

# The Paradox of Technological Change: 'New' Media in 'Old' Urban Areas

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### Abstract

In theory, technological change enables economic activity to be carried out at increasing distances from traditional urban centres. In practice, however, technological change is leading to increased urban concentration for highly-skilled, knowledge based sectors, such as the multimedia industry. Multimedia firms not only exhibit strong interregional clustering, but also significant intraregional clustering within the urban core.

This paper explores the emergence of the multimedia industry in Toronto, New York and San Francisco. Interviews were carried out with principals of multimedia firms, organization leaders and government representatives in each city. The paper assesses the similarities and differences between these three cities based on: i) the urban propensities of multimedia firms; ii) the linkages between multimedia and related sectors including arts, computing, finance, media and communications; iii) innovative business practices that characterize interfirm relationships and enable firms of all sizes to participate in the industry; and iv) the role of public policy, public institutions and private forms of associative action in nurturing multimedia's rise to prominence. The analysis provides a framework for understanding why the 'new' media has emerged in 'old' urban areas, and whether multimedia represents a sustainable feature of the urban industrial landscape.

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### 1. Introduction

The multimedia industry has emerged as a 'darling' industry of the 1990s, especially in North America where its presence is most prominent (Centre for Image and Sound Research, 1995). Most significantly for geographers, the industry has had a revitalizing impact on the urban industrial structure of several North American cities, including Toronto, New York and San Francisco.

This paper poses the question: why does the multimedia industry (the 'new media') appear most potently in the old, industrial/urban core of large metropolitan areas? In order to answer this question, some assessment of theories on technological change and its effect on the concentration of industrial activity will first be addressed. This is followed by discussion and analysis of the location propensities, linkages to related industries, business practices, and public policy and institutional environments of multimedia production in three of North America's

largest centres: Toronto, New York and San Francisco. Together, this information points to some of the industry's critical needs, many of which translate into the fundamental advantage of an urban location.

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## 2. Multimedia's Emergence and Regional Resurgence

To begin, a definition of the term multimedia is required, for it has come to be used to describe a much wider array of activities than those under study in this paper. For the purposes of this research, multimedia is defined as the merging of traditional audio, visual and print media through digitization in an interactive format. The study of multimedia firms includes both established corporations that have moved into the field of multimedia such as graphic designers, computer software developers and book publishers; as well as newly developed 'multimedia-only' firms, whose core business offering is the development and production of multimedia products based on CD-ROM, Internet/Intranet, Kiosks, etc. Established firms in traditional industries that use multimedia applications and/or technology to enhance their operations are not considered 'multimedia firms.' While this definition largely concurs with those used by Brail and Gertler (1997), Fuchs (1997), City of San Francisco Planning Department (1997), and MDG.org (1998), Coopers and Lybrand (1997), in their study of New York's new media industry use a much broader definition of multimedia which makes it difficult to accurately compare centres of multimedia activity by industry size.

Multimedia represents an example of an industry that has emerged as a direct result of technological change and convergence. Its emergence provides for an interesting case study because the industry's characteristics in many ways challenge well-defined conventions associated with theories on technological change. Our expectations and understanding regarding what should happen and what does happen when technological advances occur produces two different outcomes in the case of multimedia. Technological advances that impacted transportation and the provision of public infrastructure in the earlier part of this century have led to the well documented dispersal and deconcentration of population and industrial economic activity. Along these lines, Kutay (1986, 254) concludes that "modern telecommunications and computer technologies will accelerate the deconcentration of office activities, and that the traditional centrality of downtown will weaken." Indeed, new industries such as software and computer hardware production that have led high technology industrial development in the 1980s and 1990s are notoriously suburban and exurban activities. But multimedia, in what is likely to be one of the last industries to emerge in the 20<sup>th</sup> century, is a highly urban industry.

The emergence of multimedia is clearly an example of an industry that has emerged as a direct result of the techno-economic paradigm shift to information and communications technologies. Techno-economic paradigm shifts occur when a far reaching change in technology, involving both incremental and radical innovations, impacts the entire economic system and results in a new mode of economic activity (Freeman and Perez, 1988). Associated with the rise of new techno-economic paradigms, is the massive restructuring of existing activity to adjust to new conditions predicated by the emerging paradigm in addition to the "rise of new firms associated with competence in the new technologies" (Freeman, 1991, 509). The growth of the multimedia industry can be viewed as an expression of this tendency, as the convergence of previously developed technologies with newly emerging ones constitutes an important facet of the industry.

While the move to an information and communications based economy appears in theory to present varied locational opportunities, in practice this paradigm shift seems to reinforce the centralization of information and

communications intensive activities in larger urban centres. Several examples from both industrial and service sectors have repeatedly confirmed that the development of the information economy tends to be focused on metropolitan areas (Hepworth, 1989). A recent study on employment growth and change in Canadian urban centres (Coffey, 1996) supports this claim. This sentiment is also echoed by Graham (1997, 107) who states that:

"The basic pattern (of urban dynamics in telecommunications investment) seems to be one of continued urban dominance, with the largest and most international cities acting as information hubs for the rest of the national space economy. This concurs with other evidence that large cities strongly dominate both investment in, and use of advanced telecommunications equipment."

While the previous discussion highlights an unexpected outcome of the current phase of technological change it does not help to explain why multimedia tends to cluster within the traditional core of urban areas. Explanations of this trend frequently involve the reliance of an industry on: frequent face-to-face interaction, connections to the city's corporate complex, the incubator effect of inner city areas associated with the presence of urbanization economies; and connections with creative and cultural services and industries that are typically located on the fringes of downtown areas (Scott, 1988; Gad, 1991; Hutton, 1994; Gertler, 1996; Scott 1996).

Also applicable to the study of the multimedia industry is the literature that exists on the role of industrial districts and agglomeration economies in supporting the economic development and revitalization of individual industries in particular regions (Oakey et al, 1988; Amin and Thrift, 1992; Saxenian, 1994; Storper, 1994; Scott, 1998). These authors relate regional economic development to a number of factors including: the presence of research and educational institutions; formal and informal partnerships with business, government and public-private associations; a dominant regional culture promoting collaboration and coordination between industry players; the sharing of information between workers and firms within a region; the presence of opportunities for learning to occur as a benefit of transactions between industry players; and an industrial infrastructure that is culturally and socially responsive. While this literature does not specifically address the intraurban location of industry clusters, densely developed industrial networks do tend to be located in urban regions, though the clusters are not necessarily located in the traditional urban core.

Looking now to the organization and operation of multimedia clusters in Toronto, New York and San Francisco, it is possible to identify some of the features that are common to the industry as a whole, and those that are location-specific. Through this analysis, the rationale for the multimedia industry's urban emergence and its future as an urban industry can be assessed.

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### 3. Review of Evidence From Three Multimedia Clusters: Toronto, New York and San Francisco

#### **A. Multimedia's Urban Propensities**

Toronto, New York and San Francisco are three cities that have emerged as 'winners' thus far in the development of a distinct new industrial activity: multimedia. Toronto is by far the Canadian leader in multimedia activity, containing between one-quarter and one-third of all multimedia firms nationwide (Multimediator, 1997; Industry Canada, 1997a). New York and San Francisco each vie for leading spots in the top three American centres of multimedia, joined by Los Angeles (Fortune, 1996; San Francisco Planning Department, 1997; Thompson, 1997).

Although comparisons between cities are often inaccurate due to incompatible definitions as to what constitutes ‘multimedia’, [Table 1](#) presents the data that are available as a means for comparison. It is my contention, however, that the figures for New York are inflated as a result of the overly inclusive definition used to identify multimedia activity in the New York study and that the San Francisco multimedia industry is likely equal to or slightly larger than that of New York. Nevertheless, for an industry that emerged in earnest only five years ago, these figures highlight the significant impact that the industry is having on economic activity in traditional urban areas. Furthermore, it should be noted that the figures in [Table 1](#) provide data only for the cities listed, not their metropolitan areas.

**Table 1: Impact of Multimedia in Toronto, San Francisco and New York**

City	Number of Firms	Employment	Source
Toronto	259	8,000 - 12,000	Brail, 1997
San Francisco	727	Not provided	San Francisco Planning Dept, 1997
San Francisco	379	26, 075	MDG.org et al, 1998
New York	2,128	48,828	Coopers & Lybrand, 1997

One of the most interesting features of the multimedia industry, is the propensity for multimedia firms to locate not only in large metropolitan areas, but in the central cities in those regions. For example, 62 percent of the Toronto region’s multimedia firms are in the inner-most municipality, known as the City of Toronto (Brail, 1997), and 65 percent of New York metropolitan area firms are in Manhattan (Coopers & Lybrand, 1997).

Furthermore, within the city, noted agglomerations of multimedia firms have been established within the urban core, often in traditional industrial spaces surrounding the central business district. In the City of San Francisco, 49 percent of all multimedia firms are located in the South of Market Area (SOMA) (San Francisco Planning Department, 1997), an area adjacent to the city’s financial district, and a former industrial manufacturing zone that has been transformed into a popular location for arts and cultural institutions, designers’ studios, artists residences, and a prime location for multimedia firms (Vivid Studios, 1996; San Francisco Planning Department and the South of Market Foundation, 1997). The concentration of multimedia firms in SOMA is commonly referred to as ‘Multimedia Gulch.’

Similarly, New York City’s multimedia firms exhibit strong clustering in an area labeled ‘Silicon Alley,’ located in Lower Manhattan. Fifty two percent of New York City’s multimedia firms are estimated to be in a Silicon Alley location (Coopers & Lybrand, 1997). The area is in especially close proximity to clients in the financial services industry, as well as to financiers, and is also close to suppliers and clients working in the traditional media, arts and cultural industries that cluster throughout distinct pockets of activity in Manhattan. A series of government-sponsored initiatives such as tax incentives ([see Section 3D](#)) to encourage multimedia and other technology-based firms to locate in the area have also been instrumental in contributing to the redevelopment of several buildings, leading further to the area’s disproportionately large share of Manhattan’s new media activity.

While Toronto’s multimedia firms display noted agglomeration in former industrial buildings on either side of the urban core, the neighbourhoods have not yet received ‘new media’ names. Nevertheless, these clusters on the shoulders of the central business district remain the focal point of multimedia activity within the region, and

contain roughly 43 percent of all multimedia firms in the city. Not only do these locations provide for easy access to corporate clients in the city core, but they are also easily accessible by public transit to nearby artists, and to suppliers and firms working in related cultural and content industries with whom Toronto multimedia firms have developed important relationships.

One of the most prominent ironies associated with the multimedia industry, is its propensity to form geographically defined clusters despite the technology upon which the industry relies and its supposed ability to facilitate interaction across distance, thereby eliminating the importance of physical proximity. In reality, however, proximity of multimedia firms to one another, to suppliers and to clients is one of the defining characteristics of the industry. Amit Ghosh, Chief of Comprehensive Planning at the City and County of San Francisco Planning Department, describes the seeming paradox as follows:

*[The multimedia industry] likes urban areas. It's an urban industry but at the same time it has this dual character ... it uses equipment and tools that allows it to be completely free of any spatial definition but on the other hand it loves to be in geographically identifiable areas that have their own unique characteristics.*

The importance placed on personal interaction and proximity to suppliers and clients, thought to be nullified with the introduction of new technologies enabling communication without proximity, does not seem to be having the expected 'aspatial' effect on the functioning and structure of the multimedia industry. Not only do the regions with the largest numbers of multimedia firms appear to have formed distinct clusters of firms in urban neighbourhoods with access to related industries and activity, but also, the role of interpersonal interaction is increasing rather than decreasing in importance in the perception of multimedia industry representatives. Susan Worthman, Executive Director of MDG.org (formerly the Multimedia Development Group), a San Francisco-based, non-profit organization supporting market and business development for the interactive industry, provides a summary of the future potential for multimedia clustering.

*If it were the case that all this network technology would mean that people would be dispersed and could be anywhere, then what one would expect to see is the deconcentration of clusters, that the clusters would not be as strong. What I believe we're seeing is quite the opposite. Because this industry relies so much on convergence and cooperation and collaboration and the confluence of technology and tools with creative content and infrastructure, you're naturally going to form clusters. And the people who will be most competitive are companies that are in a cluster or in a community.*

Indeed, the MDG itself is contributing to the intraurban clustering of multimedia activity by moving from an adjacent neighbourhood to the heart of San Francisco's Multimedia Gulch in 1998 (MDG.org, 1998).

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## **B. Linkages with Related Industries**

The structure of working relationships between firms and their suppliers and clients is a significant factor which affects firm location, and is in large part responsible for the metropolitan concentration of multimedia activity. The multimedia industry, it should be remembered, emerged as a result of the convergence of print, audio and visual media with digitization technologies. Therefore, it can be reasonably expected that the industry will have strong ties to arts, media and communications industries such as advertising, graphic design, illustration, broadcast

television and film, and publishing. Additionally, the computer hardware, software, programming and other technical needs of the industry are inherently critical to the development of products, and to the overall level of innovation that drives the industry and its product offerings forward. Studying the relationships between multimedia and its related industries provides key insights to the industry's establishment in urban clusters.

### ***Toronto***

The growth of Toronto's multimedia industry, especially in its early stages of development, has been largely a function of local demand for new media products. A survey of Toronto area multimedia firms revealed that clients are highly localized, with 62 percent of respondents' customers by sales volume being located in the Toronto area, and a further 11 percent located elsewhere in the Province of Ontario (Brail, 1997). The economic sector which commands the most attention is the corporate market, followed by production for information, education, and entertainment markets. The focus on corporate clients is not surprising, considering that the Toronto area is the single largest centre for headquarters of both national and international corporations in Canada, as well as the focal point of the national financial services industry, and many other producer and business services.

Toronto is also Canada's largest centre for English-language electronic and print media, film, video, music and television production, as well as other cultural and content industries. The city has just under one-quarter of the nation's employment in Radio, Television, Film and Sound Recording, and more than one-third of all national employment in Publishing (Municipality of Metropolitan Toronto Planning Department, 1995; Industry Canada, 1997b). Linkages to these locally-based industries provide the multimedia industry with a sound base of potential suppliers at the local level. This helps to explain why survey results showed that suppliers to Toronto's multimedia industry are highly concentrated in the region (78 percent of suppliers by sales volume are located within the Toronto area, 19 percent of which are located in the same neighbourhood as multimedia firms). Finally, the survey also revealed that, on average, 24 percent of all work is in publishing, pharmaceuticals, and manufacturing. Coopers & Lybrand (1997) identify publishing, advertising, new media, information technology, entertainment and financial services as the top six industry segments served by New York multimedia firms.

Spending by new media firms also remains highly localized in the New York area. Coopers & Lybrand (1997) have determined that 70 percent of new media business expenditures remained in the local economy in 1997. More than 60 percent of contractors to new media are located in New York City, in large part because of the need for proximity to new media firms, and to their clients (Coopers & Lybrand, 1997) and also because there is a large labour force with the requisite skills for multimedia that live in New York. The types of work contracted out varies and ranges most often from: art/illustration, design, marketing, music, photography, programming, video editing and special effects, and writing, and on a less frequent basis telemarketing, accounting, and legal service professionals are subcontracted.

Summarizing the strengths of New York in the field of new media Pavlik (1997, 3) notes that "Porter's (1990) notions of regional factor endowments and regional demand factors are particularly evident in the case of new media industry clusters in New York. A variety of resources including human, intellectual, physical, capital and infrastructure all reflect the regional factor endowments endemic to New York and supportive of a growing new media industry."

### ***San Francisco***



Of the three multimedia clusters cities under review here, San Francisco firms are least focused on the city where clients are concerned, though they remain heavily regionally-focused. The regional, rather than local concentration of San Francisco multimedia firms is related to the highly urbanized nature of the region, and its proximity to several large cities in the densely populated State of California, which contains four of the fifteen largest cities in the United States (Hartshorn, 1992). Of five San Francisco multimedia firms interviewed in September 1997, no firm had less than 30 percent of their clients by sales volume in the San Francisco Bay Area, and four of five firms indicated that fifty percent or more of their clients by value of sales have offices in California. MDG.org et al (1998, 6) provide further evidence of San Francisco multimedia firms' regional focus, stating that "nearly one half of company revenues from products and over one-half of service revenues were generated in the Bay Area". Interviewees noted that San Francisco multimedia firms work with a range of clients that span the following industry sectors: advertising, communications, consumer products, entertainment, games, finance, technology and publishing; all of which are present in the Bay Area and beyond.

Not only do San Francisco's multimedia firms focus on clients located in the Bay Area, but they also rely heavily on the area for both supplies and suppliers. Eighty percent of respondents to a 1997 survey of the city's interactive media firms indicated that more than half of their expenditures remained in the local economy (MDG.org et al, 1998). According to Scott (1998), "the vigorous growth of the multimedia industry in the Bay Area and Southern California is related to the prior existence in the two regions of large computer, software and entertainment industries and the consequent presence of ready-made pools of technologies and skills directly relevant to the needs of the multimedia sector" (146). San Francisco's artist community also lends strength to the region's multimedia industry by providing the requisite labour pool required to fulfil the creative needs of the industry (San Francisco Planning Department, 1997).

Firms interviewed in San Francisco in September 1997 indicated that the most common types of suppliers hired included: artists, database developers, designers, engineers, programmers, special effects experts, technicians, and writers in addition to the less frequent hiring of electronic commerce solutions providers, program testers and translators. In comparison, a study of California's multimedia industry, Scott (1998) found that the most common types of work subcontracted out by multimedia firms in San Francisco and Los Angeles were artwork and illustration, followed by programming and software services. San Francisco's strengths in these two fields, based on its history in arts and culture and the dominance of nearby Silicon Valley in computer software and technology development, mean that the local multimedia industry has been well poised to develop relationships with potential suppliers in the region.

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### **C. Business Practices and Organization**

Studies of the multimedia industry consistently show that most firms tend to be small, and that the work environment for multimedia is one which is heavily reliant on contract employment and freelancers. [Table 2](#) presents information on the average size and proportion of permanent and freelance employment in multimedia firms in Toronto, New York and San Francisco, and one is immediately struck by the high degree of consistency across these three centres.

#### **Table 2: Average Firm Size and Employment Structure of Multimedia Firms**



City	Average Firm Size	Employment		Source
		Permanent (%)	Freelance (%)	
Toronto	8	75	25	Brail, 1997
New York	6	77	23	Coopers & Lybrand, 1997
San Francisco	7	76	24	San Francisco Planning Department, 1997; MDG.org et al, 1998

Because of the relatively small size of multimedia firms, though there are exceptions, the industry relies on a number of business practices which enable small firms to compete for work at a level playing field with larger companies. These practices include the frequent use of freelancers, with firms in each of the three cities supplementing their full time work force by up to 25 percent with temporary, freelance personnel on an as-needed basis. Firms are also engaged in partnership and joint venture arrangements with other firms working in both multimedia and related industries. The discussion that follows highlights some of the ways in which multimedia firms in Toronto, New York and San Francisco have adopted the practice of maintaining small firms while accessing large pools of talent and resources in the production of multimedia.

### **Toronto**

The business environment for multimedia firms in Toronto is best described as competitive - firms tend not to collaborate or share information with their competitors. However, they do work jointly with firms in related industries and they do rely frequently on freelancers to supplement their in-house staff. There are also a number of one-person multimedia firms in Toronto that have established viable work methods to enable their participation in the industry.

What may be most interesting about the way freelancers are viewed by firms within the industry, is that the lines between freelancer and employee become blurred when contract labour is brought in to work on individual projects. Christopher Van Buskirk, Vice President of True North Technologies, says:

*I don't consider freelancers to be a company or a supplier. I would consider them to be part of us, when I hire a freelancer we bring them in to work for us for a set period of time or we say we're going to give you this project, chances are there might be another one so really you're almost an employee of ours. We want long term relationships with everybody.*

*[Supplier relationships] are very much based on a personal relationship in some cases. And it's not personal because they're friends or buddies, it's personal because we've worked well together and we've built up trust.*

Advertising and other communications companies are becoming common collaborators with Toronto multimedia firms as multimedia becomes an increasingly prime component of marketing and communications strategies. Multimedia firms such as Adrenaline Communications have begun to develop alliances with traditional communications companies to prosper from the 'overflow' of multimedia work. Jon Dowsett, Principal of

Adrenaline Communications, describes the way in which he structures partnerships with communications firms with different strengths than his as follows:

*These are companies that are very established in communications, that have very very strong sales forces that are all of the sudden turning over too much multimedia business for them to handle. Adrenaline will be hired to look after web development, CD-ROM training, etc ... Although Adrenaline will be paid to do the work, and it will be the Adrenaline team, their name [the alliance company's] will be splattered all over it ... there's a fair amount of that that goes on.*

Although working with related industries such as advertising as a subcontractor can be a lucrative field for multimedia companies, and can also help small companies avoid the hiring of sales staff, the comments above identify what may be seen as a significant drawback to working in this field – the end client may not know which firm has been working on developing its multimedia ‘image’ and recognition for multimedia firms is thus limited.

Alliances with firms in related industries also take the form of ventures in which firms bid jointly on projects and then divide the work based on the strengths of each company. These relationships are common when different types of specialized skills, such as sound recording and animation, are required to produce an individual project. Random Media Core has pursued relationships with other specialized firms as the firm matures and increases the scope of its projects.

*As we grow the studio and the capabilities of the studio, we build partnerships and alliances. Most recently, we set up an alliance with an animation company because we found that clients were asking for a lot of 3-D modelling work and animation work, and these guys are just down the street from us and we're pitching on jobs together.* (Erwin Tumangday, Project Manager)

MetroMan Multimedia, is a one-person multimedia firm that has developed a rather unique approach to working with other freelancers and/or one-person firms. The firm shares office space with eight freelancers working in complementary fields including illustration, design and programming. The close knit community of freelancers sharing office space with MetroMan Multimedia receive the benefits of reduced rent, affordable high speed Internet access, and the ability to call on one another as freelancers when projects arise that require multiple skills. The present arrangement is better suited to the 8-freelancer ‘consortium’ than a more formalized firm-like arrangement because it increases their flexibility to work both individually and as a team. Brian Hicks, Project Manager at MetroMan Multimedia describes the benefits of the situation as follows:

*[Rather than pitch for jobs together] we just rely on each of us to get a job and then source it as we need to ... I think that's part of the reason why we're fairly successful in the arrangement that we've got here too. Because I think if [multimedia] companies that we also supply to got a sense that we were going in and pitching as one company then we would lose that potential relationship. We don't want to jeopardize that steady income for the sake of pitching together.*

From these examples it is evident that multimedia firms view the development of relationships, alliances and partnerships with firms in related industries as an important method by which to expand their service offerings and capabilities by taking advantage of external opportunities rather than by pursuing internal changes within the firm.

## ***New York***

With a regional population of nearly 20 million persons (U.S. Census, 1997), access to a large labour pool and a

wide variety of potential suppliers is clearly a benefit of a New York location for multimedia firms. The labour market for multimedia in New York is fragmented, however. The quality of the local labour force mimics the strengths and weaknesses of the New York economy: the availability of skilled labour for creative, finance, and marketing positions makes these jobs relatively easy to fill while programming and technology management positions prove much more difficult to staff (Coopers & Lybrand, 1997). Interview respondents confirmed this problem, noting, as Connie Connors, CEO of Connors Communications does:

*People complain there aren't programmers here. We're not the centre of technology, we don't purport to be the centre of technology. But I think in terms of the centre of media and creativity you can't beat it. The energy here is, as always, great.*

Interviewees were consistently emphatic about the strengths of New York in the cultural industries and how this translates into labour market strengths for multimedia, where creative personnel are concerned.

Despite New York's large labour and talented labour pool, the nature of interfirm interaction is highly competitive and is asserted to be a function of working in New York: a fast-paced city filled with energetic, aggressive businesspeople. Mei Dickerson, Vice President of Business Development at ICE, says that:

*In New York, you have to move fast and be smart, if you snooze you lose. It's a very, very aggressive market and you have to be aggressive about it ... It's a competitive business, other people in the business are basically my competitors. We wouldn't necessarily collaborate with them on what they're doing and what they're developing and they wouldn't want to share that information with us.*

While there may be little incentive for intraindustry interaction in New York, there are however, instances of interindustry collaboration between firms. Andrew Edwards, CEO of Renaissance Multimedia summarizes the general state of cooperative versus competitive relationships and assesses them relative to inter- and intraindustry connections:

*Amongst companies that are very much like ourselves, there is no cooperation at all. There is competition. But there is nevertheless a whole pool of photographers and musicians and writers and publicity people and other digitally minded people, both as suppliers to us and who we supply sometimes that sort of forms this community which I would say is very important.*

In addition to alliances with firms in related industries, New York interviewees also spoke of two main strategies frequently noted in the hiring of freelancers. The first is to subcontract out work to a specialist in an area in which the firm does not have sufficient expertise. Several firm principals spoke of this as being the main reason for seeking out freelancers:

*Part of what we do, and I think what a lot of companies in new media do is, we know when we don't know something, or if it doesn't make economic sense, so we know to job it out. Certain companies and freelancers specialize in particular aspects of what we're trying to provide, and it makes no sense for us economically to try to develop that service. [Outsourcing] is very acceptable in this industry. (Connie Connors, CEO, Connors Communications)*

A second way in which freelancers are commonly used is to supplement the staff of the firm on a per project basis. ICE is a Toronto-based firm with an office in New York that is staffed by some New Yorkers as well as by Toronto staff that travel to New York to work on specific projects. The firm's full time staff of six is frequently increased temporarily through the hiring of freelancers. Freelancers hired to work on individual projects tend to be located in the New York area as there is frequent face to face interaction required between the freelancer and the

firm. In some cases, freelancers work full time in the firm's offices, during the duration of their contracts, while in other instances, freelancers make periodic visits to the firm but work from another location. At ICE, Vice President of Business Development, Mei Dickerson comments "If we have a project that's going on they're [freelancers] in all the time. They basically come on staff almost for a period of time."

While some interviewees indicated that in addition to the importance of cooperating with specialists (i.e. freelancers) working in fields related to multimedia, alliances were also being forged with firms in related industries. There was however, very little mention of these alliances as being critical to the development, work capacity and potential of individual multimedia firms.

### ***San Francisco***

San Francisco multimedia firms interviewed placed greater emphasis than firms interviewed in either Toronto or New York on the importance of collaborating and forging links with firms in related industries as well as sharing information with other multimedia firms. Cooperation and collaboration, as well as the use of freelance employees from specialist fields, are all important methods by which the city's multimedia firms manage to keep their businesses innovative and competitive. San Francisco's proximity to Silicon Valley is especially valuable in this respect, facilitating ease of interaction between the city's multimedia and arts community and the valley's advanced technology and computing industries.

All San Francisco area firms interviewed noted that they work closely with firms in related industries, whether by partnering with 'best of breed' technology firms in Silicon Valley to access cutting edge technologies, or by establishing joint ventures with related engineering, communications, or entertainment companies to leverage each company's individual strengths in jointly created multimedia products. San Francisco's multimedia firms often serve as testing grounds for innovative software and high-tech hardware developed in Silicon Valley. A number of interviewees also indicated that their firms are 'beta testers' for new products coming out of technology firms located in Silicon Valley.

John Evershed, CEO of Mondo Media, appreciates working in partnerships because "everything's moving so fast, and you can't possibly be excellent at all of the things that are going on right now. Through partnering you can learn and build scale that is really hard to do otherwise." Susan Worthman, Executive Director of MDG.org, further highlights the role of partnerships between multimedia and related firms as an important part of the region's success in multimedia.

*Strategic partnering can be vital in this industry ... strategic partners can speed market entry or ease market entry and lower the risks associated with it. Strategic partners can also provide capital and complementary resources where they may not exist within one company. It's the kind of situation where 2 plus 2 make 5.* (Susan Worthman, Executive Director, MDG.org)

These comments demonstrate that multimedia firms and organizations in the San Francisco area place a great deal of importance on cooperation, and understand the role that information sharing, joint ventures and strategic partnerships play in catapulting the region's individual firms to greater levels of success than they could achieve individually.

Interaction between San Francisco's multimedia firms frequently occurs in social settings where staff from different firms share information, discuss new technologies and become involved in joint industry causes. Anita Corona, Director of Communications at Ikonix, acknowledges that while boundaries exist with respect to intrafirm

interaction, shared information helps to propel the multimedia industry as a whole, commenting that:

*We do not share necessarily, proprietary information, because who does that? But there is a need to share things that you've created in order to establish some sort of thought leadership or direction within the industry.*

With respect to the use of freelancers, interviewees in San Francisco generally indicated that they tend to hire freelancers for similar reasons as multimedia firms in Toronto and New York: to access specialized talent and to increase the resources of the firm when work loads increase. Noting both the importance of, as well as the choices that freelancers have when working in the multimedia industry, observers commented that there is a shift occurring within the freelance community, and that people are working as freelancers by choice. Not only, therefore, does the industry itself benefit from the ability to add freelancers when required, but also this arrangement suits freelancers too, who may prefer the flexible work schedules, job diversity and opportunity to work with more than one firm.

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#### **D. Public Policy, Public Institutions and Private forms of Associative Action**

Multimedia's emergence has come swiftly, in some cases surprising policymakers and industry leaders. Public policy and institutional development have followed rather than led the industry's emergence in most cases. Nevertheless, the environment in which multimedia firms now operate is filled with interested parties and stakeholders from both government and industry associations. In each of the three cities under review, there are now governments that would like to intervene in the industry's development to help shape the industry; public and private actors that would like to address problems the industry is experiencing; and associations acting to develop networking communities through which the industry can learn, grow and prosper.

One of the most significant distinctions between the public policy approaches in each of the three cities lies in the policy focus of government. In the case of Toronto, governments view multimedia as an opportunity to further develop the city's strengths in an emerging, knowledge based industry which is perceived to become a key economic driver in the regional and national economy. This broad policy understanding is likely related to the levels of government most prominently involved: provincial and federal.

In both New York and San Francisco, local government involvement is more prominent. In the case of New York, promoting multimedia is seen as a method of encouraging the revitalization of Lower Manhattan, and a way to increase building occupancy levels in an area where vacancy rates had risen to dramatically high levels. It is also the New York government that has been the most active in establishing policy at any level to directly aid the multimedia industry. In San Francisco, policy focus on the multimedia industry is strictly local, but remains at the information gathering stage. The City of San Francisco's interest in supporting the multimedia industry centres around job creation efforts to bring the city's employment levels back to pre-1990 levels.

#### ***Toronto***

In Toronto, policy and institutional support for the multimedia industry comes largely from the regional and national levels, rather than locally. However, much of the work that concerns the industry's development province and nation-wide is conducted in, and focused on Toronto.

The organization most clearly associated with the city's multimedia industry is the Interactive Multimedia Arts and Technologies (IMAT) Association, a national organization headquartered in Toronto. Despite its national focus however, the industry's members are highly centralized in Toronto. IMAT's mandate is to: "generate jobs for the multimedia and cultural sectors; to create an environment for economic development; to bridge the gap between information technology (IT) and culture; to foster Canadian content; and to represent emerging technologies" (IMAT, 1996, 6). To this end, IMAT holds monthly meetings in Toronto, publishes a quarterly newsletter, and advertises jobs within the industry. IMAT currently has over 600 members; 85 percent of IMAT's members are located in the Toronto area, and a further 10 percent are in other parts of Southern Ontario. IMAT is presently refocusing the association to serve the needs of its individual members by organizing and coordinating meetings and networking opportunities, while at the same time broadening its role in matters that affect the industry as a whole such as public policy initiatives.

Very little, if any government support for Toronto's multimedia industry comes from local government, with the exception of East York, a borough of the (now former) Municipality of Metropolitan Toronto whose principal industrial zone is located a mere 10 kilometres from the downtown core of Toronto. This municipality is currently pursuing an economic development plan aimed at revitalizing its industrial areas, in response to the loss of traditional industry. East York has devised an economic development plan aiming to create a "New Media Village" by promoting the existence of fibre optic cable in the area and waiving development charges for businesses (Godfrey, 1996, 2). Thus far, however, these attempts to trigger the relocation and indigenous development of multimedia firms in the area have failed to produce the desired result. They also indicate how distance-sensitive are many of the activities performed in the production of multimedia products.

The other governments that are involved in directly supporting the local multimedia industry are at the provincial and federal levels. Most public policy approaches have thus far been largely focused on information gathering and consultation processes, with some support also going towards export market development .

Currently, at the provincial level, the Ministry of Economic Development, Trade and Tourism is working in conjunction with the Ministry of Citizenship, Culture and Recreation to implement recommendations for public policy initiatives in support of the multimedia industry. The two Ministries worked with a group of multimedia industry leaders, termed the Digital Media Champion Group, in an effort to create a framework by which to address policy directions for the industry. The group ultimately presented a series of recommendations that address the following three strategies: i) strengthen coordination and partnerships within the industry; ii) eliminate barriers to growth; and iii) increase opportunities in domestic and international markets. The recommendations identify ways in which the provincial government can support the industry's continued growth through means such as tax incentives, regulations and improved support for training and education initiatives (Digital Media Champion Group, 1998). Whether or not the recommendations will be implemented to the advantage of the local industry still remains to be seen, however. Other ways through which the government supports the industry's growth and exporting efforts are through a tax credit for animation, the development of promotional materials touting the industry's regional strengths and the sponsorship of booths in international trade fairs.

Industry Canada (the federal government's industry ministry) is actively researching and seeking information on the multimedia industry, though little in the way of concrete programs have been developed. In addition to conducting periodic surveys of the multimedia industry, Industry Canada has supported the development of a promotional CD-ROM listing Canadian multimedia firms which was distributed at MILIA '97, an annual multimedia conference held in Cannes, France. In an effort to further support the development of Canadian multimedia exports, the Department of Foreign Affairs and International Trade posts information officers with multimedia industry expertise in American centres of multimedia activity, including New York, Chicago, Boston, Los Angeles and San Francisco.

While specific policies directed at Toronto's multimedia industry are lacking, Brail and Gertler (1997) contend that the greatest government support the industry has received thus far has come in the form of national and provincial cultural policies which have had positive but indirect effects on the industry's development. Canadian governments have a strong history of supporting the nation's cultural industries through tax measures, regulations and direct subsidies. These forms of intervention have been justified largely as a result of the threat of American domination over the Canadian cultural environment due to the country's proximity to the United States, the lack of a language barrier for English-speaking populations, and the relatively small Canadian population which is spread out across a large land mass (Smith, 1990). Government intervention in Canada's cultural industries has been accredited with the development and success of several sectors, including film, sound recording, and book publishing. Representatives of these sectors insist that the support of government policy has led to the development of Canada's cultural industries (Brail, 1998).

### *New York*

Initiatives to support the local multimedia industry in New York have been pursued by both local and state governments and also by associations that have emerged to support the industry's growth and development. The organization which stands out as having played the most significant role in creating awareness and promoting the industry's strengths is the New York New Media Association (NYNMA). NYNMA is perceived as an exemplary industrial organization because of its success in leveraging membership and in bringing together the various stakeholders working within and peripheral to the multimedia industry.

NYNMA was founded in 1994, and its membership grew to more than 2,000 people from over 1,300 companies by mid-1997 (NYNMA, 1997). When it was first begun, NYNMA's mission was to help foster the development of new media as an industry in New York. The organization's focus has changed somewhat as the industry has grown and its needs have changed. NYNMA is currently focusing on ways to further support the players who comprise the industry, especially entrepreneurs and creative and business professionals. The association holds monthly networking events, offers seminars, panel discussions and product presentations. Additionally, NYNMA has introduced an "angel investment" breakfast series to help new media entrepreneurs gain access to potential funding (Connie Connors, President, NYNMA). NYNMA has clearly helped to create an environment of networking, information, and collaboration between new media stakeholders and players; however this should not be confused as a widescale culture of information sharing and cooperation between the city's multimedia firms, as their competitive intraindustry focus was evidenced by previous discussion.

Government action has also been instrumental in supporting the city's multimedia industry and has encouraged the clustering of multimedia firms in downtown Manhattan through a series of policies designed to help revitalize the area. Local and state governments have been active in supporting the multimedia industry in New York, in the form of financial incentives such as tax reductions and infrastructure improvements to individual buildings. These initiatives are aimed at encouraging multimedia firms to continue to locate in, and help contribute to, the revitalization of downtown areas which were devastated following the 1987 stock market crash and the subsequent bankruptcy and downsizing of several financial institutions leading to a vacancy rate of 23 percent in Lower Manhattan (Krantz, 1995). In addition to financial incentives to encourage firms to locate and remain in downtown Manhattan, a program was developed to encourage information technology firms to locate in the area by offering discounted leases in newly rewired buildings (Berman, 1997).

### *San Francisco*



San Francisco's multimedia industry has been sponsored and supported by both local organizations and local government. Despite the apparent levels of organization and coordination within the industry however, associative and public responses have been slower in coming than in the case of New York.

One organization that works to support the industry's needs is MDG.org. MDG.org is a non-profit member-based organization for the interactive industry. Their focus is on market and business development for the multimedia industry, rather than on lobbying for policy and standards development. The organization's focus is shaped by the belief that because the industry is largely driven by entrepreneurs and startups, market and business development are prime concerns for the people that are driving the industry's growth. The majority of MDG.org's 300 member companies are from California, with 70 percent located in the Bay Area. The organization provides three types of services to members: education, networking opportunities and industry promotion. They have also helped fund a survey of the local industry, in conjunction with financial support from the City of San Francisco.

Government action with respect to San Francisco's multimedia industry has largely been undertaken as a result of interest on the part of local public policy makers in learning more about the industry, especially with respect to how multimedia firms can be expected to contribute to the city's continued economic development through job creation, urban revitalization, development levies and taxes. The San Francisco Partnership, a public-private partnership, has been initiated with the goal of attracting and retaining business in the city and to increase employment to pre-1990 levels. A recent Partnership report focuses on ways of attracting and maintaining three 'industries of the future' in San Francisco. These industries include multimedia, as well as life sciences and financial services. "Capturing the Opportunity for Economic Vitality" (1996) distinctly recognizes multimedia as a growth industry in which San Francisco has a comparative advantage and which can help to revitalize the city's declining industrial and employment base. The City of San Francisco Planning Department is also reviewing the ways in which the industry can be expected to contribute to the city's economy in the form of taxes, infrastructure improvements and employment. They recently released a report on the characteristics, location propensities and major issues faced by the industry at present, as well as discussing the anticipated positive effects of the industry's growth on the city's vibrancy in the future (San Francisco Planning Department, 1997).

However, many interviewees in San Francisco indicated that they did not support government intervention in the industry, highlighting the fact that public policy has thus far played a minimal role in the industry's development. According to Susan Worthman, Executive Director of MDG.org:

*This cluster did not grow up because of public policy. It grew up driven by this confluence of factors but driven largely by private industry. Public policy can only either get out of the way or look at what they're doing that may get in the way and then not do that. Whether it can stimulate it or not remains to be seen.*

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#### 4. Why has the 'new' media emerged in 'old' urban areas?

Certainly, there are both similarities and differences amongst the multimedia clusters in Toronto, New York and San Francisco, summarized in [Table 3](#). All three are populous centres that possess vibrant cultural and corporate

activity, traditional media and communications industries, and urban centres that remain critical to each city's respective regional economy. The location pattern of multimedia clusters in each of these cities is remarkably similar: former industrial and warehousing areas on the fringes of the downtown, in close proximity to both the central business district and neighbouring arts communities comprise the focal point of multimedia production in Toronto, New York and San Francisco.

Linkages between multimedia firms and firms in related industries such as media and communications, art and design, and computing are common in each city. The nature of linkages however, appears to be dependent on the regional economy. New York's multimedia firms are strongly aligned with the city's advertising industry, while San Francisco firms emphasized their linkages to Silicon Valley technology firms over most other relationships, and placed greater emphasis on the cultural practice of information sharing than firms in New York or Toronto. Firms interviewed in each city indicated similar types of business practices that enabled them to flexibly adjust labour based on project and skill requirements as well as the development of interindustry relationships to enhance product and talent offerings.

**Table 3: Toronto, New York and San Francisco -- Similarities and Differences**

	<b>Toronto</b>	<b>New York</b>	<b>San Francisco</b>
<b>Size (metro)</b>	4.5 million	20 million	6.5 million
<b>National Rank</b>	Largest metro area in Canada	Largest metro area in U.S.	5 <sup>th</sup> largest metro area in U.S.
<b>Intraurban Geography</b>	62% of multimedia firms in central city	65% of multimedia firms in central city	Not available
<b>Urban Clusters</b>	Shoulders of CBD - 43% of all multimedia firms in City of TO	Silicon Alley - 52% of all multimedia firms in City of NY	Multimedia Gulch - 49% of all multimedia firms in City of SF
<b>Geography of Clients</b>	City-focused	City-focused	Regionally-focused
<b>Key Geographic Strengths</b>	Centre of both corporate headquarters and cultural industries in Canada	Centre of U.S. advertising, media and financial services	Proximity to Silicon Valley technology firms and culture of entrepreneurship and information sharing
<b>Nature of Cooperation</b>	Competitive at intraindustry level; Cooperate with firms in related industries	Highly competitive intraindustry; Cooperation exists at interindustry level with freelancers and specialists	Cooperate at intraindustry and interindustry levels; Emphasize role of partnerships

<b>Policy Focus</b>	Federal and provincial governments play largest roles; Information gathering stage	Local and state government; Implemented tax reductions, and infrastructure improvements	Local government; Information gathering stage
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Where the individual clusters studied differed most was in the type and focus of public policy and associative action present in each city. These multimedia clusters appear to have emerged ‘naturally’ in each city, and not as a result of policy intervention or guided associative action. However, the extent to which the local industry has been supported varies widely, with the greatest amount of direct local support being levied in New York, where the industry has been supported by local and state government under the assumption that multimedia firms can help to revitalize an urban area in decline. Governments in Toronto and San Francisco have become involved in reviewing the industry’s impacts on local and regional economies, but have yet to take much direct action to support the industry.

This research definitively supports and reinforces the conclusions of earlier research (Capello and Gillespie, 1993; Coffey, 1996; Graham and Marvin, 1996; Graham, 1997): industries based on information and communications technology still rely heavily on interpersonal networks and strong backward linkages leading to agglomeration in urban centres. The convergence of technology and creative sectors, and the history of large city-regions as centres of culture (Scott, 1997) further reinforce the importance of urban locations for multimedia activity. The development of the industry has been shown to be strongly path-dependent, relying on talent from diverse backgrounds, and the industry continues to rely on the services of specialized expertise in traditional media, programming, arts, and related fields. The presence of multiple and diverse education and training institutions, and access to cultural amenities and services, has also helped the industry to develop in the major North American centres of multimedia production discussed here. The industry’s reliance on such specialized inputs, most readily available and accessible in the downtown core of large urban centres, bodes well for the future of multimedia as an urban industry.

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Anderson, Karen. Interlynx Multimedia, President.

Brandt, Ron. Canada Media, Vice-President Marketing.

D'Sousa, Ritoo. Industry Canada, New Media and Entertainment.

Danzig, Brigitte. Ministry of Economic Development, Trade and Tourism, Information Industries Office.

Davies, Bryan. Kortright Conservation Centre, Multimedia Coordinator.

DeConinck, Daniel. High Res Technologies, President.

Derry, Don. Interactive Multimedia Arts and Technologies Association, Executive Director.

Dowsett, John. Adrenaline Communications, Principal.

Duffy, Paul. Corporate Communications Interactive, Managing Partner.

Evitts, Jesse. Forefront Graphics, Senior Technical Engineer.

Feist, Harold. 2D Art Systems, President.

Ferrari, Vanessa. Megapix Communications Inc., Media Specialist.

Froman, Adam. Interactive Multimedia Arts and Technologies Association, President.

Gleason, Arne. St. Clair Interactive Media, Senior Multimedia Developer.

Godfrey, John. Federal Government of Canada, Member of Parliament.

Gower, Gord. Mackerel Interactive Media, President.

Herrington, Janice. Corporate Communications Interactive, Director of Development.

Hicks, Brian. MetroMan, Project Manager.

Jackson, Kevin. NVision Multimedia, Partner.

Janczak, Voytek. Janczak/Mandel Associates Inc., Principal.



Karsten, Selia. Karsten Productions, Principal.

King, John. Bell Centre for Creative Communications, Director.

Langlois, Aurel. Electramedia, Director.

Latimer, Jim. Cyberplex Interactive Media, Technical Director.

Mandel, Carl. Janczak/Mandel Associates Inc., Principal.

Maraldo, Brett. Plexus Interactive, Principal.

Montgomery, Robert. Ministry of Citizenship, Culture and Recreation. Director, Cultural Policy Branch.

Nikitopoulos, Peter. ICE Inc., Marketing Director.

O'Donnell, Brian. Irwin Publishing, President.

O'Hara, Frank. O'Hara Systems, President.

Paterson, Nancy. Paterson Productions, President.

Plant, David. Toronto Film and Television Office, Film Commissioner.

Punnett, Sam. Free Association Development, President.

Putterman, Connie. Information Technology Research Centre, Manager, Marketing Industry Interaction.

Ratchford, Donna. Ministry of Citizenship, Culture and Recreation, Policy Analyst.

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Rossiter, James. Knowledge Connection Corporation, Executive Director.

Shostak, Michael. Digital Renaissance, Vice-President Marketing.

Stewart, Walter. SMART Toronto, President.

Sweetman, Bill. Electric Eye Multimedia, President / Ideaguy.

Tumangday, Irwin. Random Core Multimedia, Project Manager.

Van Buskirk, Christopher. TNT Interactive, Vice-President.

## ***New York***

Connors, Connie. Connors Communications, President and CEO.

Dickerson, Mei. ICE Inc., Vice President, Business Development.

Edwards, Andrew. Renaissance Multimedia, CEO.

King, Steve. Virtual Growth Incorporated, President.

Kwon, Thomas. Dynamind, CEO.

Raposo, Tony. Canadian Consulate General, Commercial Officer.

Rose, Miles. Regional Delights, Principal; MediaPartners, Principal.

Sousa, Chris. Sixth Gear Internet Solutions.

Wong, James. The Atlas Organization, Principal.

## ***San Francisco***

Bauman, Catherine. City and County of San Francisco, Planner.

Bui, Theresa. Red Dot Interactive, Manager, Marketing Communications.

Corona, Anita. Ikonik, Director, Communications.

Evershed, John. Mondo Media, CEO.

Ghosh, Amit. City and County of San Francisco, Chief, Comprehensive Planning.

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Robins, Debra. San Francisco Production Group, President and CEO.

Worthman, Susan. Multimedia Development Group, Executive Director.

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