

# The Shape of the Information City

*Understanding the impacts of  
the information revolution on city form*

*The information revolution is reshaping  
the city. Longstanding notions of how and  
why cities evolve are being shattered.  
Telework is just one component of a much  
more profound and complex dynamic of  
change that is transforming the city.*

*Here, Pamela Blais identifies some  
fundamentals to help planners navigate  
the changing urbanscape.*

by Pamela Blais

The shape, organization, and evolution of cities are increasingly being determined by a new dynamic with its own logic: the information revolution. The nature of urban change associated with this revolution goes well beyond teleworking. This article points to four key areas of impact that have important implications for cities and for planners: the changing composition and geography of economic activity; the two sides of a new live-work relationship; patterns of sprawl and concentration; and dematerialization.

### **The changing composition and geography of economic activity**

The information revolution is bringing about massive change in Canadian economic activities. Certain activities are expanding—particularly those that are knowledge and innovation intensive—while more routine functions are falling victim to international competition. In addition, information and telecommunications technology (ITT) is allowing whole classes of activities to become automated (e.g., bank tellers being replaced by automated teller machines), eliminated (e.g., “disintermediation,” in which intermediary functions such as travel agents are eliminated by on-line travel services and electronic ticketing), or relocated (e.g., back office or offshore routine data processing). Along with this economic restructuring comes a broad array of ITT-based organizational options, such as multinational corporations, network firms, and outsourcing. As a result, not only is the makeup of the economy being transformed, but also its organization and geography—from the global to the local scale.

The above trends signal significant

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change in the structure, form, and economic makeup of cities—and of course in their planning. While the trends are universal, their impacts on a given town or city are likely to vary depending upon the existing economic profile, unique characteristics, and assets of the area, and how these fit in to the logic of the information revolution.

Planners need to begin to think about how these trends are affecting their own town or city. What kinds of, and how much, economic activity can be expected? What locational requirements are these companies likely to have within the city? Are the old concepts and urban plans that segregate cities into residential areas, business parks, downtowns, and retail malls still relevant? Should projected employment land requirements be revised? What

kind of urban form will best support the changes? Physical, long-range, and strategic city plans need to take these trends into account.

### **The two sides of a new live-work relationship**

From the planning perspective, one of the most important implications of the changes described above is the transformation of the live-work relationship. This transformation has two important dimensions, both of which must be considered by planners. The first is a looser relationship between the home and the traditional workplace, and the second is a stronger relationship between work and the residential environment.

The first dimension has implications for residential location patterns in that it provides residents with greater flexibility in where they may choose to live. Workers can now live farther afield from their central workplace, and if they telecommute even part of the time, they are less reliant on the journey to work.

The shift of work to homes and neighbourhoods will also have important implications for the traditional workplaces left behind. Due to telework and other trends such as hotelling and mobile offices, a falling share of employment is likely to be accommodated in traditional employment areas such as business parks, office parks, industrial parks, and downtown office buildings.

Both dimensions of the new live-work relationship have implications for the kinds of amenities that people will look for in their neighbourhoods. These include access to ITT infrastructure (such as Integrated Services Digital Network

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(ISDN), cable, or Asymmetric Digital Subscriber Line (ADSL)) and to business, financial, and personal services that support working at home. Since roll out of advanced ITT infrastructure often proceeds in a piecemeal pattern, different types of neighbourhoods and buildings may prove more connected, adaptive, and therefore more desirable than others. In addition, "softer" amenities such as sense of community, local facilities, and the design and quality of the residential environment become important location factors.

Planning new urban areas and retrofitting existing neighbourhoods, particularly the post-war communities, to support work-at-home is a key issue. Strategies for effectively integrating, supporting, and monitoring neighbourhood-based work are essential. Consideration of these trends must be integrated into local and secondary planning processes. Small-scale opportunities include redeveloping the corner convenience plaza to include mixed uses, such as telecentres and spaces for services and amenities that support work-at-home.

If these support services are not integrated into residential areas, teleworking could mean increased automobile trips rather than the widely heralded solution to auto dependency. Compact, mixed use, pedestrian-oriented centres allow many work-related and personal activities to be undertaken on foot. Conversely, work-at-home in a single-use, low-density environment may require separate and lengthy automobile trips for each business meeting, lunch date, or trip to the dry cleaners.

## More or less sprawl?

Most planners assume that the information age heralds the "electronic cottage," the "footloose industry," and perhaps unprecedented levels of urban sprawl. The reality is more complex than this, with deconcentration and concentration happening simultaneously, depending on the particular type of activity. The key is to understand which types of activities will have the ability or tendency to locate in lower cost, peripheral areas, and which types will actually have a heightened need for concentration. Different kinds of economic activity will be drawn to different types of urban environments based on different locational requirements.

The term "footloose" is really a misnomer when used to describe the locational proclivities of certain industries. Instead of needing access to energy, water, or expressways, these firms are simply looking for a different set of production factors: skills,

local amenities, and teleconnectivity.

Innovation- and knowledge-based activities such as financial services or software development often depend on physical concentration and the fast and informal movement of information. These industries, which rely on physical concentration, account for a growing share of the economy. Witness "Silicon Alley" in Lower Manhattan, a new urban industrial district where young multimedia firms cluster.

On the other hand, more routine activities such as standardized production and data processing can seek out lower-cost, peripheral locations. And telecommuting can mean that the geographical area of a city stretches out as residential locations become more weakly linked with a central workplace. Small towns and villages surrounding urban areas—which many people find attractive living environments—may become sought-after locations.

The overall result may be a heightened differentiation between urban, compact, mixed use areas, and their surrounding low-density, sprawling, quasi-urban ring. These trends point to a renewed and stronger need for regional planning, as commutersheds and urban areas expand along with the potential costs of servicing and infrastructure. The geographic scope of these regional plans will have to increase in order to capture the larger, functional urban area.

## Dematerialization

The information revolution signals a new relationship between economic growth and the demand for work space. Simply put, less floor space is required per unit of economic output than in the past. Given a stable rate of economic growth over time,

we can expect the average growth rate for office, industrial, and retail floorspace to be slower in comparison.

A number of factors come together to contribute to the "dematerialization" of industrial and commercial buildings. These factors include: increasing productivity as a result of ITT; automation; disintermediation; on-line shopping; just-in-time delivery; and new workspace options such as hotelling, teleworking, and mobile offices. Bank branch closures associated with ATMs, telephone banking, and electronic personal banking are just one small example of these trends. The number of CIBC branches fell by nine percent between 1991 and 1996.<sup>1</sup>

Dematerialization obviously has important implications for long-term physical planning, municipal finance, and economic development. Certain kinds of establishments that used to be counted on to help create mixed use environments may be dematerialized: bank branches, the corner video store eliminated by video-on-demand, and on-line shopping replacing retail outlets. And of course, there are direct implications for how planners estimate future urban area land requirements, particularly the amount of traditional land area set aside for employment uses.

The four key areas briefly described above illustrate just some of the ways in which the information revolution is reshaping cities and towns according to a new logic. Successful towns and cities will be the ones that recognize, understand, and act upon these transformations. **PC**

**Note**

<sup>1</sup>The Conference Board of Canada. 1997. *Jobs in the Knowledge-Based Economy: Information Technology and the Impact on Employment*. Ottawa, ON.

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## Summary

The shape, organization, and evolution of cities are increasingly being determined by a new dynamic with its own logic: the information revolution. This article argues that the nature of this urban change goes well beyond teleworking and points to four key areas of impact that have important implications for cities and for planners.

## Résumé

La forme, l'organisation et l'évolution des villes sont de plus en plus déterminées par une nouvelle dynamique dotée de sa propre logique : la révolution de l'information. Cet article soutient que la nature de ce changement urbain va bien au-delà du télétravail et décrit quatre secteurs majeurs qui ont des conséquences importantes pour les villes et pour les urbanistes.

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