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# THE MULTIMEDIA INDUSTRY IN CANADA: AN ANALYSIS OF DEVELOPMENT OPTIONS

PREPARED FOR THE DEPARTMENT OF CANADIAN HERITAGE



Note

The views expressed in this Study are those of Groupe SECOR and do not necessarily government policy.

**Internet**

The study may be download from the Department of Canadian Heritage Internet site at the Cultural Development and Heritage home page.

[http://www.pch.gc.ca/culture/library/multimed/multi\\_e.htm](http://www.pch.gc.ca/culture/library/multimed/multi_e.htm)

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## INTRODUCTION

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### OBJECTIVES AND OUTLINES OF THE STUDY

The Department of Canadian Heritage gave the SECOR Group a mandate to study various support mechanisms to the multimedia industry in Canada.

This request reflects the Department's interest in a sector of activity that is both very promising from an economic and job-creation point of view and unavoidable as a new product and method of cultural dissemination. Multimedia is an important source not only of innovative value-added concepts, but also of new possibilities for packaging and distributing "traditional" cultural products. It is thus both logical and reassuring that the federal government is concerned with the development of this highly strategic sector.

The SECOR Group's approach is based on the assumption that the federal government wants to provide financial support to the multimedia industry and that such support can achieve both **industrial and cultural** objectives. The options suggested are premised on this.

At the Department's request, the mandate focused on multimedia development and production, in light of the vital importance of this "link" in the chain of value and given the emphasis on contents. The proposed measures do not therefore take specific account of other needs in the multimedia sector, such as initiatives that focus more on R&D and innovation, direct support for artists and artisans in this sector, or mechanisms to resolve the chronic problem of publishing and distribution in Canada and abroad.

The study simply sketches the outlines of a multimedia support program. At this stage, it is still premature to define the exact parameters of the program with respect to types of production to support, eligible expenses, the specific mechanism for distributing funds, etc.

To that end, we feel it is important that the Department of Canadian Heritage consult the various players in the industry in order to determine their needs and expectations with respect to public support of multimedia. It would also be a good idea to obtain more up-to-date information about the Canadian industry, particularly on the number of companies working in the multimedia sector, by main market and sector of activity, the size of these companies, their volume of production, etc. This information is essential in order to refine the analysis and estimate the budget required for such a program.

## STRUCTURE OF THE REPORT

The report contains five parts:

- θ First, an overview of the Canadian multimedia industry describing its structure, the main players and the profile of companies working in this sector.
- θ The second section is devoted to an analysis of the Canadian multimedia market, its main segments and the principal demand drivers.
- θ The third chapter is concerned primarily with the financial aspects of multimedia development: cost structure and profitability, the need for funds, etc. It also deals specifically with sources of funding available in this sector.
- θ The fourth chapter describes the various methods of government intervention, the justification for each and their main characteristics.
- θ Finally, the analysis of the balance between the sector's needs and present resources completes the study and makes it possible to discern paths for multimedia support worth exploring.

# 1. THE CANADIAN MULTIMEDIA INDUSTRY

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Canada is already in an excellent position to take advantage of the opportunities presented by the burgeoning multimedia market. Canada has certain assets essential to the development of a strong multimedia industry:

- **Recognized creativity** that gives it the ability to create new contents and to integrate existing contents and adapt them for multimedia use.
- The presence of a large number of **companies in the leading-edge technologies** underlying multimedia, some of which are world leaders in their field.
- A **pool of human resources** in computer sciences, software engineering, film and video production and publishing, and the ability to train these people for the new features of multimedia.
- **“Banks” of contents** that can be used for: quality television productions, documentaries and other audiovisual productions, books, periodicals and newspapers, museum collections and other works, databanks, etc.

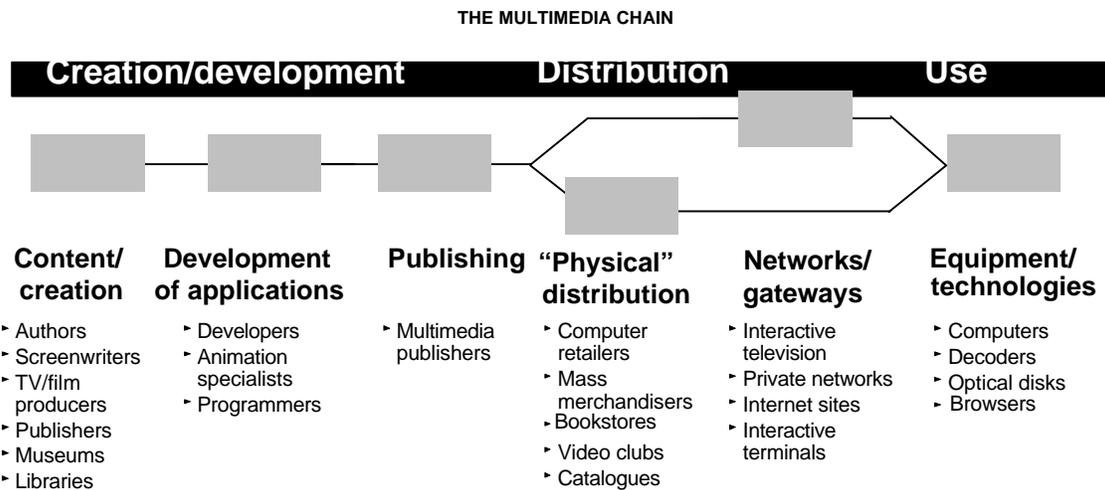
## 1.1 THE PRODUCTION CHAIN

There are in Canada at present more than a thousand companies active in the multimedia sector at various steps in the production chain: creation, development of applications and software, publishing/distribution, and the multimedia equipment and technologies sector. Each of these “links” has very specific characteristics and roles as well as business relations with the other players in order to ensure balance all along the chain.

More specifically, the “links” are::

- The **creators**: authors, composers, directors, graphic artists, film and television producers, publishers, etc. There are also the owners of contents, such as television stations, museums, libraries ... and the owners of databanks and other information.

- The **developers** of multimedia applications: developers of interactive games, educational, training and reference applications and other interactive productions, as well as software developers for the production of multimedia material: authoring tools, 2D and 3D animation tools, special effects and postproduction software, etc.
  
- The **publishers** of multimedia products, whose main role is to market these productions. Publishers sometimes develop their own applications internally, but they usually work in close cooperation with external developers. The publisher is thus often involved in the general definition of the content and in the funding.
  
- The **distributors**, which are of two types, “physical” distributors and electronic networks. The first group is composed primarily of distributors of CD-ROMs and other multimedia platform, while the second group is dominated by cable broadcasters, telephone companies, and broadcasters using satellite and other wireless networks that make it possible to broadcast on-line multimedia content. The network owners often use “gateways” to offer users direct access to packages of value-added multimedia applications.
  
- The **manufacturers of hardware and software**, who generally deal directly with the user. This group includes manufacturers of multimedia computers and makers of servers, decoders, etc., and the developers of browsers and other tools related to on-line access.



Source: SECOR

The model is obviously not necessarily linear and there are many interactions between each of the various links previously mentioned. This illustration, however, allows us to identify the main players in the industry and to specify their main roles.

### 1.1.1 Creation/content

Canada's artists - authors, screen writers, graphic artists, musicians, etc. - have an unmatched reputation. The interest that the industry "giants" (like *Disney* and *Microsoft*) take in our creators is proof of Canadian abilities in this area.

Canada also has a certain number of companies of international scope, in several sectors, that provide content for multimedia use, primarily companies in the fields of audiovisual, publishing and sound recording.

- ↪ In book, periodical and newspaper **publishing**: *Éditions Québec-Amérique*, *MacLean Hunter* (Rogers), *Télé média*, *Quebecor*, *GTC*, *McLelland & Stewart*, *Knopf Canada*, *Stoddart*, etc.
- ↪ In **audiovisual**, both in television and feature film: *Alliance*, *Malofilm*, *Paragon*, *Nelvana*, *Cinar*, *Atlantis*, *Télé-Métropole*, the *CBC*, the *NFB*, etc.

- In **sound recording**: *Disques Audiogram, A&M Records, EMI of Canada, WEA Music of Canada, etc.*

On the whole, and by main market, the cultural industries constitute a very important driver of economic activity in Canada in terms of their contribution to the Canadian gross domestic product and job creation.

In 1994-95, the cultural industries' contribution to the GDP was estimated at \$29.2 billion and the level of direct employment at 960,000. More specifically, in the sectors most closely related to multimedia - audiovisual production, publishing and sound recording - we are talking about some 2,500 companies, more than 17,000 full-time jobs and revenues on the order of \$3.2 billion for 1995.

**NUMBER OF COMPANIES, JOBS AND SALES FIGURES FOR THE CULTURAL INDUSTRIES IN CANADA IN 1994-95**

	<b>Number of companies</b>	<b>Full-time jobs</b>	<b>Sales figures</b>
Audiovisual (production) (1995)	708	3,561	\$1,109.8M
Periodical publishing (1995)	1,083	4,498	\$866.9M
Book publishing (1995)	326	6,808	\$655.9M
Sound recording (1994)	210	2,487	\$933.8M

Source: Statistics Canada

### 1.1.2 Development of applications

Multimedia applications developers in Canada work in several markets and offer a range of products. Whether it is interactive games, educational games, corporate applications or Web sites, the Canadian industry has many firms and important players, most of them located in Quebec, Ontario and British Columbia.

The main companies include:

- In design of **games and reference works**: *Megatoon*, a subsidiary of Behaviour Communications(Quebec), *Éditions Québec-Amérique* (Quebec), *Cedrom-SNi*, a subsidiary of GTC (Quebec), *Sanctuary Woods* (B.C.), *Gray Matter* (Ontario), *MicroForum* (Ontario).

We should also mention the imminent arrival in Quebec of the French giant *UbiSoft*, an international leader in the application of high-end games, both as a developer and publisher.

- In **corporate applications**: *Famic* (Quebec), *Vicom* (Alberta), *TTG* (Alberta), *Digital Renaissance* (Ontario), *Intellia Productions*, a subsidiary of Quebecor (Quebec), *BGW Multimédia* (Quebec), *ICE* (Ontario).
- In **educational applications**: *Micro-Intel*, a subsidiary of Quebecor (Quebec), *Motion Works* (B.C.), *I. Hoffman & Assoc.* (Ontario), *McGill Multimedia* (Ontario), *Innotech Multimedia* (Ontario).

As for the developers of technology and software for multimedia design - authoring tools, 2D and 3D animation software, etc. - leaders such as *Softimage*, *Discreet Logic*, *Corel*, and *LMSoft* have already made Canada an international player.

### 1.1.3 Multimedia publishing

Multimedia publishing and distribution are the weak link in the chain in Canada. Despite the presence of large firms such as *Quebecor* and *Malofilm* in this area, the major American players dominate this market to such an extent that it is difficult for Canadian titles to find room on the “shelves” of international retailers unless they are distributed by large American publishers. This situation is particularly worrisome because it also affects the domestic market. Although we do not have statistical information on the content and provenance of CD-ROMs sold in Canada, it is a well-established fact that the vast majority of “consumer” titles are developed and distributed by major American publishers.

The multimedia industry is characterized by the domination of a handful of almost unavoidable "giants." According to the results of a 1995 *Dataquest* survey, the world market for the sale of CD-ROMs is dominated by *Microsoft*, which controls more than 15% of the market, followed by *Mindscape*, with 12.4% and *Grolier*, with 9.4%. If we exclude bundle sales - where CD-ROMs are included free of charge with the purchase of multimedia hardware or specialized magazines - the five largest publishers corner 60% of the market.

WORLD SALES OF MULTIMEDIA CD-ROMS (MILLIONS OF UNITS)

PUBLISHER	TOTAL SALES		"NON-BUNDLE" SALES	
	UNITS	PROPORTION	UNITS	PROPORTION
Microsoft	8.3	15.4%	4.0	21.6%
Mindscape	6.7	12.4%	1.7	9.2%
Grolier	5.1	9.4%	-	-
Electronic Arts	3.0	5.5%	2.1	11.4%
Broderbund	2.5	4.7%	1.9	10.2%
Interplay	NA	NA	1.5	7.8%
Other	28.3	52.6%	7.3	39.8%
<b>Total</b>	<b>53.9</b>	<b>100.0%</b>	<b>18.5</b>	<b>100.0%</b>

Source: *Dataquest*, 1995

This situation is not unlike the preponderance of the "majors" in film production. As in the film industry, American publishers can translate their CD-ROMs and amortize their costs over the greatest number of countries. Local publishers thus face competition not only on international markets, but in their own market as well.

As we have mentioned, the arrival of the French publisher *UbiSoft* in Quebec will undoubtedly help improve Canada's position in the multimedia publishing market.

#### 1.1.4 Distribution

There are two main types of multimedia distribution:

- **“Physical” distribution** concerns applications on a platform (optical disks) and consists primarily of distribution via wholesalers (or “rack jobbers”) for sale in various types of retail outlets: computer stores, bookstores, mass merchandisers, video clubs, etc. This form of distribution also includes catalogue sales and direct marketing.
- **“Network” distribution** is characterized by direct access to multimedia applications via Internet or private networks (*America Online, Compuserve, Microsoft Network, Infonie*, etc.). This method of distribution can use various kinds of infrastructure: cable, telephone line, satellite, wireless, etc. Direct access is also possible via interactive terminals that are in fact merely a server to which one has “on-site” access.

PHYSICAL DISTRIBUTION

The physical distribution of multimedia titles varies considerably depending on whether we are talking about the general-public, corporate or institutional markets. Consumer CD-ROMs are generally sold through wholesalers or rack jobbers, who deal with computer retailers, mass merchandisers, bookstores, etc. Occasionally, distributors sell directly to the consumer through catalogue orders, 1-800 services, etc.

MULTIMEDIA DISTRIBUTION CHAIN - GENERAL PUBLIC



The network for sales to corporate and institutional markets is quite different. The developer very often works **on order** and does business directly with the user (company or

organization). In some cases, primarily for the educational market, specialized distributors serve as intermediaries.

The importance of on-order sales in Canada is reflected particularly in the use of the different methods of distribution. Thus, more than 70% of companies use direct sales, while only 31% of firms use retail sales; mail order (outlet/catalogue) is in third place, with 28% of firms using it. Only 22% of companies distribute their products on line.

USE OF METHODS OF DISTRIBUTION

METHOD OF DISTRIBUTION	PERCENTAGE USE
On-order sales	71%
Retail sales	31%
Outlet/catalogues	28%
On-line distribution	22%
Bundle sales	14%
Other	24%

Source: DJC Research, 1995

This breakdown matches the breakdown for types of content. As a rule, small firms are more active in the corporate sector, with promotional/ communication or training contents, while the major players operate in the reference or games/educational games market.

NETWORK DISTRIBUTION

In the area of on-line distribution, Canada's telecommunications networks give it a competitive advantage. Whether it is communications by cable, telephone, satellite or wireless cable (LMCS), the Canadian industry is definitely one of the most advanced in the world.

What is more, all the major players in the telecommunications sector in Canada are in the process of modernizing their networks to give them the bandwidth and bidirectionality needed to offer direct access to a wide range of interactive multimedia services.

The major firms in this sector include *Bell Canada*, *Videotron*, *Rogers*, *Shaw*, *Telesat*, *Teleglobe* and *Cancom*.

In addition to the infrastructure, a number of “gateways” have appeared in recent years, created for the most part by network managers or as partnerships between them and the content producers. The most advanced initiatives include *Videotron’s UBI* project, and the packages of value-added services offered by many Internet access suppliers, such as *Bell’s Sympatico*, *Videotron’s InfiniT*, *Roger’s Wave*, etc.

Despite all the projects under way, the vast majority of Canadian networks are still not sufficiently modernized to transmit quality real time images in motion, which shows the development of sophisticated interactive multimedia applications for network use. This situation is likely to continue for several years in light, among other things, of the significant investments infrastructure owners must make.

#### 1.1.5 Equipment/technology

In the area of the equipment and technology related to multimedia “consumption,” Canada has an appreciable number of world leaders in several basic areas, such as:

- ⇒ *Eicon*: interconnectivity products for computers;
- ⇒ *M3i*: network management systems;
- ⇒ *Alis Technologies*: multilingual computer systems;
- ⇒ *ABL Canada*: advanced digital equipment for networks;
- ⇒ *Matrox*: electronic imagery;
- ⇒ *CAE* and *ATS Aérospatiale*: simulation and virtual reality;
- ⇒ *Nortel*: network switching equipment.

In all the areas mentioned, there are also a multitude of smaller companies, occupying specialized niches, that are known for their innovation and the quality of their products.

## 1.2 CANADIAN COMPANIES

A study conducted by the firm *DJC Research* for Industry Canada in 1995 revealed that the profile of companies working in the field of multimedia was closely associated with the main sector of activity in which they were active. As a rule, companies working in the corporate sector, where development is done primarily on order, are small, while those active in the general-public or education sector are larger.

PROFILE OF COMPANIES BY SEGMENT

CORPORATE	EDUCATION	CONSUMER
<ul style="list-style-type: none"> <li>• Small companies</li> <li>• Active for more than 5 years</li> <li>• Focus on production</li> <li>• Primarily applications related to sales, training and company promotion</li> </ul>	<ul style="list-style-type: none"> <li>• Large companies</li> <li>• Active for 9 years</li> <li>• Focus on publishing</li> <li>• Educational and service applications</li> </ul>	<ul style="list-style-type: none"> <li>• Medium-sized companies</li> <li>• Active for roughly 3 years</li> <li>• Good penetration of American markets</li> <li>• Primarily information, reference and entertainment applications</li> </ul>
	<ul style="list-style-type: none"> <li>• 60% are also active in the consumer segment</li> </ul>	<ul style="list-style-type: none"> <li>• Revenues greater than \$1 million</li> </ul>

Source: *DJC Research*, 1995

Since this study was done two years ago, the majority of the industrial issues have remained unchanged. Nevertheless, the structure of the industry has changed, and the portrait of 1995 is not necessarily valid today. The main difference is that the industry has “aged,” that is, there are now more companies with more years of experience in the sector. There has also been (and still is) a marked trend toward consolidation, producing a more concentrated industry dominated by a few major players.

### 1.2.1 Number of years in existence

A recent SECOR study of Quebec firms working in the multimedia sector indicates that, as of 1997, firms in the multimedia industry have been active somewhere between 1 and 9 years, with the average being 3.4 years.

### 1.2.2 Employment

Although there are a multitude of small companies active in the multimedia sector, at the other end of the spectrum we find a few major players that grew quickly (primarily through acquisition) and now have a significant critical mass in multimedia activities.

The industry's consolidation is reflected, among other things, in the distribution of the number of employees assigned to multimedia in the companies, and there are now more firms with 5 to 10 employees (31% vs. 23%). The industry nevertheless remains fragmented, with 55% of firms having fewer than 10 full-time employees in 1997.

At the same time, although the percentage of firms with more than 50 employees has increased only slightly (from 13% to 16%), almost 10% of companies in 1997 have more than 100 employees active in the multimedia sector; in 1995, there were none.

DISTRIBUTION OF AVERAGE NUMBER OF EMPLOYEES BY FIRM

Number of employees	1995	1997
0 to 4	33.3%	24.0%
5 to 9	23.4%	31.5%
10 to 19	16.7%	18.5%
20 to 49	13.3%	9.3%
50 to 99	13.3%	7.4%
100 or more	-	9.3%

Source: SECOR surveys, 1995 and 1997

### 1.2.3 Sales figures

The industry's consolidation is also reflected in companies' sales figures. According to the DJC Research survey, 53% of the companies in 1995 had revenues under \$200,000, while only 21% had revenues over \$500,000. If we compare these results with those of the 1997 SECOR survey, it is apparent that the industry is more concentrated and that major players have made their appearance in the market. Very small companies (less than \$200,000), although they still represent 28% of firms, are much less numerous than two years ago.

## SALES FIGURES

	Distribution of companies	Distribution of revenues
0 to \$200,000	28.1%	1.0%
\$200,000 to \$500,000	26.3%	3.2%
\$500,000 to \$1 million	19.3%	5.1%
\$1 to 5 million	10.5%	9.2%
\$5 to 10 million	1.8%	4.6%
\$10 million and over	14.0%	76.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

Source: SECOR, 1997

#### 1.2.4 Geographic presence

In 1995, few firms had successfully established themselves in foreign markets, and exports represented only 20% of sales figures.

The situation has apparently improved very little, if we are to believe the results of the recent *Sciencetech* study, according to which 83% of the sales of Quebec multimedia developers are made in Canada. The main reasons for this phenomenon include:

- a large number of companies are active in the corporate and educational segment, which is characterized by a primarily domestic market;
- the marketing and distribution structure is weak and few producers have access to foreign distribution networks.

**PERCENTAGE OF COMPANIES' REVENUES BY GEOGRAPHIC REGION**

REGION	REGIONS SERVED (%)	PROPORTION OF REVENUES
Canada	98%	79%
United States	58%	16%
Europe	22%	3%
Latin America	7%	--
Southeast Asia	11%	1%
Japan	8%	--
Other	10%	1%
<b>Total</b>	<b>NA</b>	<b>100%</b>

Source: DJC Research, 1995

**1.2.5 Types of clients**

The data gathered by SECOR on the Montreal region show that the majority of companies are active in the corporate segment, that is, their main clients are companies.

An interesting fact is that a number of companies are active in both the corporate and general-public segments, a phenomenon characteristic of an emerging, high-risk market. This situation is similar to that of the audiovisual industry in its early days, when a number of film and television producers were also active in the advertising and corporate production markets, which were less risky and more profitable in the short term and thus provided some stability.

**MAIN MARKET**

Market	Distribution of companies
Companies	43.3%
General public	33.4%
Education	15.0%
Government	5.0%
Health	3.3%
<b>Total</b>	<b>100.0%</b>

Source: SECOR, 1997

## 2. THE MARKET: SIZE AND TRENDS

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The Canadian multimedia market has three main segments: the consumer, educational business. Each of these segments has very distinct characteristics as regards the penetration of multimedia tools and applications and the expected development in the next few years.

### 2.1 THE CONSUMER SEGMENT

One of the decisive variables in the size and development of the consumer market is the development of the main sources of access to multimedia applications, in particular, computers equipped with CD-ROM drives and modems. At present, virtually all multimedia products are “consumed” in one of these ways, either on optical disk read by computer, or by direct access via modem. The proportion of products using other methods is very low, indeed negligible, and consists of access through interactive kiosks, arcade games, etc.

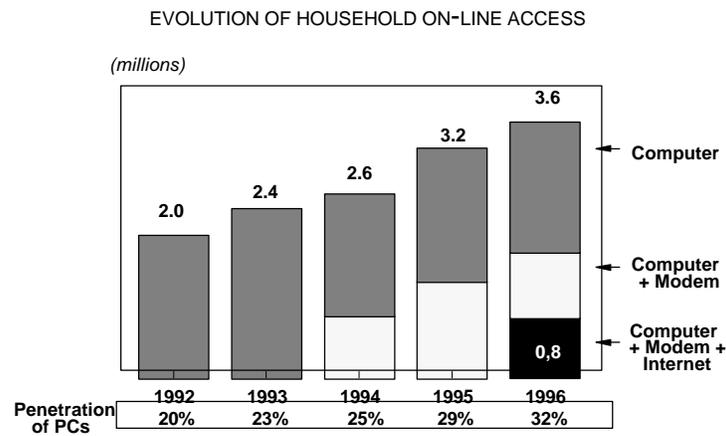
In 1996, according to Statistics Canada, **32% of Canadian households had a computer**, a proportion that has grown considerably in recent years (in 1992, the penetration was only 20%). We do not, however, have figures on the proportion of these computers equipped with CD-ROM drives, because Statistics Canada does not gather such data. In the United States, however, according to 1996 American statistical data, almost 77% of the households with a computer also have a CD-ROM drive. A recent *Sciencetech* study “*Perspectives sur l’industrie et le marché du multimédia et d’Internet au Québec*,”<sup>1</sup> reveals that 58% of households in Quebec with a computer also have a CD-ROM drive.

If we assume that 65% of households in Canada with a computer also have a CD-ROM reader, this means that some **20% of Canadian households currently have a CD-ROM drive**.

Furthermore, 1.8 million Canadian households had a computer and a modem in 1996 (almost 50% of computer owners) and 0.8 million households had Internet access.

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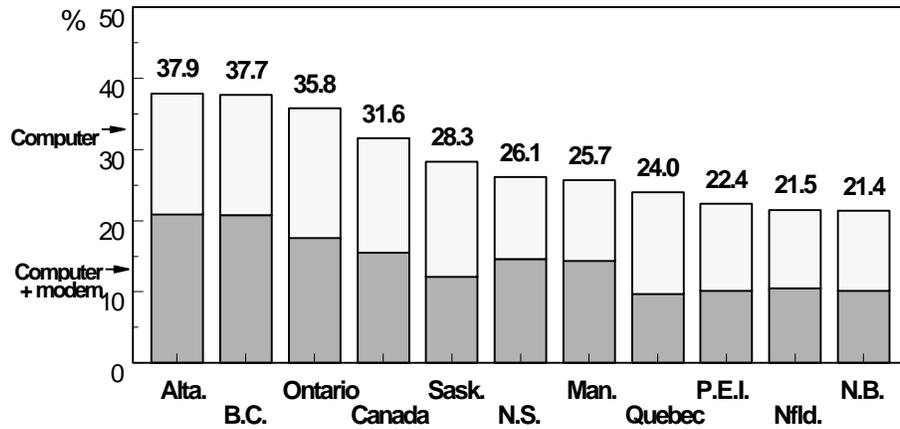
<sup>1</sup> SECOR will provide English title, if any - TR.



Source: Statistics Canada

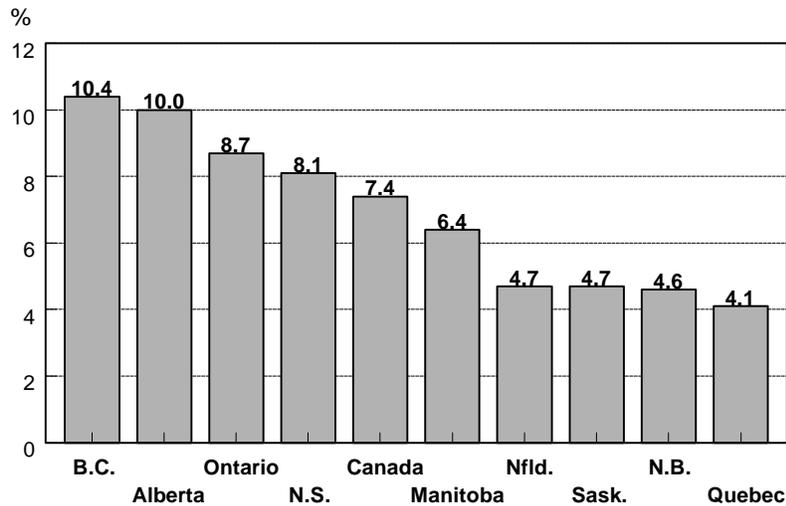
It is interesting to note how the penetration of on-line access varies from province to province. It is much higher in the western provinces and Ontario than in Quebec and the Maritimes.

HOUSEHOLD PENETRATION OF COMPUTERS AND MODEMS - 1996



This “asymmetry” is also reflected in the Internet penetration of households. Quebec ranks last for Internet penetration, with the exception of Prince Edward Island.

INTERNET PENETRATION OF HOUSEHOLDS - 1996



## 2.2 THE EDUCATIONAL SEGMENT

The education market is very promising over the next few years. Although few institutions currently have multimedia computers, the drop in the price of equipment and the growing popularity of multimedia as an educational tool promise strong growth in this market.

According to the 1994 report prepared by *Industry Canada*, "*Educational Opportunities on Canada's Information Highway*," the main applications of information technologies in the education sector are:

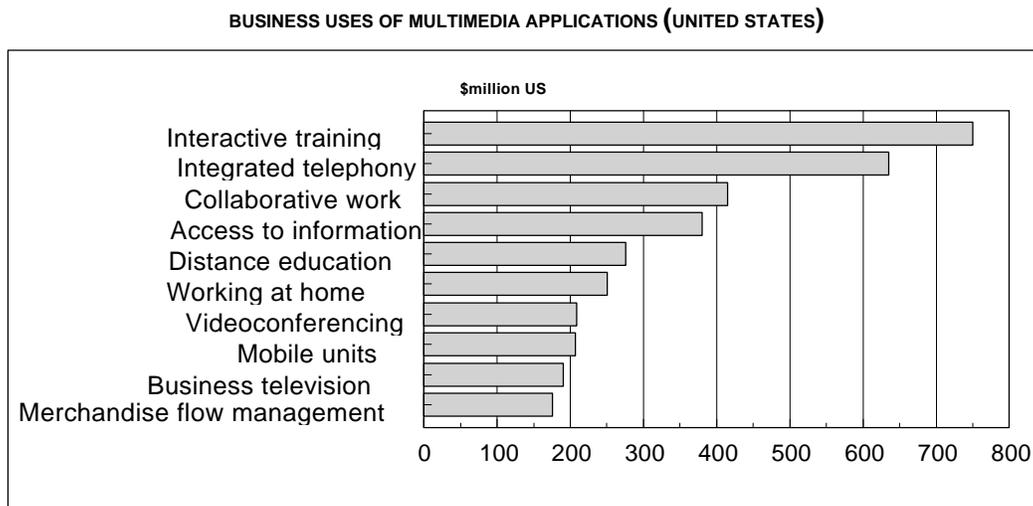
- **Distance education**, that is, access via telecommunication technologies to educational services traditionally available only at institutions. This formula is attractive primarily to remote regions.
- **Computer-assisted education**, generally based on network technology, whereby students can study in modules, at their own rate, while quickly obtaining feedback on their performance.
- **The use of databanks**, either through direct access or on CD-ROM. This information can be in the form of text, software, images and video.

Although the level of computerization in Canadian schools is still relatively low, the policies of the various levels of government on access to the information highway and the use of new technologies in education programs should foster impressive growth in this sector in the next few years. A concrete example of such initiatives is the Canadian *SchoolNet* network.

### 2.3 THE CORPORATE SEGMENT

The corporate segment is the one in which the adoption and penetration of multimedia technologies and applications is furthest along. Indeed, there are very few Canadian firms or organizations of any size that do not have a computer equipped with multimedia capacities: a CD-ROM reader and/or modem (which does not, of course, mean that all the employees have them).

As regards the specific use that companies make of multimedia, the American statistics indicate that it is used for training, communication (telephony, video-conferencing, mobile units) and information. The following graph shows the main applications planned in the corporate sector, based on revenue forecasts in the United States.



Source: *Market Vision, 1995*

As for the use of networks, the results of a survey conducted among small and medium-sized businesses (SME) in Quebec in 1997 shows that 38% currently use Internet, while only 17% did so in 1995. The use of electronic mail is also on the rise, from 12% in 1995 to 23% in 1997, as is the use of commercial networks such as *America Online* and *Compuserve*

(from 10% to 15%). Moreover, 8% of companies also have access to an Intranet, a proportion that although relatively low shows rapid growth.

USE OF ON-LINE MULTIMEDIA BY SME (QUEBEC)

INDUSTRY	PROPORTION OF USE
Research	57%
Data transfer	21%
Document transfer	18%
External communications	16%
Electronic commerce	14%
Leisure /entertainment / stock exchange	6%
Advertising	5%
Seeking clients	4%
Other	16%

Source: National Bank, Everest Group, La Presse, 1997

## 2.4 TRENDS/FORECASTS

Since we do not have reliable forecasts on the development of the Canadian multimedia market, we will have to use the forecasts on the American market as a point of departure.

As the main indicator of growth, the household penetration of computers, modems, CD-ROM drives and on-line services makes it possible to estimate the expected growth of consumer multimedia applications. It is estimated that, in 1999, 49% of households will have a computer, 44% will have a modem, 46% will have on-line services and 47% will have CD-ROM readers. In other words, within a few years, half the American population will have a computer in the home and almost all of these will have multimedia capacity.

## PENETRATION OF MULTIMEDIA TECHNOLOGIES - UNITED STATES

YEAR	HOUSEHOLDS WITH COMPUTER	HOUSEHOLDS WITH MODEM	HOUSEHOLDS WITH ON- LINE ACCESS	HOUSEHOLDS WITH CD-ROM DRIVE
1990	23.5%	3.4%	1.7%	0.1%
1991	24.8%	4.3%	2.1%	0.2%
1992	27.7%	5.8%	2.7%	0.4%
1993	29.6%	7.6%	3.5%	2.4%
1994	32.0%	9.7%	4.8%	6.9%
1995	36.0%	13.0%	10.5%	18.5%
1996	39.5%	18.2%	17.2%	30.4%
1997	42.0%	26.0%	25.1%	36.0%
1998	44.6%	33.7%	33.2%	41.6%
1999	47.1%	39.2%	39.9%	45.1%
2000	48.5%	44.1%	46.2%	47.5%

Source: Veronis, Suhler & Associates, 1996

Using the forecasts for the penetration of these various multimedia access and distribution technologies, and data on changes in the price of various multimedia applications, it is possible to establish the forecasts for consumption by the American market that appear in the following table.

## SALES OF MULTIMEDIA APPLICATIONS - UNITED STATES (US\$ MILLIONS)

YEAR	ON-LINE SERVICES	REFERENCE CD-ROM	EDUCATIONAL CD-ROM	ELECTRONIC GAMES
1990	542	--	45	150
1991	675	--	99	265
1992	829	--	146	342
1993	1019	75	278	400
1994	1382	156	566	455
1995	2791	200	572	649
1996	3900	240	665	816
1997	4478	280	816	1020
1998	4807	304	918	1254
1999	5057	342	990	1440
2000	5410	360	1024	1664

Source: Veronis, Suhler & Associates, 1996

OTHER FACTORS

Other technological factors that will have a significant impact on the growth of demand for multimedia applications are the imminent arrival of the new high-capacity optical disks (DVD) and decoders or devices to allow access to the Web via television, commonly known as Web TV.

- **DVD** (Digital Video Disk) are high-capacity optical disks that contain 10 times as much information as an ordinary CD-ROM. It is expected that DVDs will eventually replace CD-ROMs, audio CDs and videocassettes completely. CD-ROM publishers see enormous potential in these new optical disks, which offer better quality, greater speed and superior storage capacity.
- The imminent arrival of "**Web TV**" and other devices that provide Web access via television should democratize the Internet even further and facilitate its adoption by the general public. According to the Toronto consultants *Bratch Goehrum*, the introduction of this new equipment should increase the Internet penetration of Canadian households from 8% to 40% in the near future.

## 3. FINANCIAL ASPECTS

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### 3.1 OVERALL PROFITABILITY

The financial models for the multimedia industry are still being developed. Unlike well-established industries in which the gross and net margins, the “multiples” on which public firms are traded and the rates of return on investment are known quantities, the industry’s current “standards” are not representative of the long term, that is, the point at which the market reaches “maturity.” The proof of this is the discrepancy between the market value of companies active in this sector and their book value, which indicates that owners and stockholders anticipate significant medium-term returns, despite the almost total lack of profitability in this sector to date.

As there are at present few publicly traded multimedia production firms in Canada, it is difficult to determine the sector’s current profitability. In fact, very few Canadian multimedia firms are listed on the stock exchange, and among those that are (*Quebecor, Rogers, Videotron, Malofilm...*), multimedia activities’ share in the level of operating profits, assets, cash flow, etc., is marginal and not differentiated from the firm’s other operations in the financial statements. Among the only data available, the results of the *DJC Research* study revealed that only 44% of developers of specialized multimedia applications were profitable. According to this same study, it takes at least two years to become profitable in the multimedia sector.

Despite the absence of Canadian data on the industry’s profitability, we nevertheless know that in 1996, the consumer multimedia applications publishing industry was still unprofitable at the international level. In the United States, a recent American survey by the firm *SIMBA* on the profitability of multimedia publishers indicates that the industry’s net margin decreased on average by 1.5% in 1995. Among the firms surveyed, only 54% generated profits, which still represents a clear improvement over preceding years.

### 3.2 PROFITABILITY OF TITLES

When we talk about the profitability of multimedia applications, in 1997, we are generally referring to applications on CD-ROM or other optical disks. Although applications can also be transmitted on line and this method of distribution should grow considerably in the next few years, the extremely limited quantity of titles currently distributed in this fashion means we do not have data on their profitability.

Even the Canadian leader *Malofilm* does not yet have multimedia applications available through direct access (it is currently perfecting a version of the on-line game *Kryodrones*). The same is true for the vast majority of Canadian developers, for whom the market for distribution via Internet or private networks is still very embryonic because of the almost total lack of Canadian multimedia gateways for the general public and the current characteristics of the networks, which do not allow for real-time distribution of sophisticated multimedia applications.

As for Internet sites, the great variety of the current supply and the major differences in terms of type of content, degree of interactivity, quality, etc., do not allow us to generalize about their multimedia nature. Indeed, many of these sites cannot be defined as real multimedia applications. At present, the majority of the sites surveyed consist primarily of promotional and sales tools for products and services of all kinds (from books to airplane tickets to automobiles). This does not mean, however, that there are no multimedia Web sites. For example, the Web sites of some Canadian museums, libraries, archives and other cultural organizations often have more multimedia content than some CD-ROMs.

#### IMPORTANCE OF FIXED COSTS

In 1996, the owner of a CD-ROM drive purchased an average of one CD-ROM a year, a very low volume if we consider the fact that more than 2,700 new titles are put on the market each year.

In a market in which "best seller" titles generate an average of \$145,000 in revenues for the publisher, while the development costs are around \$300,000, it is easy to understand how difficult it is for the majority of companies to be profitable!

For example, recent data on the Quebec market indicated that the most successful Quebec titles sold only about 3,000 copies, well below break-even - the volume needed to recoup the fixed costs incurred - which is generally around 20,000 copies.

#### ECONOMIES OF SCALE

The multimedia industry combines the attributes of two sectors known for their high level of risk and their search for economies of scale and scope:

- **the culture and entertainment industry**, where traditionally the fixed costs represent almost 100% of the production costs (that is the case for feature films, for example, where all the costs must be incurred up front, with no idea of the volume that will be “consumed”). In cases such as this, it is very easy to understand why economies of scale are predominant and why small players find it difficult to survive without government or some other form of assistance;
- **the computer industry**, where learning costs represent very significant amounts, in light of the time and investment required to develop tools and master them. Setting up and running the production team (author, designer, producer, computer specialists, graphic artists, etc.) also require significant investments of time and money.

This economic reality makes access to a large market imperative in order to sell sufficient titles to amortize the fixed costs and generate profits so that the investments pay off.

The table below illustrates how variations in volume affect a multimedia title’s profitability. Because of the significant fixed costs, the developer must plan to sell large volumes to make the investment profitable. In the following example, the minimum number that must be sold in order to break even is around 25,000, a level that only very successful mass-market titles can hope to achieve.

EXPENSES AND REVENUES OF A GENERAL PUBLIC MULTIMEDIA TITLE

Units sold	10,000	20,000	30,000	40,000
<b>Revenues</b>	<b>300,000</b>	<b>600,000</b>	<b>900,000</b>	<b>1,200,000</b>
Development	300,000	300,000	300,000	300,000

### 3. FINANCIAL ASPECTS...

Marketing (incl. duplication and packaging)	300,000	318,000	330,000	345,000
Administration	30,000	60,000	90,000	120,000
<b>Total expenses</b>	<b>630,000</b>	<b>668,000</b>	<b>720,000</b>	<b>765,000</b>
<b>Profit</b>	<b>(330,000)</b>	<b>(68,000)</b>	<b>180,000</b>	<b>435,000</b>
<b>Net margin (%)</b>	<b>-110.0%</b>	<b>-11.3%</b>	<b>20.0%</b>	<b>36.3%</b>

Source: Industry Canada, Malofilm case study, 1997

THE PUBLISHER'S HIGH RISK

Typical CD-ROM distribution agreements differ totally from the traditional ones for audiovisual distribution, be it theatrical distribution, television distribution or videocassette rental. The main differences are the following:

- The publisher does not receive **minimum guarantees** for domestic distribution. Unlike the distribution of feature films or television series, where the distributor (the equivalent of the multimedia publisher) receives minimum guarantees in exchange for rights to particular territories or outlets, the multimedia publisher must sell the CD-ROM on a consignment agreement, which generally stipulates that all the unsold units are returned to the publisher.
- The formula for **paying royalties** differs from that for the distribution of feature films or television series, but is similar to that for videocassettes. The distributor (publisher) does not receive commissions on sales. He must instead pay the producer's share (around 25% of gross sales) and assume the marketing and promotional costs out of his gross revenues. What remains is his share.

The following illustration shows the differences in the publisher's/distributor's revenues depending on the exhibition window. The figures shown are averages.

DISTRIBUTION OF REVENUES FOR DIFFERENT MEDIA

	Theatre			Conventional television			Videocassette			CD-ROM		
Gross revenues	\$50	\$100	\$150	\$50	\$100	\$150	\$50	\$100	\$150	\$50	\$100	\$150
Distributor's commission	↓	↓	↓	\$12.5	\$25	\$37.5	↓	↓	↓	↓	↓	↓
Net revenues				\$37.5	\$75	\$112.5						
Distributor's expenses	↓	↓	↓	\$30	\$30	\$30	↓	↓	↓	↓	↓	↓
Producer's share	\$20	\$40	\$60	\$7.5	\$45	\$82.5	\$12.5	\$25	\$37.5	\$12.5	\$25	\$37.5
Distributor's revenues	\$30	\$60	\$90	↓	↓	↓	\$37.5	\$75	\$112.5	\$37.5	\$75	\$112.5
Distributor's expenses	\$30	\$30	\$30	↓	↓	↓	\$30	\$30	\$30	\$30	\$30	\$30
Distributor's net revenues	\$0	\$30	\$60	\$12.5	\$25	\$37.5	\$7.5	\$45	\$82.5	\$7.5	\$45	\$82.5

### 3.3 COST STRUCTURE

The budget and cost structure of a multimedia application vary enormously from one type of application to the next. The least expensive applications to produce include corporate presentations, training applications and reference titles. At the other end of the spectrum are games.

The average budgets for applications produced in Canada are:

- ⇒ **High-end games:** \$1 to 2 million
- ⇒ **Edutainment:** \$500,000
- ⇒ **Reference titles:** \$125,000

In the case of corporate titles, it is difficult to speak of an average budget, since the range of applications and the level of quality vary so much that budgets go from a few thousand to several hundred thousand dollars.

We should also mention that the breakdown of costs between different categories of expenses varies greatly with the type of application. For example, "game-type" applications (including edutainment) devote a much larger part of the budget to programming and postproduction - the whole series of testing and debugging operations, etc. - than reference titles do. Reference titles, on the other hand, spend a great deal more (proportionately) on

the design component because of the research required. The costs related to images, music, video, etc., are also higher for reference titles, because of the rights that must be acquired for the use of existing content.

DISTRIBUTION OF DIRECT PRODUCTION COSTS

Activity	Edutainment	Reference
<b>Development</b>		
Script/scenario	3%	10%
Design	12%	10%
<b>Sub-total</b>	<b>15%</b>	<b>20%</b>
<b>Production</b>		
Production team	10%	25%
Graphics, sound & video	15%	25%
Programming	35%	10%
Other	10%	10%
<b>Sub-total</b>	<b>70%</b>	<b>70%</b>
<b>Postproduction</b>	<b>15%</b>	<b>10%</b>
<b>Total</b>	<b>100%</b>	<b>100%</b>

Source: Industry Canada, Malofilm case study, 1997

The labour component represents a very large part of the **direct** production costs (i.e. excluding distribution costs, administrative expenses, amortization, etc.); the remainder consists primarily of content acquisition costs: negotiating licences, acquiring rights, etc. On average, labour constitutes 75% to 90% of direct production costs, depending on the type of application.

### 3.4 FUNDING

It is still difficult to find funding to develop multimedia applications in Canada. There are several reasons for this problem with funding for multimedia development activities, particularly in the consumer segment:

#### CONSIDERATIONS OF A STRUCTURAL NATURE

- There are **many small firms**. As we saw earlier, more than half the companies have fewer than 10 employees. This is not surprising since, as in the audiovisual field, a company is often built around one project.
- The multimedia industry has **few tangible assets** to offer as collateral to lenders. It is first and foremost an industry based on ideas and creativity, on human capital.
- The industry has a **relatively high inherent level of risk**. The products developed require research and development and experimentation, and the investments required for a specific project may not pay off.
- The financial performance of general-public titles generally follows a **skewed profile**; failures are frequent and costly, while successes are relatively rare but can generate considerable sums. The level of risk is thus very high.

#### CONSIDERATIONS OF A CIRCUMSTANTIAL NATURE

- The multimedia sector is **still not well known to most “traditional” financial institutions** and they are often reluctant to invest more than minimal sums without knowing the sector better.
- There are very few **project-funding mechanisms** in the consumer multimedia sector in Canada. Programs to assist multimedia projects are very recent and have limited budgets; in audiovisual production, by contrast, the federal and

provincial project support mechanisms fund an average of 50% of the costs of television productions and up to 75% of feature films.

- **Pre-sale mechanisms are not common.** Whereas, in feature film or television production, the funding structure is quickly completed by use of pre-sales, multimedia developers for the general-public segment must bear almost the entire budget and risk. The lack of large Canadian publishers ready to fund the development of CD-ROMs partly explains this problem.

#### AVAILABLE FUNDING

Developers of applications have access, for the most part, to **internal funds** to finance the production of applications. The money can come from various sources:

- The company's **own funds**. The vast majority of companies active in the general-public multimedia field must finance their production activities with their own funds. This creates a major **entry-level barrier** for newcomers who do not yet have the wherewithal to assume such burdens and such a level of risk.
- **Clients' advances**. As we have seen, most application developers specialize in the education or corporate segments, where market access is easier and productions are usually done "on order" or are (wholly or partly) prefunded by the client.
- **Publishers' advances**: As there are few Canadian publishers, and these are small, local developers have trouble finding this type of funding, which is however very common in the "traditional" audiovisual sector.
- **Coproduction**. Just as with feature-film or television production, the coproduction of multimedia titles with a foreign partner is one way of sharing the financing and the risk, and of gaining access to a wider market and distribution networks.

#### SOURCES OF FUNDING USED - CANADA

SOURCE OF FUNDING	RATE OF USE
Banks	71%
Personal funds	61%
Public funds	42%
Private investors	28%
Leasing	28%
Venture capital	12%
Trust companies	3%

Source: DJC Research, 1995

Some public and private funds are also available to fund activities related to the development and production of multimedia content. Among the main sources of funding for production are:

#### AT THE NATIONAL LEVEL

- **Telefilm's Pilot Program for Multimedia Production and Publishing Assistance.**  
 The main objective of this program with an annual budget of \$1 million is to support the development, production and marketing of Canadian multimedia products of high quality and originality intended for the general public. It funds 50% of expenses up to \$50,000 for development, \$150,000 for production or \$75,000 for marketing in the form of an interest-free unsecured loan (advances in the case of development assistance).
- **Cultural Industries Development Fund (CIDF).** Created in 1990, the CIDF is sponsored by the Department of Canadian Heritage and administered by the Business Development Bank of Canada (BDBC). The Fund offers support in the form of loans from the BDBC. Through the Fund, companies can obtain funding of between \$20,000 and \$250,000 for expansion projects, as working capital or to promote long-term company viability. Companies working in the book and periodical publishing, sound recording, film and video, and multimedia sectors are eligible for the CIDF. The multimedia component of the CIDF was created in 1992-93. Since then, the CIDF has granted loans totaling \$3.8 million to multimedia firms.

- **CANARIE** (Canadian Network for the Advancement of Research, Industry and Education), a non-profit organization, was created in 1993 with the support of Industry Canada. This industry-headed consortium tries to promote the development of essential elements of the communication infrastructure of a knowledge-based Canadian economy and society and thus encourage Canadian competitiveness in all sectors of the economy and contribute to job creation. The total investment in CANARIE's Phase II, focused primarily on the funding of multimedia applications, is estimated at more than \$400 million.
  
- The **Bell Broadcast and New Media Fund** recently set up by Bell Canada. The goal of this fund with a \$12-million budget is to stimulate the production of multimedia content for the information highway. The fund is open to producers and companies already preparing programming with a multimedia component for the broadcasting distribution sector.

AT THE PROVINCIAL LEVEL

- The **Programme d'aide à la production de titres multimédias** of the *Société de développement des entreprises culturelles* (SODEC). The goal of this program is to promote the production of **French-language** cultural multimedia content for the entertainment or education of the general public. The funds are awarded in the form of recoverable advances up to 25% of eligible expenses. The projects are evaluated using criteria that include the product's cultural interest, the integration of multimedia, the quality of the text, images and sounds, the project's contribution to the company's development, the prospects for profitability, the marketing strategy and the participants' experience.

We should mention that in the other Canadian provinces, multimedia support funds (equivalent to those of SODEC in Quebec) either do not exist or were abandoned as a result of budget cuts. The OFDC's **New Media Development Program**, although very popular with the industry, was recently abolished following budget cuts at the OFDC. A new tax credit has just been introduced in

Ontario for the production of animation, which could have an impact on multimedia productions consisting primarily of animated content.

British Columbia Film's **Multimedia Development Program** is currently "on hold" and it is not yet certain whether it will be renewed. As for the other provinces, there is at present no program specifically designed for multimedia production, although the Nova Scotia Film Development Corporation already has an agreement in principle to set up a program.

- Quebec's **Fonds d'investissement de la culture et des communications** has an initial capital of \$15 million from the *Fonds de Solidarité* of the *Fédération des travailleurs et travailleuses du Québec* (FTQ) (\$10M) and SODEC (\$5M). This program is open to companies that have been operating in Quebec in the culture and communications sector for at least a year and that demonstrate a potential for profitability within three years. The assistance is in the form of equity participation in the company, up to 49%, for amounts between \$50,000 and \$750,000.
- **The Fonds de l'autoroute de l'information** (FAI), created by the Government of Quebec in 1994, is intended to support and promote Quebec companies' and organizations' investments in information highway development projects in Quebec. With a \$50-million budget over three years, the goal of the fund is to modernize the network infrastructure in Quebec, sustain the partnership of experimental projects and promote the use of French on these information highways. As part of Phase II of the program, the FAI provided funding to 65 projects, for amounts between \$9,000 and \$490,000. The fund is currently receiving applications for Phase III of the program.
- **Technocap's** venture capital fund, in which the committed capital has now reached \$100 million and which comes primarily from the *Caisse de dépôt*, the retirement funds at Bombardier and de Havilland, the FTQ's *Fonds*, Innovatech, Hydro-Quebec and the National Bank. The Fund invests in technology firms that are starting up or expanding and has already contributed over \$15 million in

capital to ten companies active in multimedia, software, telecommunications and intranets.

- **Investissements InfoSoft**, a venture capital fund from the FTQ's *Fonds de solidarité* designed specifically for the multimedia sector. This new tool allows for investments of up to \$2 to \$3 million per project in the capital stock of multimedia developers and publishers in Quebec. The Fund began with an investment of \$10 million and has plans to add \$5 to \$10 million by the end of the year and two more corporate or institutional investors.

In addition to the funds specifically for multimedia and electronic services, a host of other sources of funding and investment exist for firms active in technological or cultural sectors. The main ones are listed in the following table.

## FUNDS AVAILABLE FOR THE MULTIMEDIA INDUSTRY

FUND	SECTORS	ELIGIBILITY	DETAILS
<b>Advanced Technology Innovation Fund</b>	High technology	Innovative projects in British Columbia	Up to 75% of the cost of projects Up to \$100,000
<b>BCE Capital</b>	Telecommunications, multimedia and software	Projects at the production stage North America	Min. of \$500,000 Average of \$2-3M
<b>Business Development Program (ACOA)</b>	Start-up, expansion, modernization, innovation, R&D, training, marketing, etc.	Projects with significant job-creation potential in the Atlantic provinces	Interest-free loans Up to 50% of costs for start-up, expansion, modernization, etc.
<b>DGC Entertainment Ventures</b>	Entertainment and communications	NA	NA
<b>Financing and Management Program</b>	Information technologies, telecommunications and biotechnology	Sales of less than \$10M, fewer than 100 employees R&D, product development, etc.	NA
<b>Financing Program (Royal Bank and FORDQ)</b>	Information technologies, telecommunications, etc.	Sales of less than \$10M, fewer than 100 employees Located in Quebec	\$50,000 - \$500,000 per company Capital repayment extension Professional advice
<b>Innovatech</b>	Information technologies, pharmaceuticals, biotechnology, telecommunications, etc.	Located in Montreal or Quebec City	Capital stock, loans, non-refundable contributions Up to 40% of costs
<b>Loan Program for Technology Firms</b>	Information technologies, advanced materials, sciences	Canadian-owned, located in Quebec Sales of less than \$10M, fewer than 100 employees	\$100,000 - \$500,000 per project Interest-free for 2 years
<b>LTR Private Equity Capital</b>	Software	NA	NA
<b>McLean Watson SOFTECH Fund</b>	Software, multimedia	NA	NA
<b>Novacap</b>	Multimedia, telecommunications, software	NA	NA
<b>Opportunities Fund. (Scotia Bank - SOCO)</b>	New media, information technologies, communications	Production in Saskatchewan for export	3 years without repayment of capital and interest
<b>Quasi-equity Program for Emerging High Tech SME</b>	Information technologies, multimedia	Canadian-owned Fewer than 200 employees, sales of less than \$12M	Projects of \$100-500,000. Payment by royalties Interest capitalized 1 year
<b>Royal Bank of Canada Corporation</b>	Media, entertainment	NA	\$250,000 to \$15M
<b>Société d'investissement Desjardins</b>	Communications, telecommunications, software, electronics, health	NA	\$50,000 to \$10M
<b>SME Techno Access (Caisse Desjardins)</b>	Information technologies, communications, telecommunications	SME starting up, except in Montreal and Quebec City fewer than 250 employees, sales of less than \$12M Export potential	\$25 - 500,000 per project up to 7 years Repayment on cash flow. 2-year holiday on capital repayment
<b>Sofinov (Caisse de dépôt et de placement du Québec)</b>	Software and electronics, biotechnology, industrial technologies	Start-up technology projects, R&D, expansion, merger and acquisition, etc.	Development capital in the form of shares and debentures
<b>Technology Investment Program (Bank of Montreal)</b>	Technologies	Companies with sales over \$20M	\$500,000 to \$5M Equity participation of 15% to 45% in the firm for 3 to 7 years
<b>Telsoft</b>	Software, multimedia and telecommunications	Innovative product with international potential Marketing phase	\$1 to \$3M
<b>VenGrowth Funds</b>	Information technologies, multimedia	Projects in Ontario	Minimum of \$750,000 Average of \$2-5M
<b>Ventures West Management</b>	Software, communications, health	NA	NA

## 4. GOVERNMENT INTERVENTION

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Public intervention in private companies is generally concerned with four main areas: regulation, production, infrastructure and funding.

The government uses its power to **regulate** in order to assist the development of certain fragile sectors of the economy. Regulation is therefore intended to impose on the market “desirable” behaviour that would not be produced by the simple interplay of supply and demand. The Canadian telecommunications industry, for example, developed within a regulatory framework defined by the CRTC and intended to promote the creation and dissemination of Canadian content.

In some cases, the government intervenes directly in the **production** of a good or service which it deems has been neglected by the private sector. This direct government investment is generally in production sectors that require substantial investments, where the financial return is low in relation to the risk but the economic and social benefits are considerable. The state often assumes responsibility for large-scale hydro-electric production, for example.

The government can also support a sector indirectly by providing it with the **infrastructure** required for its sustained development. This infrastructure can be physical (e.g. road network) or technological (e.g. information highway). The concept of infrastructure can also include investment in human capital and intellectual support (e.g. inter-university research network).

Finally, the government can take the place of suppliers of private capital in order to provide **funding** to certain sectors, companies or types of activities. This government intervention is generally justified when the private mechanisms for allocating financial resources are ineffective and these resources could contribute more to the collective good if allocated elsewhere. Government intervention thus makes it possible to correct imperfections in the market by redirecting part of these resources to the neglected sectors. This process of correction can be done directly, by government departments or other public organizations, or through an existing distribution system, such as the tax system or the private financial intermediation system.

Not everyone agrees that the government should intervene, particularly in the funding of companies. Although the market is imperfect, the question is whether the government is capable of correcting the situation effectively. The cost of intervention may be greater than the benefits it produces.

The debate between interventionists and non-interventionists is as old as economics, and it is unlikely to end in the foreseeable future. The inability of economics to establish the economic costs and benefits of an interventionist policy with any degree of precision largely explains the persistence of this debate.

In pragmatic terms, it no longer matters who is right and who is wrong. A responsible government's position is to promote economic development and job creation by intervening intelligently and effectively. For the government, it is a matter of putting in place, as effectively and inexpensively as possible, tools that are likely to assist sectors that generate wealth and employment but suffer from a lack of private-sector investment.

At the same time, the fiscal austerity most governments now find forced upon them requires them to reduce their expenses and extend their tax base to increase their revenues. When the tax system is revised, deductions and credits are usually simplified in order to minimize the distortion factors. Government intervention must adapt to this new reality. Effectiveness and transparency become more important than ever.

#### **4.1 JUSTIFICATIONS FOR GOVERNMENT INTERVENTION**

It is generally admitted that, even in the most highly developed economies, market failures deprive economically profitable projects of private capital. This lack of financial capital is known as the "financial gap." A vast literature on this subject contains a number of arguments to justify government intervention. The main arguments are described below.

##### **4.1.1 Imperfect competition**

In small markets, local industries often find it difficult to develop. The market's small size prevents these industries from attaining a competitive production structure. Exporting thus becomes one way of expanding the market and achieving a certain operational effectiveness.

Penetrating foreign markets, however, requires a quality product at a competitive price. That is where government intervention comes in, and many countries have export assistance tools. In Canada, the Opportunity Development Corporation (ODC) grants export credits and the Business Development Bank of Canada (BDBC) manages various loan programs for exporting companies.

#### **4.1.2 Asymmetry of information**

Asymmetry of information occurs when one of the parties to a contract has valuable information that the other party does not. This situation can occur in certain sectors, particularly in high technology, where the success of a project depends on the confidentiality of the information possessed by the promoter. Asymmetry of information between the promoter and the financial backer can hamper funding for the project and endanger its success.

The government's role thus becomes to provide part of the funding so that the project can proceed without the promoter divulging strategic information. The R&D tax credit, public venture capital funds and programs such as CANARIE are some of the tools used to that end.

#### **4.1.3 Uncertainty**

The traditional financial system, particularly the banking system, is averse to high levels of risk. When there is great uncertainty, this aversion translates into an overestimation of a project's real level of risk. This leads to a call for a premium on return or interest, which leads to an increase in the capital cost and thus possibly to the project's being abandoned. The

result is that risky but profitable projects are not undertaken because of a lack of funding. Once again, the government's role is to intervene to reduce the capital cost of such projects so that they can be undertaken.

Uncertainty is particularly high with new companies and in high-technology sectors. In Canada, a number of measures exist to assist these companies. The small business deduction (SBD) and the R&D tax credit are examples of measures provided through the tax system. The BDBC, for its part, has developed a whole range of direct funding mechanisms for small businesses. Loan guarantees, direct subsidies and recoverable advances are also widely used to help start small businesses.

#### **4.1.4 Externalities**

Externalities occur when a project involves costs or benefits whose value or return the market does not take into account. There is a positive externality when a good or service produces, directly or indirectly, an economic advantage to some agent without that agent's providing compensation to the producer. The good or service in question, under those circumstances, is a sort of common good.

For the producer, this means that the project's financial return is less than its overall economic return (that is, the sum of its financial and social return). Human or intellectual capital, technological capital, social capital, cultural capital and natural capital are the main components of a project's social return.

In general, the greater a project's social return in relation to its financial return, the more difficult it will be to obtain private funding. The suppliers of private capital assign no value to the social component of a project's economic return; they are interested only in the direct financial benefits. The result, from a macro-economic point of view, is a sub-optimal production of goods and services with a strong social and cultural component.

## 4.2 METHODS OF INTERVENTION

Although there are, as we have seen, a number of mechanisms by which governments can intervene to promote a sector of activity, this report will consider only **financial support**. It is understood, of course, that government support must be part of a broader, more strategic approach to the sector in question that uses other tools, such as regulations (quotas), infrastructure, etc., as needed.

Among the main financial instruments available to the government to intervene in a sector are subsidies, subsidized instruments and non-subsidized instruments.

### SUBSIDIES

In the broad sense, a subsidy is any assistance which the state provides to a corporation or individual. This assistance can be granted directly by a government department or other public organization or indirectly via the tax system. In the first case, it is a **direct subsidy**; in the second case, it is a **tax expenditure**.

The most common forms of tax expenditures are deductions, refundable or non-refundable tax credits, reduced tax rates and accelerated depreciation.

### SUBSIDIZED INSTRUMENTS

This category includes all government funding where the capital is in part recoverable by the government or where the interest is lower than would be charged by a private institution. The recoverable advance, the loan at reduced rates and the labour-sponsored fund are the most common instruments in this category.

### NON-SUBSIDIZED INSTRUMENTS

The state can help fund companies through traditional methods such as debt, quasi-debt and equity without subsidizing part of that funding. It does this where it deems the private

financial intermediaries incapable of fairly estimating the financial risk of financially profitable projects in cases where there is uncertainty or a great asymmetry of information.

The government can make loans to companies directly or indirectly. It lends to a company indirectly by attaching a sovereign guarantee to the debt the company contracted with a private financial institution. The government can invest directly in the form of capital by purchasing venture capital in companies through public investment funds.

TYPOLOGY OF METHODS OF GOVERNMENT INTERVENTION IN FUNDING COMPANIES

SUBSIDIES	SUBSIDIZED INSTRUMENTS	NON-SUBSIDIZED INSTRUMENTS
<ul style="list-style-type: none"> <li>• Direct subsidy</li> <li>• Refundable tax credit</li> <li>• Non-refundable tax credit</li> <li>• Deduction</li> <li>• Accelerated depreciation</li> </ul>	<ul style="list-style-type: none"> <li>• Advance</li> <li>• Loan at reduced rate</li> <li>• Labour-sponsored fund</li> </ul>	<ul style="list-style-type: none"> <li>• Debt: loan</li> <li>• Quasi-debt: equity loan</li> <li>• Capital: public venture capital fund</li> <li>• Loan guarantee</li> </ul>

### 4.3 OTHER CLASSIFICATION CRITERIA

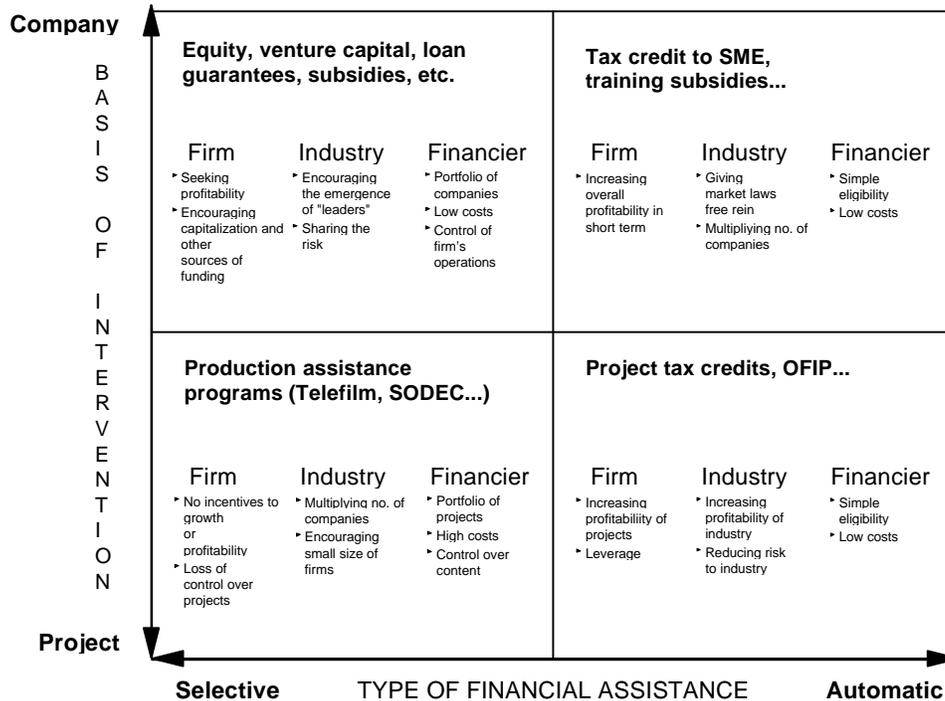
In addition to the types of assistance defined above, there are two other ways of classifying government financial intervention.

- ⇒ The assistance can be given to a **project** or a **company**
- ⇒ The assistance can be **automatic** or **selective**

Traditionally, financial institutions give funding to a legal entity - often a corporation - which can then use the funds for any of its activities without accounting for the precise use it makes of them. Occasionally, specific funding is provided for a major project. In some industries, however, the company's very operation is based on a series of very definite projects, with a beginning and an end, to which a specific budget can be attributed. That is the case with the majority of the cultural industries: audiovisual, publishing, sound recording and multimedia. Financial support in these sectors, and public support in particular, is thus often given on a

project basis, which involves not only a profitability objective for the firm, but also some control of the output.

At the same time, financial support can be automatic or selective, that is, using a neutral and objective assessment process or an in-depth qualitative study of each project submitted. Both types of assistance are very common in the cultural sectors, with the goal of the first being to maximize the number of profitable projects in a given sector and the goal of the second a supply of productions that meet set criteria for quality, originality, innovation, etc.



#### 4.4 CHOICE OF SUPPORT MECHANISM

There is no *modus operandi* for choosing a support mechanism. However, certain factors in the analysis are more decisive than others. It is essential to first identify the nature of the market imperfection and the purpose of the intervention in order to select the proper method.

**FIRST DECISION: THE CHOICE OF METHOD OF INTERVENTION**

This decision is closely linked to the justification for the government support .

**Is it a case of asymmetry of information and/or uncertainty?** In that case, the choice is usually **instruments** (subsidized or not), which allow the government to serve as an intermediary between the private investors and the applicants, while allowing the market to determine the specific allocation of funds.

**Is it a case of imperfect competition and/or externalities?** The choice then would be to use subsidies to increase the industry's overall profitability. As a rule, **subsidy** is appropriate for types of companies or activities with little potential for financial return but some important social utility. Cultural industries are a good example of this.

**SECOND DECISION: PROJECT OR COMPANY ASSISTANCE**

As we have already explained, financial support to an industry can take the form of assistance to companies for all their activities or assistance to a project for a very specific type of activity. The choice between these two types of intervention depends exclusively on the objective of the support to this industry. The following questions must be answered:

- What phase is the industry in: emergence, growth, maturity, decline?
- Is the major economic concern in this sector profitability or availability of funds?
- In addition to the financial/economic concern, is there a creation/ production objective?
- Can the companies' activities be easily divided into projects?
- Is some control desired over the type of content given preference?

The answers to these questions should make it easier for the decision-makers to identify the needs of companies in the sector and to adapt the support to the realities of the industry.

For example, the cultural industries usually operate on the basis of large projects (feature film, television series, book, record ...), the sum of which often constitutes all of the firm's activities. It is therefore very easy to isolate a given project and give it specific funding.

Some of these cultural industries, however, are "mature," with a history of success and a good knowledge of their market (this is particularly true of the audiovisual industry in Canada). Companies in these sectors have more need of assistance directed to the company in order to provide continuity and stability rather than "piecemeal" funding. It is interesting to note that more and more public assistance to the audiovisual industry takes the form of assistance to companies rather than projects.

At the same time, an emerging industry may benefit more from assistance to projects, the main advantage being that it puts all the companies on an even footing, regardless of their size.

Finally, when the government has a "production" and diversity objective in addition to the economic objective, such as encouraging the creation of Canadian productions, assistance to projects can be very useful because it tends to multiply the number of initiatives from several sources instead of consolidating the industry.

#### **THIRD DECISION: SELECTIVE OR AUTOMATIC ASSISTANCE**

Another decision to be made in determining the appropriate type of support concerns the degree of "selection" in granting financial assistance, in other words, a choice between selective and automatic assistance.

Both types of funding are already very common in public support to the cultural sector, primarily in the audiovisual industry. For example, Telefilm's *Feature Film Fund*, which invests in various Canadian productions that the agency feels meet the desired cultural and quality criteria. On that basis, the selection process is entirely selective (beyond the minimum criteria that must be respected) and is based on a thorough review of the film's script and its distribution potential. At the same time, there is a federal tax credit for audiovisual production

that allows all productions that meet certain basis criteria - Canadian content, non-violent/sexist/discriminatory, etc. - to benefit from a refundable tax credit of 25% of eligible labour costs.

These two types of assistance coexist harmoniously because they achieve very different and complementary objectives. Selective assistance is intended to promote the creation and production of quality content that meets subjective criteria of artistic quality, cultural dissemination, innovation... while automatic assistance responds more to an economic imperative by increasing the profitability of productions *ex ante* and, simultaneously, achieves the objective of increasing the number of Canadian productions of all kinds, without passing judgment on their content.

In short, the various combinations of “types of assistance/basis for intervention” each meet specific needs and have certain advantages and disadvantages.

- **Selective project assistance** is particularly appropriate for achieving specific objectives in terms of the types of projects that one wants to promote (for example, for cultural, artistic, educational purposes...), because it can be used to target and choose, case by case, specific projects that one wants to encourage. However, the financier’s implication in the projects removes much of the company’s autonomy, and they must often acquiesce to demands of a qualitative nature. This type of assistance has the further disadvantage that it is costly, because it requires significant resources to assess projects.
- **Selective company assistance** has a structuring effect on the industry targeted by providing companies with stability and continuity, as well as good capitalization, and allowing them to plan for the long term. It also encourages the emergence of leaders through the consolidating effect it has on the industry. It is generally less costly than selective project assistance, since there are generally fewer beneficiaries. However, this type of funding provides no control over companies’ outputs.

- **Automatic project assistance** acts as a lever for companies by increasing the profitability of their projects in a given sector of activity and making it easier to obtain other sources of funding. It also leaves the company with full control over their contents and has the advantage of being relatively simple to manage, in light of the “automatic” nature of the assistance. However, it does not allow for a qualitative assessment of projects.
- **Automatic company assistance** is rare because it involves systematic assistance to all companies that share a certain number of basic attributes (e.g. the tax credit for SME). This type of assistance allows an industry or sector of activity to increase its overall profitability.

#### FOURTH DECISION: THE METHOD OF DISTRIBUTION

The final decision concerns the method of distribution for channeling the financial assistance to the beneficiary. In the case of subsidies, a choice has to be made between direct subsidies and indirect subsidies, through the tax system.

The objective here is to achieve the best possible balance between costs and effectiveness. Effectiveness is determined by estimating the additional investment produced in the sector in question by the intervention. However, all the costs must be taken into account in the analysis, both those borne by the government (implementation, delivery, management, follow-up...) and those assumed by the company that wants to take advantage of government assistance (research and disclosure of information, application procedures, etc.)

There are two main decisive factors in the choice of the method for allocating assistance:

- ⇒ the **number of beneficiaries** in question;
- ⇒ the **complexity** of eligibility requirements.

In fact, one of the main advantages of using the tax system is that it makes it easy to reach, at little cost, a large number of taxpayers who meet clear and specific criteria that entitle them to a tax credit or deduction. The fewer people or organizations affected and the more

complex and subjective the eligibility criteria, the less suitable the tax system is for allocating funds.

Conversely, direct subsidy is particularly suitable when there is a small number of beneficiaries and the criteria for determining the eligibility of a company or project are complex and require an assessment or certification process.

Among the other factors to consider in the choice of method of distribution are:

- The **delay in allocating funding**. It generally takes longer in the case of a tax credit, since the company will receive its funding once a year after submitting its tax return.
- The **complexity of auditing eligible expenses**. In the case of support through the tax system, the eligibility of expenses necessarily requires the auditing of production and labour expenses **incurred**, which involves a significant amount of audit work, while in the case of a direct subsidy, it is possible to proceed on the basis of an estimate.
- The **presence of non-profit organizations** in the industry. The (refundable or non-refundable) tax credit is not suitable for these types of companies.

## CHARACTERISTICS OF DIRECT AND INDIRECT DISTRIBUTION

	DIRECT	INDIRECT
<b>Unitary delivery cost</b>	<ul style="list-style-type: none"> <li>• Constant based on number of applications</li> </ul>	<ul style="list-style-type: none"> <li>• Decreases with number of applications</li> </ul>
<b>Management cost</b>	<ul style="list-style-type: none"> <li>• Depends on follow-up and selection process</li> <li>• More flexible audit, can use estimate</li> </ul>	<ul style="list-style-type: none"> <li>• Follow-up cost inseparable from cost of tax system</li> <li>• Audit system imperative to validate the accuracy of expenses</li> </ul>
<b>Implementation cost</b>	<ul style="list-style-type: none"> <li>• Establishing procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Establishing procedures and amending tax system</li> </ul>
<b>Discretionary nature</b>	<ul style="list-style-type: none"> <li>• Great flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Limited</li> </ul>
<b>Delays</b>	<ul style="list-style-type: none"> <li>• Short delays</li> </ul>	<ul style="list-style-type: none"> <li>• Assistance is given once a year, average delay around 6 months</li> </ul>
<b>Effectiveness</b>	<ul style="list-style-type: none"> <li>• More easily measured</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to measure</li> <li>• Diluted impact</li> </ul>
<b>Cost of access for company</b>	<ul style="list-style-type: none"> <li>• Application sometimes complex</li> <li>• Confusing rules</li> <li>• Tighter control</li> </ul>	<ul style="list-style-type: none"> <li>• Rules generally clear</li> <li>• Simplified access</li> <li>• More limited request for information</li> </ul>

## 4.5 PARAMETERS

Once the support mechanism is chosen and a decision is made about the allocation and distribution method, a new series of questions must be asked in order to determine the characteristics of the financial assistance program. Indeed, the anticipated impact, complexity and cost of such a program depend on the way in which it is designed and structured.

More specifically, the following variables are decisive:

- The **company eligibility** criteria. There are often conditions concerning the **ownership** of companies, with support going only to those in a certain area (country, province, city, etc.). However, the definition of ownership can vary markedly from one program to the next.
- For example, Telefilm Canada provides multimedia production and publishing assistance to companies that are "*Canadian owned based on Investment Canada*

*criteria, that is, at least 50% of the shares, calculated on the basis of maximum dilution, must be held by Canadians. Moreover, the operations of the company must be effectively controlled by Canadians”.*

- The definition used by the Business Development Bank of Canada, on the other hand, requires that companies be “*incorporated as a private stock company, with 75% of the shares belonging to Canadian interests”.*

It should be noted, however, that there is an increasing tendency to expand the eligibility for public funding programs to companies **established** in a given area without any restriction on their ownership. That is the case in particular with the federal tax credit for R&D. The advantage of such a measure is that it attracts foreign companies, which are encouraged to operate in the area targeted by the support.

Other rules for eligibility can also be developed, to exclude certain sectors of activity. For example, television broadcasters are generally not eligible for tax credit programs for audiovisual production.

Finally, some restrictions are often applied on the “age” of the company. The majority of company assistance programs specify that the firm must have been in operation for a certain number of years (generally one or two).

- **Project eligibility.** All project assistance programs, even the automatic ones, have rules about the type of eligible projects. In many cases, there is a reference to the **nationality** of the content. That is the case in particular with the federal tax credit for audiovisual production, which is granted to Canadian productions, as defined by a very detailed rating system certified by CAVCO.

There are other kinds of exclusions based on the type of content. For example, Quebec’s multimedia tax credit does not accept productions for promotional or communication purposes; Ontario’s audiovisual tax credit excludes sports, music and variety productions, games, etc.

There are often selective support mechanisms for the “cultural” component of productions. In fact, unless the definition of a cultural production is very broad (i.e. all audiovisual production), it is very difficult to design flexible, subjective criteria in an automatic program. So, for example, the types of productions considered “cultural” vary even between two federal agencies -Telefilm and the NFB - and are subject to qualitative review.

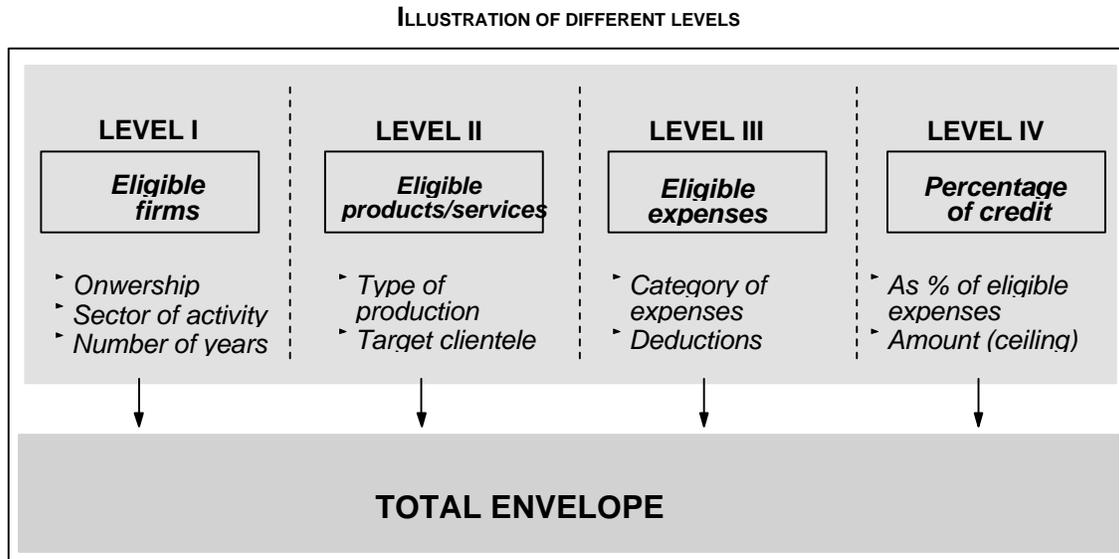
- The **eligibility of expenses**. Here again, there is wide latitude. A number of programs give credits as a percentage of eligible expenses. Generally, these are direct production expenses and labour expenses.

⇒ Under the terms of SODEC’s production assistance program *“all amounts incurred in the production stages of a multimedia title, from design to completion of a final version ready for marketing, are eligible.”*

We should also mention that depending on the distribution method chosen, eligible expenses can be based on a production estimate, as is the case with selective audiovisual assistance programs, or on the expenses incurred for a given production, as is the case with tax credits, which must be paid, in accordance with revenue law, on the basis of expenses already incurred. This difference greatly affects the complexity of the audit process.

- The **percentage of the deduction**. This variable obviously has a decisive effect on both the impact (the higher the percentage, the more production will be “stimulated”) and the cost of the program. We must not forget that, apart from the fact that public funds are limited, too high a percentage is not always desirable, since excessive tax support can cause too much distortion in the market and create a supply unrelated to demand.

Another common practice is to establish a ceiling on the total amount of assistance.



#### 4.6 QUEBEC'S MULTIMEDIA TAX CREDIT

At present, there is only one automatic assistance program for the multimedia industry in Canada, the refundable tax credit for the production of multimedia titles administered by SODEC. We feel it is important, as part of this study, to analyse this program in detail in order to identify its main objectives, characteristics and performance.

Moreover, the recent "reform" of this program could provide the federal government with valuable information on the state of the market and the industry and on the real needs of companies, specifically with respect to the flexibility and "openness" required in a multimedia support mechanism.

##### 4.6.1 Objectives

In order to provide assistance to an industry considered a priority for Quebec's economic and cultural development, the Department of Culture and Communications proposed, and the Department of Finance approved, a tax credit program for multimedia production.

The decision to support this industry was justified by the need to promote the development of a Quebec supply of multimedia content. The domination of the market by American titles and the limited size of the Quebec market led the government to support the production of local content in this way.

Although this is still very much the reality, the objectives and mechanisms of the tax credit were recently modified. The Government of Quebec's approach is now more structuring and more inclusive with regard to the types of companies and productions that are eligible. The primary objective of the intervention has changed from support for creation to **support to the industry**.

The choice of assistance allocation method, i.e. via the tax system, was based primarily on the success of the tax credit program for audiovisual production. The stakeholders in the sector supported the use of an automatic measure and the officials at SODEC felt that this mechanism was very effective and easy to manage, and of course the use of program funds was becoming increasingly difficult to justify in the context of budget restrictions.

#### 4.6.2 Eligibility

During the recent revision, the criteria for the eligibility of companies and projects were greatly **simplified**.

##### ELIGIBLE COMPANIES

Originally, only Quebec-controlled companies were eligible; now the tax credit has been expanded to include any non-tax-exempt company that operates within Quebec.

This modification means that the program is now geared toward the production of multimedia titles in Quebec rather than production by Quebecers. This measure can also be used to attract foreign companies to Quebec, as happened with the French firm *Ubisoft*, which will be able to benefit from this program by setting up in Quebec.

#### ELIGIBLE TITLES

For the purposes of the tax credit, a multimedia title means “*an organized set of digital information that meets the following requirements: it is published in an electronic medium; it contains an appreciable volume of three of the following four types of information: text, sound, still pictures, animated pictures; its structure and access to it are controlled by a software that enables interactivity*”.

Although this original definition remains unchanged, the categories of eligible titles (which were very numerous) have now been reduced to two.

- ⇒ **Category 1:** multimedia titles not produced on order, which are to be marketed and are available in a French-language version.
- ⇒ **Category 2:** other multimedia titles.

The following titles, however, are still ineligible: interpersonal communication services (videoconferencing, electronic bulletin boards, discussion groups ...), transactional services (teleshopping, virtual shopping centres, electronic lotteries, on-line payment systems ...), multimedia titles intended to present a for-profit company or to promote its activities, products or services, and titles that promote violence, sexism or discrimination.

Finally, the criteria on the use of Quebec resources (75%) and the restrictions on the possession of copyright were eliminated, thus putting the accent on work done in Quebec on the production of eligible multimedia titles.

#### ELIGIBLE EXPENSES

Eligible production expenses are all the expenses the firm has **incurred** to carry out the various stages of production, from conception to completion of a final version ready for marketing. These steps can include:

- ⇒ writing the title's screenplay;
- ⇒ developing its interactive structure;

- ⇒ acquiring and producing the constituent elements (sound, still and animated pictures, text, data...);
- ⇒ informatics development.

Production expenses can also include an amount for professional fees and administrative expenses related to production of the title up to 20% (formerly 15%) of the labour costs.

**Labour costs** include the wages and salaries directly applicable to the title and the compensation paid to eligible individuals or companies for services rendered in connection with the production of the multimedia title. In the case of labour costs incurred by a sub-contractor, 50% of the consideration paid under the contract that can reasonably be attributed to the production of a multimedia title is eligible.

Any government or non-government assistance (bonus, subsidy, forgivable loan, tax deduction, etc.) must be deducted from production and/or labour costs, with the exception of any amount received from the *Fonds de l'autoroute de l'information* or from SODEC or the *Conseil des arts et des lettres du Québec*.

#### 4.6.3 The funding granted

The tax assistance available was modified from its original version. Specifically, there was a performance bonus related to the title's operating revenues. Since administering such a bonus required a detailed examination of the title's revenues over a three-year period and greatly complicated the application of the tax measure, it was abolished. At the same time, the basic tax credit was modified, rising from 20% to **45% of eligible labour expenses**.

The French-language bonus (up to 20% of the labour costs) remained for titles that were not produced on order.

The ceiling on total assistance is now **35% of eligible production expenses** for a title not produced on order and 25% for other titles; it used to be 30% and 20% respectively.

## NEW PARAMETERS FOR QUEBEC TAX CREDIT

Level of tax assistance	Basic credit (based on labour costs)	French-language bonus (based on labour costs)	Overall tax assistance
Category 1	45%	20%	Up to 35% of eligible production expenses
Category 2	45%	NA	Up to 25% of eligible production expenses

#### 4.6.4 Operation/Budget

Administering the program now requires a full-time person to analyse the applications, certify productions, calculate eligible expenses, follow up, etc., as well as a part-time resource from the audiovisual sector. It is difficult to predict how the resources will change at this stage of the program.

The estimated tax cost of this measure is now **\$15 million a year**, based on the new terms and conditions, while previously it was provisionally estimated at \$3 million. This increase in the envelope is a result both of the anticipated increase in the number of companies that will apply for the credit (more firms eligible under the new criteria) and thus in the number of projects presented, and of the increase in the basic credit.

The program managers have also intensified their efforts to promote the program and increase its visibility, in particular by sending the new program conditions to the 666 or so companies surveyed in Quebec during the recent *Bureau de la statistique du Québec* survey of multimedia and electronic services companies.

#### 4.6.5 Profile of applicants

The 73 companies that have to date submitted applications for the tax credit include companies of every size, from microbusinesses to multinationals.

As for the provenance of the applications, 81% (59) come from Montreal, 15% (11) from Quebec City and 4% (3) from the regions.

The companies' main sectors of activity break down as follows:

⇒ Production of multimedia content	21
⇒ Production of audiovisual content	2
⇒ Production of stage shows	2
⇒ Publishing (books, periodicals, magazines)	2
⇒ Printing/typography	2
⇒ Cable companies	1
⇒ Educational institutions	1

#### 4.6.6 Performance

It is still too early to evaluate the program's performance, since of the 73 applications received to date, SODEC has made a final decision on only ten or so. Overall, however, 26 applications had, as of late June, received favourable results in advance rulings and 12 had been rejected.

The following table provides details on the processing and evaluation of the applications received as of June 18, 1997.

## BREAKDOWN OF APPLICATIONS RECEIVED FOR TAX CREDIT - QUEBEC

	Consumer		On order		Total
	French version	English version only	French version	English version only	
Advance ruling	23	3	10	3	39
Provisional certification	11	1	-	-	12
Final certification	2	1	5	2	10
Applications refused	5	-	5	2	12
<b>Total</b>	<b>41</b>	<b>5</b>	<b>20</b>	<b>7</b>	<b>73</b>

Source: SODEC

Although the data are only partial and preliminary, it is possible to make some observations about the initial impact of the Quebec tax credit for multimedia production. In particular, preliminary conclusions can be drawn on the factors that led to the revision to certain aspects of the program.

- ↪ The program must be as **flexible** as possible so as to be able to adjust to the changing realities of the market while taking account of companies' real needs.
- ↪ The program must be very "**inclusive**" in its eligibility criteria. For example, given that the majority of multimedia firms are currently "surviving" because of the on-order production market, it would not appear to be a good idea at this time to be too strict about these categories of titles.
- ↪ The amount granted initially must be big enough (in proportion to the total production costs) to constitute not just a "bonus," but a real **lever**, that will be **pivotal** to the production of a title.

## 5. CONCLUSIONS AND RECOMMENDATIONS

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### 5.1 JUSTIFICATION FOR GOVERNMENT INTERVENTION

We believe that the information available on the Canadian multimedia production industry and market justifies financial support for the industry and specific measures to assist Canadian production. This justification is explained in the following points:

- The multimedia industry is **very promising** for the Canadian economy. Data on the expected growth of the market and the extent of multimedia technology applications in all sectors of the economy clearly justify according it special attention.
- Using multimedia technologies in culture, education and health will lead to **positive benefits** for Canada that cannot be fully assessed by individuals and private institutions.
- The absence of geographical and economic barriers to on-line distribution increases the risk of **proliferation of foreign content** on the information highway. To prevent this, it is necessary to promote the development of good Canadian content to “travel” on this highway.
- The **Canadian market is too narrow** for multimedia application developers and publishers to cover the high fixed costs. They must therefore acquire the necessary resources to export their products, and this takes large investments.
- The industry is young and **not well known to the traditional financial sectors**. It is particularly difficult for new companies to obtain funding. The investment sometimes has more to do with support for R&D.
- The profile of revenue from production is highly skewed and characteristic of **high-risk** products, especially in the consumer segment, where producers must assume almost all the costs before they have any information on the level of demand.

### 5.2 AUTOMATIC SUBSIDY TO PROJECT

As we saw in the previous chapter, the first question in defining the method of support for an industry is to identify the principal imperfections in the market that justify government intervention.

Multimedia applications can be considered both as a new type of cultural product in itself and as a good platform for disseminating all kinds of “cultural content”: video, text, music, etc. They are also a high-technology product, with a large research and development component. This combination of culture and technology means that most of the justifications for government intervention apply.

The federal and provincial governments have already put some tools in place to remedy some of these deficiencies; the BDBC’s Cultural Industries Development Fund and the *Fonds de développement de la culture et des communications* in Quebec are two examples of subsidized instruments used by the government to solve problems of information asymmetry and uncertainty in priority sectors, including multimedia.

### 5.2.1 Subsidy funding

Nevertheless, two of the main conditions that characterize the multimedia market are scarcely affected by current federal support. These are imperfect competition and externalities.

- **Imperfect competition:** Most Canadian cultural products are in fierce competition with foreign products, especially from the United States, both at home and abroad. The vast size of the American market makes it possible to amortize the high fixed costs over a large number of units and thus considerably reduce the unit costs of multimedia productions on Canadian territory. These economies of scale obviously affect the profit margins. Faced with such competition, Canadian producers and publishers must be able, at least in the short term, to receive financial support so that they can achieve similar margins.

- **Externalities:** As a cultural product, multimedia applications also generate many positive benefits that are not always considered by private investors. Disseminating Canadian cultural content on new platforms that will become the communication tools of the future for distributing educational content, promoting tourism in Canada, etc. is a benefit. All these types of application make Canada known abroad and help to achieve social and cultural identity objectives that are not those of the private financier.

**Subsidies** are a good way to correct these two types of imperfection, since they enable multimedia application developers to compete equally with foreign developers by making the sector more profitable, and thus increase the number of Canadian multimedia products.

### 5.2.2 Project assistance

The Canadian multimedia industry requires both project and company assistance. Company assistance is necessary to ensure good capitalization of firms, sufficient working capital to finance development initiatives that are often spread over several months, and stability so that they can plan for several years.

The various government programs already named and the venture capital funds like *Infosoft*, *Communication Capital*, etc. share this objective. They invest in the equity of companies or provide long-term loans for the growth of promising multimedia companies. Such support also helps to consolidate the industry and leads to the emergence of major players.

However, since the multimedia industry is emerging, the profitability of applications is still low and Canadian content is scarcely represented among the multimedia titles on the market, it is just as, if not more, important to support **projects**.

First of all, multimedia companies, from the smallest to the largest, find it difficult to be profitable. The recent survey by *Sciencetech* shows that funding is the largest difficulty facing multimedia developers.

## PRINCIPAL DIFFICULTIES

	Number of respondents
Funding	81
Marketing/promotion	49
Recruiting specialized staff	43
Access to distribution systems	30
Training employees	25
Market information	21
Access to technology	15
Access to rights for contents	15
Others	10

Source: *Sciencetech 1997*

The recent financial problems of the major players in this sector, the abandonment of projects, and budget and staff cuts reflect the difficulties facing even the large integrated companies that have considerable capital. Before any shareholder, even the wealthiest, decides to invest in a project, he must first be assured of a decent return, which is now very rare for multimedia.

Project assistance also gives the smaller players in the industry access to available funds on the same basis as the larger ones. A project approach therefore has the advantage of assuring **fairness** in the allocation of funds and thus **diversity** of content, be it size of project, geographic origin, target market, etc. We think that these qualities are essential in funding multimedia applications.

### 5.2.3 Automatic assistance

As we said, the selective approach by project is very desirable and appropriate for funding cultural products, since it allows precise targeting of the type of project and content to be encouraged following a case-by-case evaluation and on the basis of merit according to criteria of quality, cultural and artistic character, etc. In this regard, multimedia is no exception and also needs this type of support.

Telefilm's experimental program to assist multimedia production and publishing is such an initiative since it favours the development and production of original, high-quality Canadian multimedia works for the general public. Although the funds for this program are now very limited, the trial period for the program will show how much will be needed to support such projects in the longer term.

Nevertheless, to achieve a broader and more all-encompassing objective such as the creation, distribution and financial viability of Canadian multimedia titles, an **automatic approach** that encourages the production of applications in general, regardless of subjective criteria of quality and culture, should be taken. That is why the Quebec government has chosen a tax credit to assist the multimedia industry, excluding only some types of application, mainly those with transactional or promotional content.

### 5.3 PROGRAM PARAMETERS

#### 5.3.1 Eligible companies

##### NATIONALITY/OWNERSHIP

Following the parameters for the various assistance programs in the audiovisual sector, support should be given only to **Canadian-owned** multimedia firms. Program officials should consider mainly the actual ownership and set specific eligibility criteria (e.g. proportion of capital held by Canadians, location of head office, etc.).

It is nevertheless important to consider the possibility of expanding the program to foreign companies with a place of business in Canada. Here again, it is up to the government to determine if the purpose of its intervention is to promote productions by Canadians rather than productions made in Canada. A more "open" approach like SODEC's would have the advantage of attracting foreign companies to Canada and bringing about investments in fields of activity that generate economic benefits and create jobs in Canada, whatever the producer's nationality.

#### LINK IN THE CHAIN

We believe that it is desirable for the support program to be open equally to multimedia **developers and publishers**, as is the case in Quebec. In the general-public segment, the respective roles of these two “links” in the chain are closely connected, especially when it comes to defining content, financial contributions and sharing risk. Depending on the case, the publisher may have to bear most of the development costs; if so, it would be logical for him to receive the financial assistance. In other cases, the developer has full responsibility for content and funding and therefore he is the one who should receive the support.

#### 5.3.2 Eligible titles

As we saw, defining the parameters of an industry support program is extremely important for the impact, cost, complexity and other aspects of the program. In particular, the definition of eligibility for companies and projects is crucial and decisive, especially for automatic assistance, since a project that meets the preset criteria cannot be refused without a valid reason.

#### ELIGIBLE PROJECTS

There are two main approaches to the type of multimedia production that should receive government support.

In general, for cultural products, support is usually justified by the benefits of distributing Canadian products at home and abroad; mostly, these are products for the general public. Educational products are sometimes eligible for the same support, since distributing them to educational institutions contributes to the welfare of society at large. Usually, productions made to order for companies are excluded, however, since this type of content is not intended for wide distribution and does not have a cultural objective. This is particularly true of corporate videos that are ineligible for funding from Telefilm or for the audiovisual production tax credit.

The Quebec tax credit is open to several types of application made to order for the business market, including vocational training, promotion or distribution of collections or exhibits from museums, libraries, film archives, provision of health or social services, etc.

In light of the above, the federal authorities should seriously consider this question, which basically depends on the ultimate goal pursued, whether creative and cultural or economic and industrial.

Whatever the approach selected, we believe that it is essential **to define “multimedia application” very clearly and precisely**, so as to exclude products and services that should not have access to funding (for example, some Internet sites consisting mainly of Web pages with no interactive content, downloadable software, etc.).

The type of eligible application must also be **independent of distribution method**, since various methods already exist (optical disk, telematic networks, interactive terminals, etc.). Others are sure to evolve very rapidly: DVD, new modes of wireless distribution, etc.

#### APPLICATIONS WITH MARKET ACCESS

Since all the links of the multimedia chain are closely connected, it is essential for the strength of the industry to ensure a balance all along this chain. It does little good, and may be harmful, to stimulate production without providing distribution and marketing mechanisms; this could lead to supply not corresponding to demand.

A recent report from the C.D. Howe Institute, entitled *A Matter of Choice*, states that a major problem in funding culture in Canada is the imbalance between support for the production of cultural goods (books, films, etc.) and the almost non-existent support for distribution. This imbalance deprives industry of real market mechanisms and too often producers have no real incentive to ensure that their books are actually read or their films actually seen.

We therefore believe that support measures must be directed at productions with a sales potential, i.e. productions for which there is a **distribution agreement** with a recognized Canadian publisher.

#### 5.4 TWO OPTIONS FOR DISTRIBUTION OF FUNDS

Subsidies can be distributed directly (i.e. direct subsidy) or indirectly, via the tax system. As we saw, each of these two distribution methods has many advantages and disadvantages and does not necessarily lend itself to the same type of situation.

The choice between the two methods must therefore be based on a detailed analysis of the specific characteristics of the multimedia industry in Canada and the needs of companies in the sector. Particular attention must be paid to the following:

- The **number of companies likely to be covered by the program**, since the unit cost of administering a tax credit is very dependent on the number of beneficiaries.
- The **complexity of determining eligibility for projects and expenses**. Since it is almost essential to set up an organization to certify productions (as is the case for the tax credit in Quebec), some of the usual advantages of a tax credit do not apply. However, if funding is to be based on the expenses incurred, the management and program certification team would be considerably smaller for a tax credit, since the Department of Revenue would verify the expenses, whereas a direct subsidy would require setting up a fairly large team of auditors.
- The tax credit is generally considered a **more stable instrument**, less affected by changes of government and of cultural or industrial policies than subsidies are.

- Subsidies can be **allocated more quickly**, when the application is accepted, while a tax credit is collected only at the end of the fiscal year.

If the federal government opts for the tax credit, it can draw heavily on the Quebec experience to specify the shape of the market and of the industry, to estimate the required resources and expected impact. It can also draw on the experience gained in federal tax credit programs, especially the one for film production. The recent report of the advisory committee on the information highway recommends extending the precedent set in creating the tax credit for Canadian film or video production to investments in books by Canadian authors, sound recordings with Canadian content and multimedia productions with Canadian content.

However, if direct subsidy is the approach selected for government assistance, the model of the OFIP program, used until recently in Ontario to finance audiovisual productions, appears very attractive.

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