ability to serve the ongoing technical requirements of their customers.

THE DEMISE OF THE TRADITIONAL REAL ESTATE BUSINESS

From ancient times until as recently as the 1930s, the real estate business was overwhelmingly concerned with farmland. In fact, the largest owner of commercial real estate in the United States, The Prudential, made its mark in the 1930s as an important lender on agricultural property. But technological breakthroughs made obsolete most of this agricultural real estate business. Developments in mechanical irrigation and chemical pesticides made U.S. farmland so efficient and so improved crop yields that they wiped out the agricultural real estate business, as well as 90 percent of the jobs in food production. Recent developments in genetic engineering promise to make these early breakthroughs pale by comparison. New scientific progress will make the demand for and the value of farmland fall even further. The age-old investment adage "Buy land, they aren't making any more of it" might be restated in the United States as "Sell land, they don't need any more of it."

Technological advances in information processing are beginning to affect existing commercial real estate in much the same way that mechanized irrigation and chemical pesticides affected farmland in the 1930s. Moreover, fundamental research in other scientific areas may lead to new breakthroughs, like those of genetic engineering in agriculture, that may more than equal the effects of recent information-processing advances. The effects of these advances on the distribution business (industrial and retail properties) are apparent, but the changes are also beginning to affect the information-processing (office) and living (residential properties) businesses.

Recent Technological Change

Few people realized the economic implications of the development of the first electronic computer, Eniac, built at the University of Pennsylvania in 1946. For the next thirty-five years, electronic computers evolved primarily as tools for engineers and accountants, that is, for paper pushers working with abstract concepts.

Then the Economic Recovery Tax Act of 1981 (ERTA) virtually forced businesses to retool their physical plants because ACRS depreciation and investment tax credits gave businesses a grant of 58 percent of the cost of new equipment.[1] But at that time, retooling did not result merely in the expected 20 percent increase in productivity. The computer spread from the desk of the accountant and the engineer to the lathe, the automobile, and the supermarket checkout counter. The results were massive productivity increases that led in the United States to a meteoric rise in gross national product from 1981 to the present. Recent evidence suggests that the past eight years of economic growth may be only the beginning. The technological advances in many areas have already reached critical mass, and are themselves leading to new breakthroughs that, in turn, will cause even steeper rises in productivity.

Many of the technological advances have changed the way in which the country conducts distribution (industrial and retail), information-processing (office), and living (residential) activities, in ways that may have rendered obsolete much of the nation's commercial real estate. The following paragraphs examine how technological breakthroughs are affecting the distribution (industrial and retail) real estate business. The effect of technological changes on the office and residential businesses will be discussed in other articles.

THE EFFECT OF TECHNOLOGY ON RETAIL DISTRIBUTION

In pre-World War II America, efficiencies created by centralizing the credit, buying, and selling functions of retailing caused downtown department stores to replace individual Main Street merchants. In post-World War II America, the growth of automobile use resulted in suburban development, and Main Street merchandising was replaced by neighborhood and regional shopping centers. Now similar technological advances are replacing department stores and shopping centers alike, and even more fundamental changes may even make obsolete most of the nation's existing inventory of retail space.

The traditional department store fell into obsolescence as the information-processing explosion made it possible to decentralize the credit, buying, and selling functions. The universal credit card spawned by the information explosion rendered the department store credit card obsolete, and it survives only as an attempt by certain stores to retain customer identification. The proliferation of efficient nationwide distribution systems and the national promotion of high technology and high-fashion products has shifted customer loyalty from individual retailers, like Macy's or Bloomingdale's, to individual manufacturers, such as Sony and Levi. Even more important, the rapidly improving life-style of many consumers has brought shopping much lower on the scale of recreational options, a development that may result in the demise of many traditional department stores and shopping centers.

The department stores that have survived have done so in name only. They have abandoned their traditional role of supplying customers with what they needed—appliances and functional clothing for example—and they attempt to persuade those customers to purchase "life-style." Gone are yesterday's departments, like major appliances, womenswear, and menswear. Today's departments are high-fashion selling areas often identified by a national brand-name manufacturer. Successful department stores today sell entertainment, not merchandise.

The traditional department store role of supplying customers with what they need has been assumed by the mass merchants, like Wal-Mart, Kmart, or Target. Their primary strengths lie in efficiency of operation. Today, a customer can enter, purchase items, and leave the premises of a mass merchant far faster than those transactions can be performed in department stores that supposedly offer service. In the television-dominated age, consumers' brand loyalty is won long before they enter the store. So service has shifted from having a helpful salesperson assist in product selection, to having an efficient operation that allows customers to exit quickly with their merchandise.

Technological Change and Retail Property

All these changes have astonishing implications for the retail real estate investment business. Average sales for all retail tenants today is approximately $100 per square foot. Yet most new concepts in retailing (both for anchor and nonanchor tenants) produce average sales of between $200 and $500 per square foot. Thus,

[1] Accelerated cost recovery system (ACRS) depreciation allowed a business to deduct from short-term (three to five years) taxable corporate income (then taxed at 48 percent) virtually all of the cost of new equipment, which, when added to the 10 percent investment tax credit then in effect, granted the business a tax incentive equal to 58 percent of the equipment's cost.

the new retail complexes are two to five times more efficient than traditional stores at marketing and distributing merchandise. If current trends continue (and assuming a stable population and no real retail sales growth), the U.S. economy will soon need only one half to one fifth of the currently existing supply of shopping centers.

Technological Change and Industrial Property

Similar changes are occurring in the industrial real estate business, which is affected by many of the technological advances that have altered retailing, along with some important breakthroughs in transportation. Because the new retailers, as indicated above, can turn over their inventories two to five times as fast as earlier retailers, they need efficient warehousers that can match the more rapid pace. The information-processing technologies that enable retailers more accurately to forecast customer demand for merchandise are also available to manufacturers and distributors of nonretail products. The engineering concepts that improve the flow of merchandise on retail floors work equally well in factories and warehouses. Furthermore, the time it takes to manufacture a finished product has also fallen rapidly, reducing the need for work-in-process inventory as well as finished goods. The net effect is that the widget manufacturer with 400 different stock-keeping units (SKUs) who, in order to serve his customers, once had to maintain an inventory of 40,000 units (1000 per SKU), might now be able to offer the same service level to his customers by stocking only 8,000 to 20,000 units. To the industrial real estate developer, this may mean the tenant now needs no more than one fifth to one half the storage space.

The Overnight Services

These explanations for the declining needs for both retail and industrial space do not take into account recent technological breakthroughs in transportation. The development of overnight delivery services (Federal Express was only the first) has radically changed the distribution patterns of corporate America. It is now commonplace for manufacturers to maintain inventory of strategic small parts in just one place, from which they serve the entire United States. Only ten years ago, such manufacturers commonly stocked key parts that a customer might need overnight in as many as ten separate places. Recently, as development of the fax machine and the communications modem has cut into the business of the overnight deliverers, they have sought the business of the department stores and mail-order retailers. The consumer impact of low-cost overnight delivery may change the way in which retailers distribute goods as much as the original department store changed Main Street.

CONCLUSION

Today 80–90 percent or more of the cost of retail merchandise is the cost of distribution. The actual manufacturing materials and labor typically cost 10–20 percent of the retail selling price. Thus, despite the advances described in this article, the real product innovations of the 1990s will come in the distribution, rather than in the manufacture, of goods and services. For the real estate business these changes must be reflected in a reduced need for space.

In a climate of rapidly declining need for commercial space, the survivors of what was once called the retail real estate business will be those who recognize that they are really in their customers' businesses, and those who adapt to meeting their customers' ever-changing requirements.

As will be demonstrated in other articles, in the office real estate business the survivors may be those who realize that they are in the business of helping their customers process information. In the residential real estate business the survivors may be those who understand what Le Corbusier meant by his definition of a home as a machine for living, and who are aware of the rapidly changing definition of the word "living." And in all these businesses, the age-old adage "location, location, location" will have to be restated as "information, information, information." ■