

Abstracts

J. N. H. BRITTON and G. LEGARE: "Clustering and the Digital Economy: New Media in Toronto". The new media industry contributes to the digital cultural economy and to the digital producer services industry. National, regional and local factors that led to the concentration of firms in Toronto are assessed, and the paper evaluates whether this functions as a cluster. Cluster theory is outlined and applied using data acquired from interviews with executives. Spatial, production, and market relationships support the interpretation that since the end of the bubble economy firms in Toronto have learnt to develop stronger cluster relationships. The cluster, however, still strives to develop associations effective in establishing Toronto's profile within international competition.

R. TREMBLAY: "Ottawa among North American Technopoles: Myth or Reality?" [Ottawa parmi les technopoles nord-américaines: mythe ou réalité?] The scope of this article is to see how high-tech business owners perceive Ottawa among other high-tech cities in North America. Based on a survey sent to 252 of a total of 1500 of them, we conclude that Ottawa high-tech business owners have a rather positive opinion of their city. This is the case, for example, of its economic competitiveness. The results of this survey are compared with census data.

D.-G. TREMBLAY and S. ROUSSEAU: "The Montreal Multimedia Sector: A Cluster, an 'Innovative Milieu' or a Simple Co-location?" The multimedia sector is one of the high-tech sectors that have contributed to revitalizing the economic base of the Montreal region. A relatively young sector, its many applications have created visions of sustained growth, arousing the interest of many public and private actors in the sector. The sector has fulfilled its promises in part and met a number of expectations, to such an extent that for a number of years the sector was an unqualified success. This paper examines the mechanisms of governance set up by actors in the Montreal region in order to build the foundations of a new industry and discusses the factors that helped trigger or motivate the mobilization of the actors involved in creating this sector. In so doing, we try to determine whether the activity observed in Montreal can be considered a cluster, as this concept implies important or constant interaction amongst the actors of the sector. While the governance established in Montreal is rather reactive, it was a success

because it can be considered as joint governance, inasmuch as many social actors are associated in the spatial policy known as the *Cité du multimedia*, as well as the general development of the multimedia sector. This governance has evolved over the years according to information and changes in the environment and something close to a cluster seems to be emerging in Montreal. Our research highlights the role of various actors in developing governance actions which contributed to the development of the multimedia sector in Montreal, and therefore to the development of Montreal as a Knowledge City.

A. C. SALAZAR: "Albuquerque - Technology City of Contrasts". Albuquerque, New Mexico, qualifies as a city in which technology in the form of research and development conducted in federally funded laboratories has played a major role in the development of its economy. This paper profiles Albuquerque through the historical factors that contributed to the city's development as a technological centre despite its isolation from other metropolitan areas, low population density, few manufacturing facilities or transportation resources and challenging cross-cultural issues. Many of these factors have contributed to making Albuquerque a city of contrasting features in educational level, income disparity and commercial ventures. Despite the presence of research laboratories whose cumulative financial investment from the federal government over a period of 60 years is quite substantial, Albuquerque has not realized the full potential of their scientific discoveries for creating high paying private sector jobs nor for creating spin-off businesses. According to metrics such as per capita income, poverty rate, school performance and city crime rate Albuquerque, along with the state of New Mexico, is challenged in creating economic wealth from its prodigious intellectual capital. Some factors inhibiting this transformation are suggested that are drawn from studies of "technopoles" and science cities in the US and other countries.

H. GOLDSTEIN: "The Role of Knowledge Infrastructure in Regional Economic Development: The Case of the Research Triangle". This article is a case study of the economic transformation of a region recently based on the textiles, furniture, and tobacco industries, into one of the world's leading technopoles, within a period of less than forty years. The case is about what is now known as the Research Triangle region of North Carolina. While many observers focus on the creation of the Research Triangle Park in the late 1950s as the key event, this paper argues that it was the public and private investment in the region's broader knowledge infrastructure that stimulated and nurtured the structural transformation. We describe the region's knowledge infrastructure as a set of organizations and institutions that are linked together and indicate the roles each of the specific elements has served within the overall network

W. TU and D. Z. SUI: "The Transformation of Economic Structure and the Environmental Implications of a Digital City: An Input-output Analysis for Austin, Texas". Set in the context of current discussions on the digital city, this paper presents an empirical analysis of the transformation of economic structure

and examines its environmental implications for Austin, Texas. This paper traces the evolution of Austin from a college town to a technopolis specializing in information and communication technology (ICT), and the concomitant environmental implications. The authors urge policymakers and urban managers to pay more attention to three types of environmental problems in Austin in particular and other rising digital cities in general: 1) environmental impacts of the ICT sectors; 2) indirect impacts of non-manufacturing economic sectors such as information and service sectors; and 3) the consumption side of the economy. The authors argue that it is high time that new policy initiatives were examined to harness the power of the new economy to achieve the goals of sustainable development in the information age.

R. MORRILL and P. SOMMERS: "Seattle as a Digital City: Unexpected or Inevitable?" Although one of the smallest global cities, Seattle can claim a place as the home of Boeing, Paccar (Kenworth and Peterbilt), Starbucks and Costco, but the city ranks even higher as a digital city, as an initiator of wireless technologies, as the home of Amazon, of a burgeoning bio-technology sector, and above all of Microsoft. This paper traces the transformation of Seattle from a provincial city to a global high-tech player and ultra-wired city, as a consequence of location, key institutions like the University of Washington, innovative entrepreneurs and the characteristics of the people attracted to the region. The paper also examines how this digital revolution has changed the social structure and the economic geography of the region, contributing to the gentrification of the core city of Seattle, and the creation of a high-tech corridor supported by distinctive clusters of specialized business services.

S. M. BREZNITZ and W. P. ANDERSON: "Boston Metropolitan Area Biotechnology Cluster". The biotechnology industry has developed in a number of tight spatial clusters in the US and in other countries. This paper examines the biotechnology cluster in the Boston metropolitan area. Preliminary investigation indicates that firms in this cluster are specialized in technologies related to medical sciences and that they are highly concentrated in one small part of the metropolitan area: the City of Cambridge. In order to better understand the forces that underlie this type of tight clustering, a survey of biotechnology firms was conducted as well as a number of face to face interviews. Results indicate the importance of local universities both as sources of skilled labour and as producers of technological advances with commercial application.

S. WALCOTT: "High Tech Atlanta: Global Links Deep in Dixie". High technology companies in Atlanta provide a major job growth engine in this premier business centre of Georgia and the Southeast. Data rankings indicate the metropolitan area's relative strengths, augmented by interviews discussing the crucial human network synergies that created and sustain Atlanta's computer software and telecommunications sectors. A feature of the region's technology employment base is its Asian face, primarily from India and China. This research discusses the

origin, extent, and composition of high technology clusters in metropolitan Atlanta's four core counties.

J. FACHE : "High Tech Services Diffusion Points to a New Urban Hierarchy : The Case of Large French Cities". A diffusion process approach to high technology activities' dynamics represents a good indicator of changes in urban structure and national hierarchy. The case of computing services allows us to see that the development of innovative activities constitutes a crucial factor in a city's ability to change categories and acquire metropolis status or miss the opportunity and be relegated to that of an ordinary city.