

# What the IT Revolution Means

**FOR REGIONAL ECONOMIC DEVELOPMENT**

**Paul Sommers and Daniel Carlson, The University of Washington**

The IT revolution doesn't only change the way we work, shop, and talk to one another; it also is changing the way our cities compete. In the context of a new global economy, this report offers ways city leaders can keep their region on the cutting edge.

Information technology (IT) saturated American business in the 1990s, and countless new companies sprang up around internet applications. In response, economic development officials across the country have tried to catch the “tech” wave by stimulating the growth of high technology companies and “clusters.”

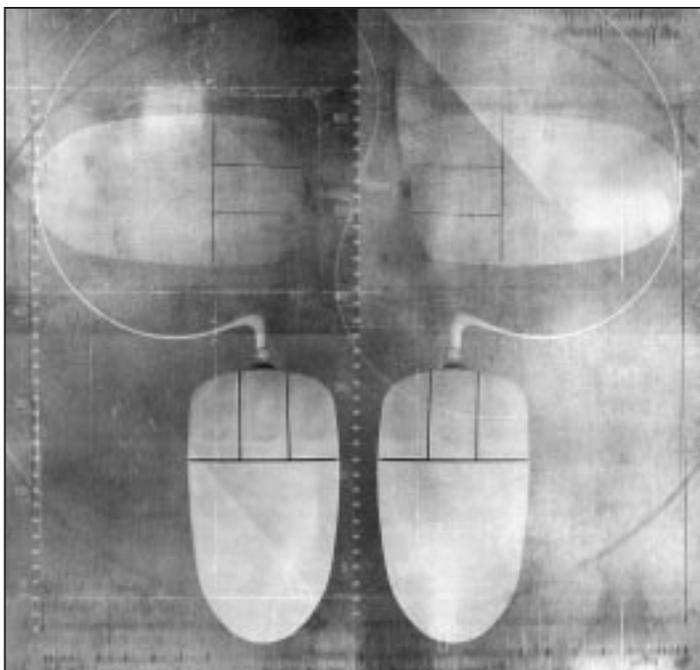
This effort has been impressive, but as this paper argues, it may have remained too narrow. The IT revolution extends far beyond the technology sector, after all. All kinds of firms — not just “tech” companies — are finding ways to cut costs dramatically by automating tasks, outsourcing certain functions, and linking customers to the factory floor. IT is also accelerating the ongoing fragmentation of large firms into separately located functional units, and the establishment of strategic relationships with other firms to perform functions formerly kept in-house.

In view of these changes, this report seeks to give readers a look inside companies to see how they are using IT, and to begin a conversation about what regional leaders can do to support technology-based development. The study builds on interviews with the chief information officers (CIOs) and information architects of 28 firms located in five metropolitan areas — Atlanta, Cleveland, Minneapolis/St. Paul, Phoenix, and Seattle. Ultimately, it seeks to clarify the nature and direction of key trends in order to explore their implications for public policy.

The research indicates that the economic landscape is “deconstructing” and reorganizing into new geographic patterns. This reorientation demands that regional leaders understand the shifting economic environment. Several key insights emerge from this analysis that may help shed light on what these new trends mean for cities and regions, and how their leaders can best respond.

***Both “new” and “old” economy firms are embracing IT, which means that both sunbelt and rustbelt cities and metropolitan areas can benefit from the technology revolution.***

Several U.S. metropolitan areas — such as Seattle, Austin, and Washington, D.C. — have become well-known centers for high technology companies, and others continue to emerge. However, success in the new economy does not depend solely upon attracting or growing high tech clusters. Traditional



industries in diverse sectors of the economy are also integrating new technologies into their operations. Companies like Parker Hannifin, a Cleveland engineering firm, employ computers and computer-controlled tools to design and manufacture products, and they increasingly use web-based purchasing technologies. That means that even manufacturing regions need to recognize companies’ shifting needs, and ensure that their economic development strategies respond to them.

***IT enables the “fragmenting firm” to split off key functions throughout the U.S. and abroad, which presents both opportunities and challenges.***

The cluster phenomenon is still alive and well, but it increasingly revolves around portions of firms and functions within firms — from data processing to distribution — rather than whole companies and industries. Federated Department Stores, for example, maintains its headquarters in Cincinnati, but has located its design and product development operation in New York City, and its data and financial management group in Atlanta. Similarly, the Boeing Company recently moved its headquarters to Chicago, but left its commercial airplane production facilities in Seattle and Southern California — traditional sites for aerospace manufacturing. The upside of this trend is that metropolitan areas now gain an opportunity to specialize. All regions can now focus on and compete for key firm functions, whether they entail manufacturing, research and develop-



ment, logistics, or sales. The downside: cities like Seattle or Cleveland may lose high-powered intellectual capital — as well as beneficial civic leadership — as top executives move to headquarters meccas like New York and Chicago.

***IT generates new criteria for firm locations, which may bring competitive advantage to some regions.***

Intel, for example, maintains a list of prerequisites when it chooses a site in the United States or abroad that includes a qualified, educated workforce; quality of life factors; infrastructure; availability of land; and tax incentives. Possessing extensive broadband capacity, a skilled labor force, and a good environment in which to live and work can give U.S. regions the edge they need to compete — not only domestically, but against developing countries that may have cheap labor, but lack technology infrastructure and other locational advantages.

***IT helps firms go “global,” increasing the need for U.S. regions to market themselves internationally.***

To be sure, the globalization of manufacturing has been taking place for decades. But IT has also enabled financial and other business services firms

to go global. Companies are increasingly outsourcing key functions to obtain a higher level of efficiency, profitability, or competitiveness. This means U.S. metropolitan areas must compete with regions all over the world for firms, portions of firms, and employment. Regions with particular niche capacities, and the ability to market them globally, have an opportunity to cultivate linkages with corporations abroad and improve their ability to compete on the international playing field. These global relationships may facilitate specialization in higher skill/higher wage operations, while at the same time reveal new markets for companies — products or services.

**What Can Leaders Do to Foster Regional Economic Vitality?**

Interviews with business people suggest that diverse companies are using IT in highly diverse ways to create new products, streamline operations, and reduce the costs of doing business. These changes have important implications for regional economies, making this a critical time for metropolitan leaders to get a handle on onrushing trends, and engage other public and private sector leaders in the development of new strategies for growing, attracting, and retaining firms.

What follows are some recommendations for public leaders engaged in maximizing regional competitiveness.

### ***Understand Key Trends***

A primary challenge of the IT revolution is that rapidly innovating firms — in their quest to reduce costs and improve the quality of services to customers — are capable of moving activities around rapidly to find the best place for each function. The decisions of individual companies can sometimes add up to significant geographic impacts in regions where whole integrated companies used to cluster. In this context, keeping tabs on what companies are thinking of doing becomes a necessity for regional leaders. This means knowing the needs of firms — from increased broadband infrastructure to skilled workers — and developing policies and programs to address them.

### ***Encourage Local Networking and Cluster Building***

As the economy globalizes, corporate strategists may overlook both potential customers and suppliers in their home state or region. Developing and marketing local competitive advantages require economic developers to focus on strengthening nearby business relationships and cultivating local clusters.

### ***Enhance the Urban Quality of Life***

High tech companies tend to seek diverse, high-quality urban settings that provide the alternative transportation modes, entertainment venues, restaurants, bars, health clubs, and other amenities that young and talented technology workers prefer. Quality-of-life issues arose in several of the interviews conducted for this report. One company in Cleveland, for example, is deliberately imitating some of the lifestyle characteristics of technology firms on the West Coast.

### ***Encourage Investment in IT Infrastructure***

Despite the apparently excessive level of investment in telecommunications in the 1990s, the need to upgrade communications networks persists. Most notably, excessive investment in fiber trunk lines has overshadowed a deficiency of attention to the “last mile” problem — that is, the problem of bringing high-capacity links from the trunk line to the individual local user.

At the same time, numerous companies are just beginning to realize the advantages of broadband connections. In the process, they are discovering the continuing difficulty of accessing the highest-quality broadband service. Unigard Insurance,

located in the Seattle area, indicates that limitations in the DSL and cable broadband systems effectively prevent telecommuting by its employees, many of whom remain unable to use Unigard’s online document archive and retrieval system. In another example, PolyOne, a giant plastics and polymer manufacturer now based outside of Cleveland, failed to obtain DSL service from its local telephone provider. This failure, along with space limitations, led the company to relocate its worldwide IT division to a suburb served by a large telecommunication provider.

Public and private sector leaders need to focus on creating world-class broadband access in commercial and industrial centers, along with some level of access in residential neighborhoods. They also need to allow as much competition as the local market can sustain to ensure continuing innovation in telecommunications services.

### ***Foster Entrepreneurship***

As the IT revolution brings new creativity and innovation to a greater number of sectors, leaders throughout the country need to cultivate entrepreneurialism in their individual regions. An entrepreneurial culture can be developed through programs that educate entrepreneurs in business schools, incubators, and a variety of less formal settings such as business and professional associations. Linkages between university and private institute research programs and local entrepreneurs are critically important, as is a strong angel-investor and venture capital base in the area.

### ***Focus on Education***

Government plays a key role in educating the workforce of the future, and retraining the current workforce as local skill requirements change. Regions that respond to this need increase their opportunities to attract new IT-based business operations. Leaders need to focus their efforts at all education levels, from elementary schools to universities to continuing education and workforce programs.

### ***Build Global Relationships***

While the globalization of manufacturing has been taking place for decades, IT is now enabling global operations in financial and other business services, as well as retailing. While globalization can be seen solely as a threat to locally-based employment and wage levels, global relationships may also facilitate specialization in higher skill/higher wage portions of the work, shifting more routine IT operations offshore. City leaders can augment private-company globalization strategies and company interactions, seeking to expand markets and preserve domestic



jobs and wages. If mayors and economic development department directors in US cities know their counterparts in Bangalore, Beijing, and Dublin, these relationships may prove instrumental in linking a manufacturer with a customer service company in another country, or a software developer with a coding firm, or a financial services company with a back office transaction processing company.

### ***Lead by Example***

City and metro governments can and should employ many of the same e-commerce and customer-oriented technologies corporations are using. Information about land availability, zoning requirements, utility alignments, and other factors related to business location decisions can be made web accessible along with certain administrative transactions. The city of Phoenix, for example, has placed its construction permit process online, allowing permits to be obtained and paid for electronically.

### **Conclusion**

Ultimately, cities or metropolitan areas can do little to reduce the likelihood — accelerated by IT — that firms will globalize, fragment, or relocate headquarters. Regional leaders can, however, work to create a competitive setting for all business' survival and success in a high tech era. This means investing in IT infrastructure; providing the right education programs at adequate scale to meet new skill requirements of employers; supporting innovative firms with research and development programs at universities and institutes; and assuring adequate venture capital for startup companies. Leaders also need to insist that their own organizations lead in the effective use of new technologies, and that their metropolitan areas build strong relationships with regions abroad.

Those metropolitan areas that understand the changing nature of business — and respond nimbly to its demands — will create the best environments for firm and economic growth.

Paul Sommers is a senior research fellow at the Daniel J. Evans School of Public Affairs at the University of Washington. Daniel Carlson is a senior lecturer and director of the public service clinics at the Daniel J. Evans School of Public Affairs at the University of Washington. *What the IT Revolution Means for Regional Economic Development* (February 2003) is printed with permission from the Brookings Institution. The full version of the report can be found on the Brookings Institution Center on Urban and Metropolitan Policy website at: [www.brookings.edu/urban](http://www.brookings.edu/urban)