

GLOBAL PERSPECTIVE

Telecommunications— The Seed, The Symbol, and The Focus

Essential Infrastructure for Today's Economic Development Initiatives

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The new electronic interdependence recreates the world in the image of a global village.

—Marshall McLuhan

In the creation, retention, and enhancement of economic wealth for any community today, economic development strategies must consider the opportunities that information technology and telecommunications can offer. Equally, they must understand the implications of not considering them.

In many of Canada's telecommunications-rich communities, committees have been established to look at their futures. They will probably be told that they have evolved from a resource- or industrial-based economy to a new industrial paradigm dealing with an information-dominant economy.

This should not come as much of a surprise. Probably, most of the people they know process more information today than hard products. Even many of the manufacturing and resource related jobs have a significant percentage of information processing to do as part of their line of work or research going into resource management. Of course, publishing, banking, entertainment, broadcasting, transportation management, government, and education, among others, are heavy users of information and communication technologies. Increasingly, with international borders opening up and personal technologies reducing in cost, telecommunications has become an important business tool in marketing and processing information on a national and international scale. In fact, with our ability to communicate ideas and send large amounts of information by means of satellite, fiber optics, and wireless communications, we are able to find entirely new ways of creating economic prosperity for ourselves and our communities.

Look around you. How many of the companies that were dominant only a decade ago are still around? How many new ones have taken their place? Chances

are that these new companies are doing something quite different, and it probably has something to do with the processing and delivery of data, text, audio, or video. In fact, 97% of all new categories of jobs created in the past seven years have been in knowledge-intensive industries. These require extensive telecommunications-related infrastructure to flourish and grow.

This change has occurred relatively recently and quickly. Traditional planning and economic development offices are only now beginning to look at these issues as part of their mandate.

An international conference dedicated to examining these opportunities and implications will be held this September in Toronto. Called Smart '95, it will look at the enabling infrastructure that telecommunications offers our communities to participate globally for social and cultural enhancement, for learning at great distances, for basic communications and entertainment, and for economic development.

While this may seem like a new idea, telecommunications manufacturers and service providers have been doing a brisk business for the past decade in Asia and Europe, where significant partnerships have been formed among government, business, and institutional sectors to develop knowledge-intensive centers geared to harness economic development in their regions. These facilities have been called everything from Infoports to Mediaparks and Technopoles to Telecentres and Teleports.

Originally, this idea was started in New York City under the name Teleport. This predates information highway jargon, and is not very well known in North American communities. But in Europe, Asia, and increasingly in developing countries, Teleports have become *the seed*, *the symbol*, and *the focus* of economic regeneration. Whatever their name, these telecommunications centers represent 11 basic elements that should be considered in any community's economic development strategy.

1. Technical Facilities

As an essential ingredient in the seamless transmission of data, text, audio, or video, Teleports provide the necessary technical facilities to become an instant link to the world. In developing countries, for instance, these facilities might only provide satellite transmission services to improve upon inadequate telephone service. This immediately raises the level of interest of foreign companies who require telecommu-

nications services as a basic factor in any decision to locate in developing countries. In infrastructure-rich communities, they may represent the key switching services for international and long-distance activity, utilizing every form of telecom medium—fiber optics, satellite, cellular, or cable. As described by the President of the Teleport Communications Group (TCG), a formidable American company that is challenging local telephone companies across the United States with their Teleport developments, these facilities act as vital gateways to the international marketplace, offering secure and affordable links between the local marketplace and the world.

Technically, Teleports are defined as access facilities to a range of full-scale telecommunications media incorporating a distribution network as well as telecommunications business services to serve the greater community. In more general terms, they are telecommunications facilities which implement what Marshall McLuhan promised as the Global Village. They are real-life examples of the Information Age. Teleport proponents often use seaport and airport analogies to describe them. The latest promotion for the World Teleport Association's World Congress to be held in Toronto next September explains:

Envision, for example, the much-touted "Information Superhighway" as an international flight pattern that connects every country, city, town, and village throughout the world. In such a scenario, Teleports can be likened to air traffic control stations that create and manage the connections, enabling businesses and consumers to transport information from place to place faster, easier, and more economically than ever before.

This is an important analogy given that many industries and companies today deal with a relatively new cargo, one that is weightless and highly valuable: information. Information processing now counts for over 50% of many major regions' economic activities. Metropolitan Toronto, for example, is recognized as having over 55% of its workforce in information-intensive services. Teleports are facilities geared to meeting today's and tomorrow's new industry demands.

2. Teleport Typologies

Teleports can also be better understood through recognizing the different typologies. The basic American uplink facility and the instantaneous third world Teleport share a common goal. They desire an immediate response to their installation. Some have been developed for as little as \$750,000. These may be both fixed and mobile. Generally, there are no real estate-related activities, tenant facilities, or services associated with this first-level Teleport. Connections to local networks and existing businesses elsewhere are typical. There are also more established, multi-million dollar uplink facilities, such as the Washington International Teleport and numerous dedicated telecommunications uplink facilities such as Turner Broadcasting's CNN earth station.

The next generation of Teleports are those which have a planned environment associated with them. These are facilities which incorporate satellite, fiber optics, microwave, and coaxial technologies as part of a planned enterprise. These are developed as intelligent buildings, clusters of buildings, and even as large-scale real estate business parks. Examples of these include projects in Amsterdam, Berlin, Seville, New York City, Rio, and Cologne, many of which will be further explained in this article.

Common among this typology is the attraction of people and businesses to the facilities, especially small to medium-sized businesses, that are so very important to fueling jobs and being the creative backbones of nations. While several in this typology aim to attract large-scale ventures such as Merrill Lynch in the Port Authority of New York and New Jersey's Staten Island Teleport, others are quite happy to cater to a myriad of small businesses in a business center environment. Essentially real estate driven, this typology offers a new look and feel to developing real estate, no matter whether it is for business, industry, government, or residential uses, as each sector is being influenced

more and more by telecommunications.

The final typology has identified the Teleport as the intelligent city or region itself. Also known as the wired city, this perhaps is the closest that the information superhighway comes to being physically recognized. The Paris-Ile-de-France region is practicing the global village phenomenon in its development of a wide area network linked to interactive nodes in the region. It is their intent to collectively work together to compete in the global marketplace. Incorporating both prior typologies into the Teleport mix, this regional connectivity will catapult the Paris region into an unsurpassed position to market the Paris region globally as we approach the next millennium.

3. Catalysts for Growth

Telecommunications infrastructure is changing the way landowners, service providers, and the public sector view real estate and planning for industrial community development. Comparisons to water pipe capacities, sewer lines, hydro and gas lines, and street capacities are inevitable. Governments and developers have been able to build communities in the past based on a foundation of services that has been in place, or helped to initiate this infrastructure as a result of a proposed development.



Amsterdam Teleport

Netherlands PTT is part of the planned six million square foot development.

Telecommunications infrastructure and the related technical facilities located at strategic nodes are deemed to be cornerstones for the development of new-economy activities. The shift from resource-based enterprises to knowledge-based activities requires high-speed, high-capacity communications access. For businesses involved in national and international activities, access to secure and affordable communications capabilities is essential. In developing nations, for instance, telecommunications centers are clearly catalysts for growth, bypassing inefficient and outdated local facilities to attract hard currency investment by multinational firms that need high-quality, high-capacity global telecommunications in secure environments.

In developed nations, telecommunications infrastructure is harnessed to create new industrial ventures, replacing old-economy activities. The extreme is Tokyo Teleport Town, where a consortium of public and private sector interests is creating a 1,000-acre community around the Teleport theme. Cologne's Mediapark was a development on 50 acres of former railway lands based on the integrated telecommunications infrastructure available at the complex. Amsterdam Teleport, a 6.5 million sq. ft. development near Schiphol Airport, is focusing on data and international call and reservation centers. Numerous other communities are basing their futures on knowledge-based industries and activities requiring telecommunications infrastructure, namely, Osaka, Singapore, Yokohama, Berlin, Paris, Montreal, San Francisco, and Rio, among others.

At the local level, telecommunications infrastructure, especially available in centers where affordability and accessibility to all modes and capacities is promoted, considerable interest is generated by potential end users. In Montreal, for example, where the Teleport de Montreal offers access to high-capacity telecommunications in a shared use and synergistic environment, a highly-successful Teleport complex has been created, reinforcing the success of Montreal's broadcast district.

4. Focal Point

Telecommunications infrastructure by itself has no magic. Satellite earth stations are interesting complexes, but highly-guarded and usually out of bounds. Fiber optics is buried in the ground or in the depths of walls in buildings. Microwave and cellular towers are as familiar as telephone and coaxial cables. However, telecommunications centers, which provide opportuni-

ties for people to gather, to use the facilities, and to showcase their capabilities worldwide, act as focal points for the community entering the next millennium. Embratel, the national communications carrier in Brazil, and the local government in Rio, for example, have formed a partnership to redevelop their aging urban core. The Rio Teleport acts as a community focal point, spearheading urban renewal efforts. Similarly, the London Borough of Camden has proposed a major redevelopment of their railway lands into a community focal point. The CrossMillennia project aims to gather community efforts around the high-technology center where interactive telecommunications plays a vital role.

In Poitiers, France, some 300 kilometers southwest of Paris, a futuristic community has been developed around technology and telecommunications. At the heart of the 1,000-hectare (2,500-acre) industrial complex is the Futuroscope Teleport. The Teleport concept seeded the technopole and supports all of the industries, convention facilities, and adjacent theme park, The European Park of the Moving Image, allowing broadband linkages worldwide to Poitiers facilities. As a result of the development of this Technopole, the project has also been able to attract the University of Poitiers' training and research institutions, the National Centre of Long-Distance Learning, and the International Institute of Long Term Forecasting.

5. Symbolism

At a workshop held in Toronto, the realization that Toronto and the region is a virtual Teleport was no surprise. Highly-enriched in telecommunications infrastructure, the importance of physical development seemed less important than the ability to be highly connected throughout the greater community. However, the realization that it was still important to market the community on a global scale, suggested the role of the CN Tower—the world's tallest free-standing communications masthead—to act as the community's symbol of telecommunications excellence. Cologne's Mediapark has a similar expressive face to the world. Designed by the renowned Toronto architect, Eberhard Zeidler, the site and buildings are symbols of Cologne's new-found position in media excellence within the EEC. Other communities are incorporating highly expressive buildings—such as Seville's unique World Trade Centre, Poitiers' Futuroscope, and Yokohama's crescent-shaped waterfront buildings—as part of their marketing symbols.

These telecommunications centers are also acting as symbols in themselves to promote community excellence and the level of its infrastructure capabilities. For instance, Panama's Teleport will position the country as a premier location for establishing businesses in Central America. The Teleport in Rio is meant to reinforce its ability to serve international headquarters.

Many eastern European communities are developing Teleports as symbols of their advancement, as much as helping to establish physical linkages. And every major Asian community is in the process of developing a Teleport, or else it is not deemed at the same high level as its neighbors. Even the original Teleport, developed by the Port Authority of New York and New Jersey on Staten Island in the early 1980s, was very much symbolic of the Port's pre-eminence in the world of international trade and the emergence of electronic commerce, especially in shipping, highway transport, and air traffic.

6. Critical Mass

As in any project, the more people that are attracted make it more likely to be successful. The development of a critical mass of buildings, activities, and enabling infrastructure is also likely to make a project more attractive, active, and affordable for its users and tenants. With a critical mass of tenants and end users of the communications infrastructure, the equipment costs are spread over a larger number of users, thereby making it more affordable. As a result of this mutual support, the technologies would be most likely kept current, thereby reinforcing long-term sustainability of the complex.

- Montreal and Berlin's videoconferencing facilities are a result of the use to which they are put by the tenants.
- Cologne's ISDN phone systems are the least expensive in the region as a result of the critical mass of users.
- New York's Staten Island Teleport supports a superb security system for its tenant base.
- The threshold of users in Amsterdam supports state-of-the-art speech-data cabling and a digital PABX telephone exchange as standard services.

The critical mass of users and tenants also supports innovations in urban design and urban engineering. Yokohama's Teleport community has developed an underground city of municipal services, thereby

assuring that municipal streets in the development will not be interrupted for municipal works. The building designs, urban landscaping, and other physical amenities at Seville's Teleport are outstanding; and Amsterdam's Teleport affords exceptional transit facilities for its 4,000 workers.

7. Synergies

As a result of the gathering of similar-minded or complementary businesses in a related complex, the resultant synergies among tenants can be significant. The Teleport de Montreal is a good case in point. Shortly after the development of the Teleport, the tenants drew their resources and talents together under the name Megapoint, in order to develop new projects and sustain their mutual existence in this shared-use complex. Acting as a think tank and neutral forum for its more than 20 different organizations, Megapoint promotes creative cooperation among these communications-related firms. The result of the synergy among these companies is the creation of Centre Multimedia, a multi-million dollar and multi-functional facility, which offers highly advanced presentation equipment available for use by the tenants and the community at large.

Without the synergistic and cooperative relationship developed at the Teleport, this facility would not be available to small businesses in Montreal. Other synergistic activities include work sharing, multi-business product development, and new business incubation. Individually, these companies may have prospered in their own right; however, by banding together, they were able to achieve higher purpose elements that now form part of the greater community. Conclusion: the sum of the parts is greater than the whole.

8. Shared Costs/Shared Risks

Born from the same minds that created the World Trade Centers, Teleports are first and foremost integrated telecommunications centers that bring fiber optics, wireless, satellite, and related technologies together in order to effectively and affordably communicate large volumes of information over long distances. The cost of always being state-of-the-art and able to carry increasingly large volumes of voice, data, text, and video, especially over broadband, is too much for any one company to bear, especially small to medium-sized businesses. The Teleport offers the

ability to share the costs—and the risks—of telecommunications facilities.

As the costs of popular technologies, such as PCs, are increasingly reducing in price, the other end of the spectrum dealing with advanced technologies continues to be of significant expense. Add to this the ever-changing nature of the technologies, and it has been difficult for many companies, especially small to medium-sized enterprises, to keep up. First, it was ISDN technology, now it's ATM, and so on. High-speed, high-capacity broadband technologies are very expensive and will not soon be at prices that the average business can readily afford. High-technology related businesses, especially those with high costs in distance and international communications, are always seeking means to reduce costs and improve on servicing their customers. The brief history of Teleports has been to offer high-quality services and secure the most efficient communications capabilities at lower costs for its tenants.

Described as shared-use facilities in unique business center environments, Teleports have sprung up over the last decade, especially in Europe and Asia. In these regions, the majority of businesses fall into the small and medium-sized categories. In Japan, for instance, more than 75% of employment falls within these categories. Their size is also reflective of their ability to be responsive and seek innovation. These are the firms that also seek the most affordable means to achieve their competitive edge. Teleports appear to meet many of their goals, especially the ability to have access to technical facilities and telecommunications choices at affordable rates.

9. Coordination

Teleports offer the opportunity to act as silent coordinators of the tenant's choice of technology. In Europe, there is great satisfaction in what is referred to as the "one-stop, full-service facility." Teleports of varying sizes and typologies offer advanced telematics for everything from external data transport to specialty network services and specialty management services. In Amsterdam, the Teleport permits the tenant to choose only those services from which the tenant can immediately benefit.

Teleports can also offer brokerage of the most competitive or appropriate information technologies and telecommunications, based on tenant requirements. They also offer coordination among a number of end-users sharing in the facilities. Coordination

may also extend into synergy-building. Montreal's Megapoint coordinates business development initiatives. Others coordinate efforts to seek financing and approvals for common projects.

10. Niche Development

Teleports have a unique ability to focus the capabilities and interests of its tenant base. In Montreal, the tenant's focus is in broadcasting. Developed through the partnership of Telesat Canada and a large cable company, the more than 20 companies, representing over 800 employees, have gathered out of mutual interest and business relationships. The unique precompetitive environment has been so successful that the Teleport is also a highly-successful real estate project, nearly always fully occupied, with a waiting list for space despite the higher relative rents it charges. Seville's Teleport also manages to charge relatively higher rents as a result of the higher level of technical facilities and services.

Similarly, the Amsterdam Teleport has been able to benefit significantly from its call center focus. Major reservation and telemarketing services take advantage of the Teleport's telecommunications facilities and the region's multilingual capabilities. Rio's City-Centred Teleport will promote its secure and reliable telecommunications facilities to attract and retain multinational head offices in Brazil. Cologne's Mediapark has developed a unique niche within the EEC related to media ranging from broadcast to publishing. Yokohama's Minato Mari 21 waterfront development utilizes the Teleport as a gateway for international telecommunications traffic.

Marseilles' Teleport will also focus as an international gateway. Calgary's Infoport promises to have a similar approach. Others will work in coordination with its World Trade Centre cousin to be unique showcasing and international exhibition facilities, promoting on-site presentations as well as unique international interactive functions. Each develops in its own way as a result of the unique aspects and circumstances of the community in which they are located. Like any successful enterprise, the niche that it developed and maintained reflects the strength and knowledge that is inherent in the community it serves.

11. Marketing

As a result of common interests and mutual relationships, tenants and users of Teleports benefit from the opportunity to collectively market their

services and capabilities to the local and international marketplace. Tenants can combine efforts to market their products and services, or use the sources of information available through the Teleport's facilities to seek out markets. Linkage with other Teleports globally offers an even wider opportunity to market worldwide.

Teleports can also act as showcase centers, promoting the community-at-large to the wide world through physical presence on site, as well as utilizing the telecommunications capabilities at the Teleport to be interactive with off-site service and manufacturing facilities regionally, as well as with potential customers at distant locations.

Conclusion

From an economic development point of view, telecommunications centers, if properly understood, can help to harness telecommunications in significant ways for the benefit of the community-at-large.

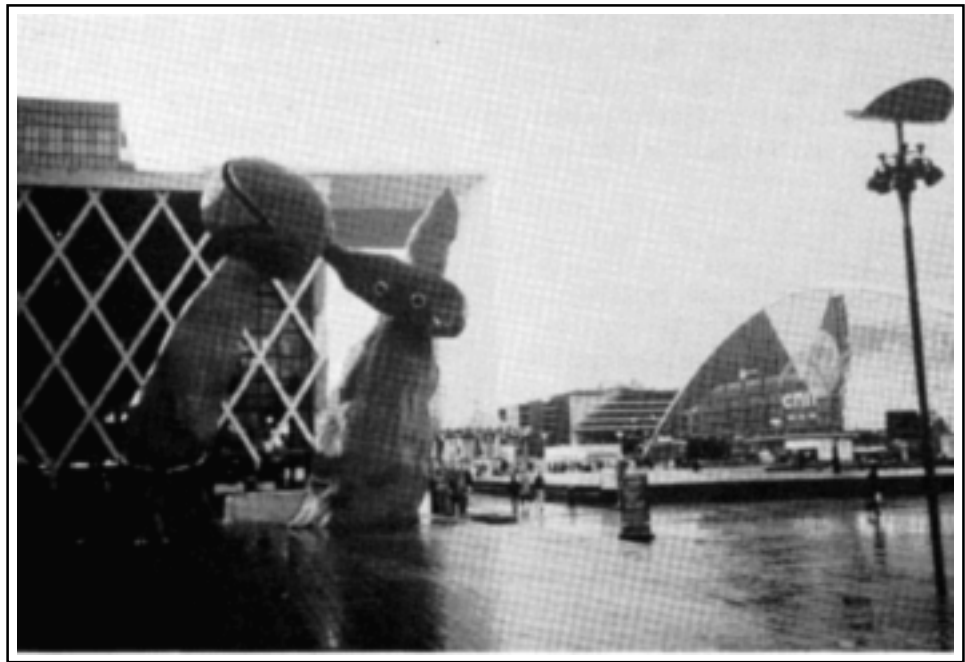
So important, and timely, is this idea right now that, in Toronto, a collective of industries, service providers, government agencies, and institutions have

formed a precompetitive and proactive assembly to study the telecommunications strengths and weaknesses, seek proactive solutions, and ultimately implement them. Several ideas that have been raised include:

- A regional showcase of technological excellence.
- Strategic broadband links to stimulate and maintain businesses that will reinforce the emergence of the community to primarily new economy and new competitive levels.
- The importance of creative cooperation among competitors in the region.

Teleports can add value, and in specific cases, they can act as the seed, the symbol, and the focus for economic rejuvenation of an area or region, and in some instances, an entire nation. nto

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La Defense, Paris

Part of the Teleport Paris-Ile-de-France, functionally and symbolically the center of the new Paris region