SHAPING CANADA'S FUTURE

BY DESIGN

ARCHITECTURE

INDUSTRIAL DESIGN

COMMUNICATIONS DESIGN

INTERIOR DESIGN

LANDSCAPE ARCHITECTURE

DETAILED REPORT

PSR-014-11-96E

SHAPING CANADA'S FUTURE

BY DESIGN

Prepared for:

The Design Sector Steering Committee

Sponsored by:

Human Resources Development Canada

Prepared by:

Price Waterhouse

Design:

Charlton+Company Design Group

DETAILED REPORT

The National Design Alliance (NDA) is a cross-Canada consortium of design promotion organizations and national design professional associations for the industrial design, interior design, landscape architecture, graphic design and fashion design sub-sectors, in total representing 11 design sector organizations and approximately 5,000 individual members of the design disciplines who are members of their national professional associations. Membership in the design promotion organizations also includes business users of design services and suppliers to the design sector.

The term "design promotion organizations" denotes the primary activity of these multidisciplinary bodies; design professional associations are also active in promoting the services of their respective design disciplines.

A voluntary organization, the NDA's mission is:

- to strengthen Canada's design sector and its related infrastructure, including design organizations, their programs and linkages;
- to encourage the effective use of design by Canadian business and the public sector;
- to increase the Canadian design sector's visibility at home and in world markets and the reputation of Canadian-designed products and services;
- to raise awareness and understanding of the design sector and its contribution to economic, social and cultural development.

NDA member organizations include:

Association of Canadian Industrial Designers
Canadian Society of Landscape Architects
Design British Columbia
Design in Business Nova Scotia
Design Exchange
Designlink
(formerly the Design Division — Canadian Apparel Federation)
Society of Graphic Designers of Canada
Group for Design in Business
Institute of Design Montréal
Interior Designers of Canada
Liaison Design
Forum Design Montréal

The NDA's member organizations are active in the areas of design promotion and advocacy, trade development, the provision of services to the design sector and to business, applied design research, and professional development of the design disciplines.

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The Royal Architectural Institute of Canada (RAIC) is a voluntary national organization founded in 1907, whose 3,300 members are individual architects representing all regions of the country. The RAIC's mission is to advance the cause of Architecture and its practice in Canada as well as to provide the national framework for the development and sharing of architectural excellence.

The RAIC's unique role is to act as a national forum, bringing together leading work in the field of architecture and architectural practice for critique and debate, recognition of excellence, and documentation as a basis for shared learning by the broader architectural community. The Institute's programs express a commitment to the professional growth of RAIC members and to ensuring a vibrant place for architecture in Canadian society. Addressing issues of design, building technology, and practice, activities are developed in five areas: publications, symposia & exhibitions, research, awards and practice.

The RAIC partners with the provincial architectural associations and ten Schools of Architecture on the National Practice Program, established in 1995, whose principal objectives are (1) to create a unified, national voice for Canadian architects, and (2) to provide valuable, tangible programs of continuing education directed at architects and interns.

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PREFACE

A whole is more than the sum of its parts…

One of the less tangible but no less important outcomes of this national study is the synergy that has developed among the industrial designers, communications designers, interior designers, landscape architects and architects that worked together on the project, few of whom had met prior to its initiation.

This report is all about building bridges: among the disciplines; internationally; with other professions implicated in the design process; with educational institutions; with design managers in industry; with the ultimate end-users of design; with government and the general public. The words “team”, “alliance” and “partnership” echoed frequently in meetings held throughout the study process.

It is also about finding our own model to effect change. The emerging pattern of national design associations that work in collaboration with affiliated regional design groups, and of private sector-driven institutions that work in partnership with governments in the development of strategies for design promotion, reveal an evolving Canadian model for development of the design sector that is in many ways unique and worth cultivating.

Ultimately, this report is about action. The global performance of Canadian products, services, communications and environments can be strengthened by good design. Design expertise can be enhanced by a forward-looking human resources strategy for the sector.

New ways of conceptualizing solutions is the essence of design — the insights and the energy that came from this multidisciplinary design team created a collective spark that will ignite change, fueled in the months to come by strategic implementation of this report’s recommendations — a strategy for the future, BY DESIGN.

ACKNOWLEDGEMENTS

This report reflects the cumulative efforts of many people too numerous to thank individually. Without the generous support of Human Resources Development Canada and the unflagging energy and enthusiasm of department staff responsible for the project, the study would not have been undertaken and could not have been successfully completed.

A chorus of thanks are also due to the forty-some design professionals and educators who, in their role as members of the Design Sector Study Steering Committee, have contributed literally hundreds of hours over a period spanning more than two years in meetings, in researching material and in reviewing the many draft chapters and reports that have emerged in the process. Their efforts accrue to the sector as a whole.

Thanks are also owed to Price Waterhouse Management Consultants project team for a report that clearly sets out the challenges and opportunities ahead, an assignment made difficult by the virtual lack of existing sector data on which to base their research. Their task was facilitated by the hundreds of firms, organizations and individuals, within Canada and internationally, who provided generously of their time in contributing to the report through interviews, participation in discussion groups and workshops, and survey responses.

The result is the first comprehensive study of the design sector in Canada to be undertaken at a national level. We urge you to read the report, comment on it and, above all, act on it!

National Design Alliance

Design in Business Nova Scotia

Institute of Design Montréal

Association of Canadian Industrial Designers

Design Exchange

Interior Designers of Canada

Canadian Society of Landscape Architects

Designlink

Liaison Design

Design British Columbia

Society of Graphic Designers of Canada

Royal Architectural Institute of Canada

Group for Design in Business

Forum Design Montréal

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The key events that have shaped the design sector and its various disciplines are reviewed along with the supporting infrastructure and organizations and the roles of professional associations. This is followed by the presentation of strategies for promoting design in Canada and other countries, and a discussion of public support and government initiatives. The conclusions emphasize the need for a professional framework, and the need to review specific government policies. 37

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CHAPTER 3

CHALLENGES WITHIN THE BUSINESS ENVIRONMENT

Major economic, technological, and social changes within the business environment present challenges and opportunities for designers. These are summarized first according to design discipline, then by region. Included is a discussion of how designers are applying specific Canadian expertise in responding to changing demographics, emerging domestic and international market opportunities, environmental and other social issues. Conclusions stress that designers must have the tools to respond to prevailing conditions. 71

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Post-secondary programs and curricula are assessed, with observations by faculty, students, and professionals. A discussion of the need to ease the school-to-work transition is followed by a review of the role of professional associations and promotional organizations in continuing education. Conclusions focus on exposing students to other disciplines and other professions; on bringing together educational institutions and the design sector; and on coordinating professional development activities. 129

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VISION STATEMENT

THE FUTURE OF DESIGN IN CANADA

The recommendations contained in this report provide direction for renewed prosperity and growth in Canada's design sector. However, such a realignment will come neither automatically nor easily as a number of interdependent prerequisites must be met to achieve this end.

Internally, the design community must foster the growth of sector-specific skills to satisfy the needs of its evolving immediate clientele, as well as those of the ultimate users of its designs.

Externally, it must acquire the means to communicate the power of design to those outside the design community.

In keeping with these goals, the design sector's Vision Statement is situated ten years into the future, at a time when several initiatives have, it is hoped, become well-established, while others are yet in their developmental stages.

While a decade may seem long, a concerted effort — beginning today — is required of all those who value design and creativity in order to ensure that the stated objectives of this vision are met in the next ten years.

FAST-FORWARD TO THE YEAR 2006

Canada's designers played a major role in the process by building a strong and vibrant design sector, recognized both at home and abroad for its innovative and efficient expertise.

In the last decade, Canada's business community has succeeded in harnessing ideas and knowledge to effectively reach and open new markets for Canadian goods and services.

The result has been a surge in high-skilled jobs and a newfound level of business confidence. A broader appreciation and demand for design excellence throughout the country has provided the catalyst for this economic transformation: Canada has become a design-conscious society.

Canada's designers played a major role in the process by building a strong and vibrant design sector, recognized both at home and abroad for its innovative and efficient expertise.

Ultimately, the celebration of creativity and design excellence has become part of Canada's culture. Five key factors have been responsible for this change:

- **Strategic Positioning:**

  Designers understand the corporate culture in which their clients operate and comprehend the factors essential to attaining their goals. As a result, the role of design is an integral part of their clients' strategic decision-making process.

- **Educational Involvement:**

  In conjunction with the educational sector, designers have been instrumental in developing more responsive and relevant design education programs. Designers collaborate with faculty and business on applied design research projects. Designers have assisted school boards in the process of incorporating principles of design appreciation in their curricula. Hands-on demonstrations are made possible through resource-designers and designers-in-residence programs.

- **Promotional Exposure:**

  Designers play an active role in promoting design. This is accomplished primarily by writing articles for newspapers and magazines, as well as through their participation in community development and government lobbying activities.

- **Professional Dedication:**

  Designers support on-going professional development. As a result, more design firms are better managed; technology is strategically deployed in the development of design business; more designers are working in international markets.

- **Sectoral Commitment:**

  Designers are committed to creating and building stronger professional organizations. This esprit-de-corps has enabled associations to up-date and dispense member-oriented information, services and research results.

Working together, the many practitioners and educators in the design community of the year 2006 have built a successful design sector through their concerted actions in the following spheres of activity:

- *design utilization;*
- *design education and continuous learning; and*
- *policy and legislation.*

In each of these spheres, a number of basic tenets have oriented the evolution of the sector, providing the necessary guidelines for *developing and managing design firms* in the year 2006 and beyond.

DESIGN IN 2006: 14 BASIC TENETS

Design Utilization in 2006 — Tenets 1-4

1 Design is a key criterion in corporate purchasing and strategic decision-making.

The central role of design in transforming concepts and technologies into marketable products is well understood, not only by manufacturers but also by Canada's large service sector, including the retail and information-technology businesses of the year 2006.

In the past decade, this design-based, holistic approach to the creation, marketing, communication and retailing of products and brands has provided a significant competitive edge for Canadian firms.

2 Design excellence has played a key role in building domestic market share and new export markets for Canadian firms.

Recent Canadian-based research has clearly established the relatively low cost and high return on investment attributable to effective design. This evidence has convinced Canada's business sector of 2006 to continuously hone its competitive advantage through more astute innovation and design planning.

3 Canadian designers enjoy worldwide demand for their innovative solutions and their sensitivity to local cultures and environments.

The Canadian design sector of 2006 has actively endorsed and promoted a "Canadian design sensibility", defined as the ability to understand and respond sensitively to local cultural, environmental and economic needs around the globe. As a result of this inter-continental adaptability, Canadian designers play central roles in international consortia involved in the planning of new cities, environmental treatment facilities and multi-use buildings.

4 Financing for design and innovation activities is readily available.

Throughout the past decade, designers have convincingly demonstrated to the financial community the increased returns which can accrue from innovation-based investment strategies. As a result, financial and venture capital institutions have developed new instruments for capitalizing knowledge-based growth, facilitating the market introduction of innovative products and services by entrepreneurial businesses and designers.

Design Education in 2006 — Tenets 5-11

5 Design schools have significantly modified their curricula to reflect new demands for business management and collaborative teaching input.

While traditional design studio work still holds a preponderate role in design school curricula, there has been an increasing focus on cross-disciplinary teaching, multidisciplinary team work, and the acquisition of project and business management skills. The design schools of 2006 work closely with the faculties of engineering, commerce and administration, as well as other academic departments to create co-operative opportunities for students.

6 Business schools include design management courses in their undergraduate commerce and administration curricula.

A substantial number of management schools have integrated courses in strategic design planning and the management of innovation and design processes into their core curricula, including collaborative ventures with design and engineering departments. Additionally, executive-level courses in the strategic use of design have proven to be highly-marketable to the business community as well as to practising designers, and have become central to the executive education curricula of many universities in the year 2006.

7 Graduate courses in design and Canadian-based applied design research are well-established at a number of Canadian universities.

The expanded role of design in major organizations and in key managerial functions has spawned new graduate and post-graduate design research programs in 2006. Universities and other institutes now provide new program options which contribute to the advancement of the design sector knowledge base.

8 Effective bridges have been built between the educators and practitioners of design disciplines.

More frequent and meaningful consultation between educators and practitioners has fostered co-operative programs, internships and a sounder understanding of one another's needs, culminating in more relevant curricula, integrated training methods and field experience in design firms for students.

9 The professional design associations are the active hubs of timely activities geared to the evolving needs of their membership.

The increased prosperity and interest of their members has enabled professional design associations to develop effective professional development and technological training programs, as well as to sponsor trade and research projects promoting the value-added benefits of design in their respective sectors.

Additionally, by 2006 these design associations have become effective providers of information on the running of small businesses, enabling designers to maintain high standards of management practice.

As a result, a greater proportion of design firms have successfully established their business credentials in the year 2006.

10 Design organizations have established effective networking and promotion programs.

The multidisciplinary design promotion organizations of the year 2006 have forged strong links with one another and with other relevant para-sectoral agencies, both nationally and internationally.

This inter-continental network has become vital for the dissemination of information on the many design promotion and education activities.

11 Courses on design and creative problem solving have been entrenched in the curricula of numerous primary and secondary schools.

Many school boards across the country have recognized the practical and multidisciplinary benefits of design-oriented learning. Working with universities, design organizations and other professional groups over the past decade, these school boards have now developed the educational research base and teaching aids required to effectively dispense introductory design-based course material nationwide.

With strong links forged among Canada's business and design groups, governments now include design organizations on a regular basis as collaborators in their program and policy development activities.

Policy and Legislation in 2006 — Tenets 12-14

12 Design is a fundamental component of research and development.

Design is now recognized as a cornerstone of business development and research. R&D tax credits, research grants and government policies, similar to the support available to science and engineering initiatives, provide breakthrough product development incentives for both designers and producers of goods and services across the country.

13 Government procurement programs lead by example.

Acknowledging the relatively low cost and high return of effective design, by 2006 various levels of government have implemented design and innovation-oriented procurement criteria.

As a result, Canadian suppliers strive to produce increasingly creative and exportable solutions, while giving public agencies the opportunity to purchase Canadian-made goods and services which demonstrate cost-effective, leading-edge, performance standards.

14 International trade promotion embodies innovative Canadian design.

Spearheaded by the initiatives of the sector's professional and multidisciplinary design associations, Canada's trade promotion activities now reflect the country's design capabilities and culture.

With strong links forged among Canada's business and design groups, governments now include design organizations on a regular basis as collaborators in their program and policy development activities.

Moreover, this collaborative synergy extends to a wide range of promotional initiatives which will continue to position Canada's knowledge-based goods and services in a variety of media and venues, both at home and abroad, throughout the second millennium.

In conclusion, by the year 2006…

The foregoing fourteen tenets will have served the development and management of design firms, contributing to the formation of an internationally successful Canadian design sector which has indeed become a "full partner" in the business management process and a valuable part of the country's cultural fabric.

CHAPTER 1

Design is a huge deal not because it
makes things beautiful or garners awards,
but because in our rapidly changing, customization-oriented,
service-added, software-added, intangibles-oriented
business environment, design is a critical focus
for knowing what a product is, what a customer is,
and what an organization is.

Tom Peters, "The Design Challenge"

CHAPTER 1

INTRODUCTION

Canada is rich with design talent: talent that has increased the wealth and competitive advantage of numerous corporations, created world-class innovations, and raised the quality of life of the general public. Yet relatively few Canadian organizations have used this resource. Indeed, this talent seems to be a well-kept secret. Designers lament the fact that many products come to market, buildings are constructed, and communications are produced with virtually no professional design input. The potential for the design sector to play a critical role in furthering Canada's economic success is tremendous.

The Canadian design sector is characterized by the diversity of its disciplines. Some of these disciplines have long, eminent histories in Canada, while others are just emerging. Some are struggling to hold their place in the economy, and others are seizing new opportunities. Ensuring that the design sector is poised to take advantage of opportunities before it and to create others will take a strategy that involves all disciplines working together. Human resources is a key in addressing the many challenges facing the sector.

Within this context, the National Design Alliance (NDA) asked Human Resources Development Canada (HRDC) to sponsor a human resource study of the design sector. This chapter describes the framework for the study and provides a profile of the design sector.

1.1

ABOUT THE STUDY

The study includes three sub-sectors of the design sector:

- **Design of the built environment** consists of the disciplines of architecture, landscape architecture, and interior design. It is concerned with the creation, construction, modification, adaptation, or re-creation of the physical environment for human use. In this sub-sector, designers address how humans interact through issues such as settlement, movement, communication, and protection. The design of the built environment is about the human relationship to space, whether enclosed space, such as a room or a building, or encompassing space, such as a community. The various disciplines within the built environment can be categorized by their application of artistic and scientific principles and by their specialized knowledge.
- **Industrial design** includes the design and development of commercial and industrial products. It draws on creative concepts to optimize the look, function, and value of products and systems and translates concepts into technical specifications for mass-production purposes. Industrial design is a management service usually provided through a joint-development approach involving managers, social and marketing researchers, engineers, and production specialists. Besides giving a physical shape to concepts, industrial designers contribute their knowledge of how human factors, such as the user's touch, visual acuity, and physical abilities, will influence the usefulness and safety of the final product.
- **Communications design**, frequently referred to as graphic design, encompasses graphic design, multimedia, and computer interface design. Communications design is a problem-solving activity that combines visual skills with knowledge of communications, technology, and business. This interdisciplinary field uses visual information to aid communication, both written and digital.

The study was based on the need to establish direction in developing a human resource strategy for the design sector. It assesses the trends and pressures affecting the sector and the skills and knowledge required of designers. As well, it explores the potential for the sector, examining the gap between the current state and the future to which it aspires. Also included is an examination of the educational and professional development available for designers, and of the extent to which those systems are able to facilitate change in the sector. Where possible, comparisons are made between the situations in Canada and in other countries.

The study provides a foundation for developing and sustaining a vibrant design sector in Canada. Its long-term goals are to encourage human resource planning and development, and to promote investment in Canada's current and future designers.

The specific objectives of the study, as listed in the Terms of Reference, are:

- to define the components and occupations of the sector and to examine interrelationships and cross-disciplinary activity;
- to profile the current labour force by examining such characteristics as workers' age, gender, education, and geographic distribution;
- to develop an understanding of the structure of the sector, including:
  - the nature and level of activity, noting regional variations,
  - the nature and source of demand for design services, including barriers and constraints to the use of design services, and
  - the current significance and potential for exports;
- to compare with other countries the skills, degree of computerization, and incorporation of design into business strategies, and to examine the implications for Canada's design sector;

- to assess the business environment in Canada in terms of financial, socioeconomic, technological, regulatory, and public policy issues;
- to examine the impact of these pressures, both directly on skill requirements and occupational structure and indirectly on sector structure and employment levels;
- to assess the importance for the design sector to develop a distinct Canadian identity through design;
- to develop an understanding of where the sector is heading;
- to create a desired vision for the sector, identifying possible barriers and defining actions required to achieve this vision;
- based on the desired vision for the industry, to examine the implications for human resources, including issues of:
  - the appropriateness of current entry-level training and education,
  - the transition from formal education to the labour market and the links between industry and education, including possible internships, apprenticeships, and international exchange programs,
  - the adequacy and availability of continuing education, including both formal and informal mechanisms for training and skills development, and
  - the roles and responsibilities of educational institutions, provincial and national professional associations, and the design sector with respect to human resource development; and
- to examine the links between the design sector and related production, distribution, and service industries and the potential for indirect employment growth.

The study looked at independent design consultants, those working in design firms, and those working in-house in design departments, primarily in the private sector. It included designers as well as owners and managers. The focus of the study is Canada; however, research was conducted to provide comparisons with other countries.

HRDC, in conjunction with the NDA and the Royal Architectural Institute of Canada (RAIC), invited various representatives to form working groups to direct the research of each of the three sub-sectors. A list of the members is provided in Appendix A. The approach taken to conduct the study is described in Appendix B. A list of the organizations that participated in the interviews, site visits, and regional workshops is provided in Appendix C, and the bibliography is contained in Appendix D.

This study marks the first time that the five disciplines have come together at a national level to research and develop a sector strategy.

While the design disciplines and their organizations have worked together on isolated projects in the past and had formed the NDA in 1992 to foster sector cooperation, this study marks the first time that the five disciplines have come together at a national level to research and develop a sector strategy. An important step in the process was the decision to produce one main report on the design sector rather than three separate reports, one for each sub-sector.

At the same time, the Working Groups were concerned that the distinct differences among the sub-sectors should not be lost in producing this report. The sub-sectors are driven by different demands, and therefore have been affected differently by the challenges described within the report. Regulatory regimes, technologies, development processes, and supportive educational systems vary among the sub-sectors. They each have different histories and are in different stages of evolution. As a result, each sub-sector is unique in structure and in the roles of its associations.

Thus, this report focuses both on the sector as a whole and on the three sub-sectors: design of the built environment, industrial design, and communications design. Comparisons between sub-sectors are made throughout the report. A more detailed statistical profile of each sub-sector is available through NDA member organizations and the RAIC.

1.2

THE DESIGN SECTOR: A PROFILE

Statistics Canada collects data on the workforce and employers in Canada. The National Occupational Classification (NOC) system, which complements the Standard Occupational Classification (SOC) system, codes people according to Statistics Canada's occupational definitions. The Standard Industrial Classification (SIC) codes organizations by industrial sector. While Statistics Canada has been collecting and analyzing such information for years, until recently it did not recognize the design sector as an economic sector. Thus, data are limited, with the one exception of architecture, as discussed in the material that follows. Contributing to this lack of attention is the fact that, compared with many other economic sectors, the design sector is relatively small and new.

This section examines the size and structure of the design sector, drawing heavily on Statistics Canada data, primarily from the 1991 census, as well as on information provided by professional associations. The Working Groups have well-founded concerns about the accuracy and completeness of the data for the design sector, for reasons outlined below:

- When people complete census forms, they describe their primary occupations in the week preceding the census. Also, some individuals may not qualify as professional designers under the definitions of the professional design associations, but identify themselves as designers.
- Statistics Canada staff then code people into occupations according to set definitions. Occupational definitions in the NOC, while better than those in the previous SOC, remain vague for the design disciplines. The data for communications design are the least reliable because the NOC code includes illustrative artists. The data are the most complete for architecture. However, architects note that the NOC definition is not current and contains inaccuracies.
- Only recently were most design occupations assigned their own occupation classifications. Under the SOC, industrial designers and interior designers shared a code; thus, researchers were unable to identify longitudinal trends for either discipline.
- Only architectural firms are classified in Statistics Canada's SIC codes; no information is collected at a firm level for any other discipline. However, recently Statistics Canada, Industry Canada, and the National Design Alliance, in cooperation with the governments of the United States and Mexico, began developing SIC codes and definitions for each discipline. Consequently, more data will be available on design firms, including size, revenues, and location.

A glossary of the terms related to Statistics Canada's classifications systems, including the structure for the new SIC codes, is contained in Appendix E.

Size of the Sector

Table 1-1: Designer Population Estimates

Association	Association Membership[2]	Census Reporting	Industry Estimates[3]
Industrial Designers	270	3,170[4]	400
Communications Designers	1,400[5]	26,255[6]	8,000
Architects	7,700	8,505	7,700
Landscape Architects	1,660	1,970	2,250
Interior Designers	2,250[7]	6,887[8]	3,375

Source: Statistics Canada, Census 1991

According to Statistics Canada census data, there were approximately 57,000 designers in Canada in 1991.[1] Communications design had the largest population of the design sub-sectors, accounting for about 50 percent of designers. Designers in the built environment made up approximately 44 percent, and industrial designers represented the remaining 6 percent.

As Table 1-1 shows, there are discrepancies between the number of designers identified by the census, the number of designers who are members of design associations, and the associations' estimates of the design population. The discrepancy between the Statistics Canada data and the association data is due to two major factors. One is that the way in which data are collected and classified by Statistics Canada causes inaccuracies, as discussed above. The other is that since membership in associations is not mandatory for some disciplines, not all practising designers belong to professional associations.

Design occupations make up a relatively small proportion of the Canadian workforce.

Table 1-2 puts the size of the design sector into context by comparing design to occupations in engineering, math, and natural sciences, and occupations in business services to management.[9] Designers make up a significantly smaller proportion of the Canadian workforce than do those in engineering, math, and natural sciences occupations, but a greater proportion than do those in business services to management occupations.

The difference between the size of the design sector and occupations in engineering, math, and natural sciences is important, since it affects the structure and development of a sector. In interviews and workshops, designers often compared design with engineering, commenting that the engineering profession, because of its size, is more recognized and utilized than the design profession is and has been effective in lobbying governments.

Table 1-2: Employment Occupations, 1991 (NOC)

Occupation	Total Employment
All Design Occupations	46,785[10]
Business Services to Management	22,015
Occupations in Engineering, Math, & Natural Sciences	331,930
All Occupations	13,005,500

Source: Statistics Canada, Census 1991

Design Firms

Although Statistics Canada does not collect data at a firm level on the design sector, except on architectural firms, interviews suggest that design consulting firms tend to be small, most employing fewer than five designers.[11] Design firms in Canada and in most other countries range from one-person freelance operations to larger, multidisciplinary firms. But Canada and other countries, for example, the United States, differ in the relative size of their design firms. In Canada, a firm with 20 or more people would be considered large. In comparison, firms with more than 150 people are common in the United States, where the smaller firms are usually specialized, and the larger firms are more multidisciplinary.

As in Canada, interviewees from the United States, Australia, Denmark, and the United Kingdom expressed concern over the future of small design firms. They speculated that their survival could be impeded by the high capital costs necessary to stay in business in a technology-intensive industry. Interviewees from Australia and France noted that many design consultancies in those countries are too small and too specialized to be effective. Overall, larger multidisciplinary design firms were thought to have greater potential to compete in the emerging global economy.

Demographics

Firms in the design sector tend to cluster geographically around the industries that drive demand.

The majority of designers work in Ontario, as shown in Figure 1-1. Each cluster in the figure represents the regional distribution for the selected occupational groups. All three occupational groups are concentrated in central Canada. Compared with the distribution of all occupations and occupations in engineering, math, and natural sciences, designers are more concentrated in Ontario and Quebec, and less so in the Atlantic and Prairie regions. This difference may be due, in part, to the wider dispersion of engineers than designers across industries.

Although it is becoming easier to work at long distances from clients, most designers begin with projects close to home. Thus, the nature, size, and economic health of business in a region has a great impact on the distribution of designers in Canada. For example, industrial designers tend to serve the manufacturing industry, which is most concentrated in central Canada.

Similar patterns exist in other countries. In the United States, for example, a design firm in a large city tends to have the majority of its clients in that city. If a U.S. firm is on either coast, then it may also be international in scope. Larger U.S. design firms tend to be more international as well. If a U.S. design firm is in a smaller city, its client base is likely both regional and national. In Australia, the pattern is more straightforward. Most designers work in the larger cities because that is where their clients are located. Even with the proximity to the Southeast Asian markets, few Australian designers work internationally.

Figure 1-2 provides a geographic breakdown of designers by discipline. Each cluster of the graph represents the regional breakdown for design occupations. As might be expected, distribution of the design disciplines tends to reflect the distribution of their primary markets. For example, industrial designers are concentrated in Ontario and Quebec, where the manufacturing base is located. The highest proportion of communications designers is in Ontario, likely

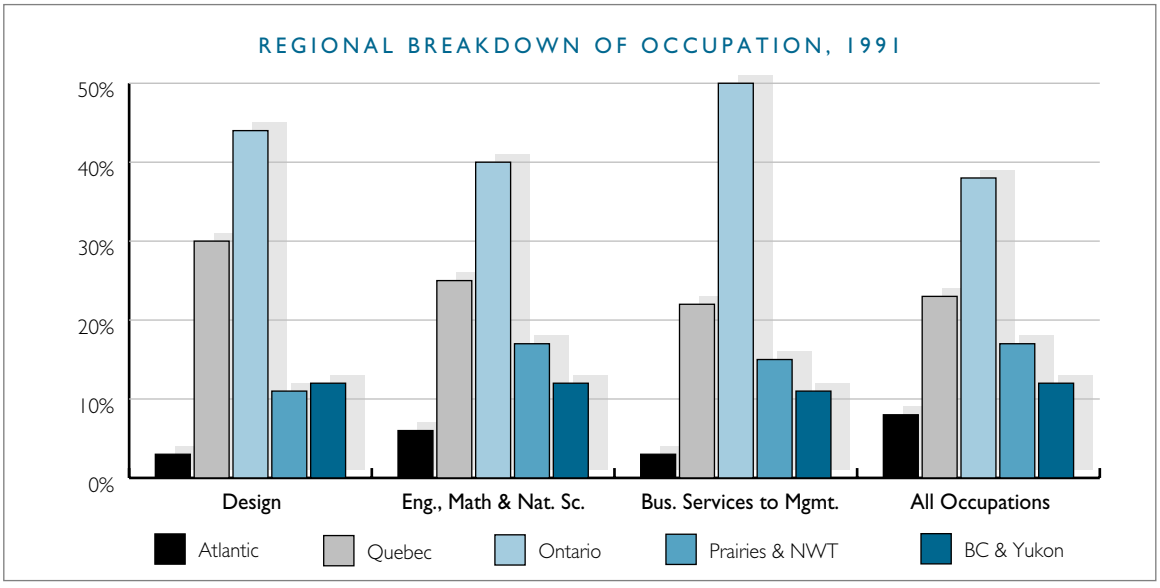


Figure 1-1 *Source: Statistics Canada, Census 1991*

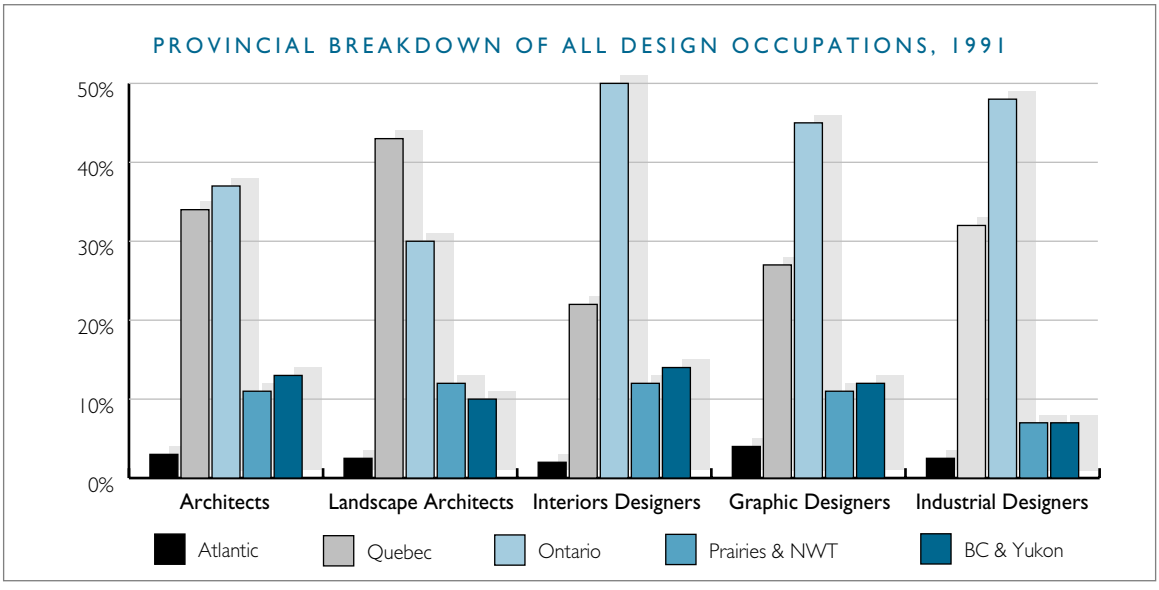


Figure 1-2 *Source: Statistics Canada, Census 1991*

owing to its concentration of corporate headquarters. The proportion of landscape architects in Quebec is less explainable. Working Group members suggested that landscape architects are significantly fewer than the data suggest. The discrepancy may be the result of inaccurate self-identification through the census.

The design professions are predominantly male, although there is an increasing female presence in the sector.

As Table 1-3 shows, more than 60 percent of designers are male. There are proportionately fewer women in design occupations than in all occupations of the Canadian workforce. However, there are relatively

Table 1-3: Gender Representation, 1991 (NOC)

Occupation	Breakdown by Gender (%) Female	Male
All Design Occupations	38	62
Business Services to Management	37	63
Occupations in Engineering, Math, & Natural Sciences	18	82
All Occupations	45	55

Source: Statistics Canada, Census 1991

more women in design than in engineering, math, and natural sciences occupations. Interior and communications designers are more likely to be female than are architects or industrial designers. Designers from British Columbia suggested that a considerable number of communications design firms are headed by females. In comparison, relatively few architectural firms include female partners. The industrial design sub-sector has the highest proportion of males. As a discipline, interior design has the largest proportion of women. Female participation is increasing in the traditionally male-dominated areas of design. For example, the number of female architects doubled between 1981 and 1991.

The limited number of women in design occupations is a phenomenon that is not unique to Canada.

- A British study (Bruce and Lewis, 1990) focused on the gender imbalance in design, especially in industrial design. Less than one percent of industrial designers in British industry are women, whereas as many as 20 percent are women in several Japanese companies. The study points out that this situation is disconcerting given that evidence suggests that women designers might well have a better grasp of user needs for many products.

Gender imbalance is a challenge for the design sector in Canada. It is critical that, in designing products and services, designers understand and design to the requirements of all potential users, both male and female. While gender imbalance in the sector does not make this aim impossible, some suggest that female designers better interpret the design needs of female consumers. As a faculty member at the Technical University of Nova Scotia noted, "About one-third to one-half of the students are women. This has had a major impact on what we do and how we think. There is more sensitivity to women's issues and more recognition of female clients and their needs."

Data on race were not available; however, sources indicate that the vast majority of designers are white. Those concerned with this fact note that a profession that aims to shape a superior environment for the whole population must have more than an arm's-length familiarity with society's needs. With the number of female and minority clients increasing, it is counterproductive to expect an "all white male staff" to be able to convince these clients that they are sensitive to their concerns (Dixon, 1994).

Designers are relatively young in comparison with the Canadian workforce.

As shown in Figure 1-3, there are more designers between the ages of 25 and 44 and fewer designers over the age of 54 when compared with workers in all occupations. About 65 percent of all designers are between the ages of 25 and 44, with the largest proportion between 25 and 34. This age pattern is similar to that in the engineering, math, and natural sciences occupations.

Since post-secondary education delays entry to design-related occupations, designers aged 15 to 24 are fewer compared with those in all occupations. While a large proportion of all designers are aged 25 to 34, the predominance of young designers is most apparent in landscape architecture, interior design, and communications design.

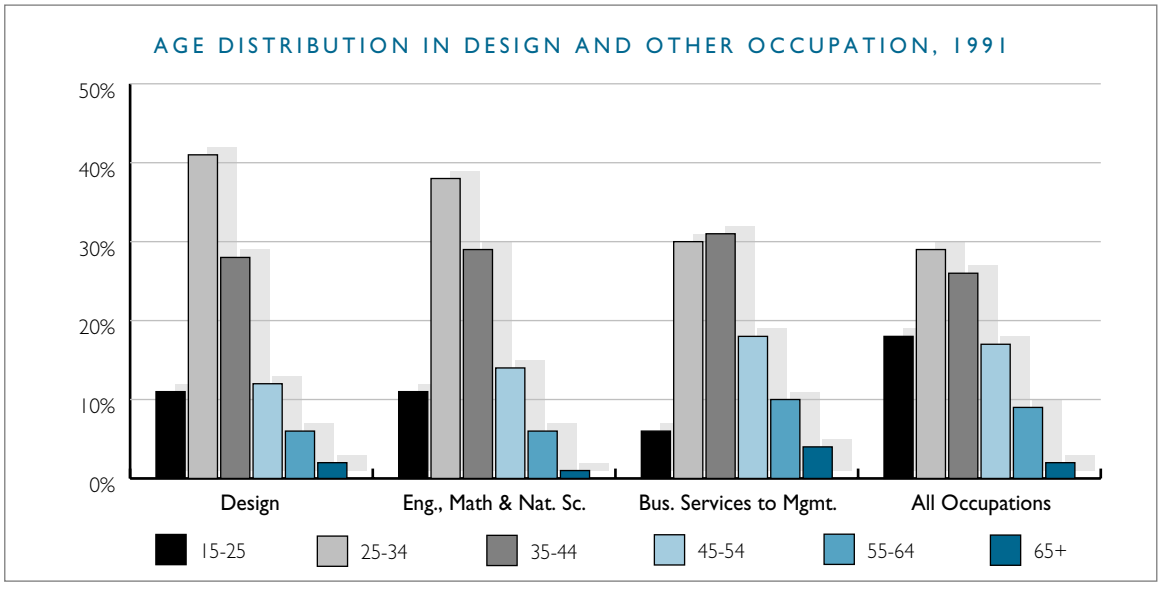


Figure 1-3

Source: Statistics Canada, Census 1991

This pattern can be partly attributed to growing enrolment in pertinent educational programs. However, in the case of communications design, where programs such as fine arts have been available for a longer period, the age patterns suggest many people do not spend their full careers as designers. Since many communications designers are employed in other industries, their careers often follow the career opportunities available in their firms.

The smaller proportion of designers over the age of 44 can be largely attributed to two factors:

- Older designers may move into other design-related occupations, such as management and education, and therefore classify themselves as something other than designers, such as managers or educators. Indeed, with the exception of architecture, less than half of those people who had studied design worked in design-related occupations in 1991. For example, only 20 percent of those who once studied interior design worked in that area in 1991. Evidence suggests that older people with a design background are much more likely to work in other fields than are younger people with a design background.
- The number of designers being trained in Canada has increased since the 1950s.

The age pattern raises the question of whether the economic prospects for the sector will satisfy the career aspirations of the large number of young designers. While the youth of the sector is a source of vibrancy, the absence of career opportunities may prove frustrating. The movement of young engineers into occupations related to engineering, such as contracting and procurement or contract management, may suggest a model for designers.

Designers are generally well educated.

Among designers, post-secondary education is more likely to have been acquired at community colleges or Cegeps than at universities. Architecture and landscape architecture are the main exceptions, for professional degrees are offered only at universities in these two disciplines. Technician and technology programs in architecture and landscape architecture are provided by community colleges. In contrast, most of the workforce in the business services to management in engineering, math, and natural sciences have at least one university degree.

In addition, the proportion of designers with graduate degrees is much lower compared with the business services to management and with engineering, math, and natural sciences occupations. Again, this difference likely reflects the fact that there are relatively fewer graduate programs for designers than for the comparison groups, as shown in Table 1-4.

People in the design occupations earn almost one-third less than their counterparts either in business services to management, or in engineering, math, and natural sciences occupations.

Table 1-5 shows that the disparity is highest in the business income only category, suggesting that design fees are not as high as those in engineering or in other business services firms. People with combined business and salary income tend to have higher total incomes in all occupations.

On average, architects' earnings are higher than those of other designers. Architects with a single source of income earn about $41,000, while those with two sources earn about $59,000. Graphic designers and illustrative artists have the lowest average income of any design discipline, at about $24,000.

Table 1-4: Educational Attainment by Occupation

Occupation	Educational Attainment (%)			
	Secondary or Less	Community College/Cegep	University	Graduate Program
All Design Occupations	24	40	31	5
Business Services to Management	26	25	29	20
Occupations in Engineering, Math, & Natural Sciences	14	30	39	17
All Occupations	55	28	14	3

Source: Statistics Canada, Census 1991

Table 1-5: Average Income For Occupations With a Diploma or Above, 1991 (NOC)

Occupation	Income Categories ($)			
	Wages/ Salaries Only	Business Income Only	Wages/Salary & Business Income	Total All Categories
All Design Occupations	33,492	23,885	42,553	32,674
Business Services to Management	41,318	37,014	49,819	46,386
Occupations in Engineering, Math, & Natural Sciences	40,798	38,452	48,268	43,052
All Occupations	30,897	28,320	45,387	31,190

Source: Statistics Canada, Census 1991

Organization of the Sector

Design services are provided either through consultants or in-house design departments. In Canada, most designers work in design firms. Similarly, design services are available by way of both in-house designers and outside consultancies in the Netherlands, Singapore, Sweden, and the United States. In comparison, design services are offered almost exclusively through design consultancies in Australia, Denmark, Finland, France, Norway, Spain, and Taiwan. Corporate design groups are more commonly found in Germany and Japan.

While the two models — design consultancies and in-house design groups — are almost universal, how they are used differs from country to country. For example, in the United States and the United Kingdom, companies with in-house designers will normally use them for routine duties and will use consultants for work requiring innovation. However, some companies use design consultants for routine work and their in-house designers for advanced design concepts, perhaps as a means of ensuring confidentiality. Overall, there was no uniform trend pertaining to the use of design consultants versus in-house designers. A preponderance of one or the other seemed to be linked to broad changes occurring throughout an industry, such as the downsizing of design departments, the outsourcing of design services, or the use of multidisciplinary teams in the design development process.

Design services are provided either through consultants or in-house design departments. In Canada, most designers work in design firms.

1.3

CONCLUSIONS

1 There is a lack of consistent, reliable data on the design sector, particularly in communications design.

Until recently, the design occupations were not delineated clearly in the occupational classification system. The NOC, which was implemented in time for the 1991 census, collects more relevant occupational data on the design disciplines. But because of discrepancies, longitudinal comparisons are not reliable. As well, the definitions of the disciplines in the NOC are not entirely useful in some cases. For example, the classification that includes communications designers is far too broad to be of any benefit to that discipline.

2 The capacity of design firms to absorb the increasing numbers of experienced designers is questionable.

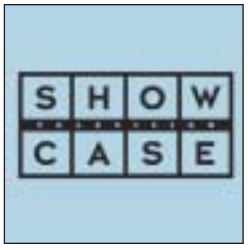
A larger proportion of designers are young compared with Canadian workers as a whole. As this population ages, traditional opportunities in design firms may shrink. Designers will need to create new opportunities, find new niches, or develop new occupations. This shift is made somewhat easier by technological advances.

3 Most design firms are homogeneous in terms of culture, and the majority of designers are male.

With the increasingly diverse client base, design firms will find it more difficult to convince their clients that their staff can identify with those clients' needs. Design firms will need to ensure that the gender and cultural mix of their firms adequately reflects their client base.

4 Small design firms may have difficulty surviving the pressures of the current business environment.

Some small firms may lack the capital to invest in the technology they will need to compete effectively. As a result, more mergers may take place and more multidisciplinary strategic alliances may be formed to give firms the financial leverage they need.



Footnotes

1 This figure includes 10,335 architectural and landscape architectural technicians and technologists.

2 Membership figures do not include student and honourary members.

3 Estimates were provided by the professional associations.

4 Census data are higher than industry estimates and association membership because they include people who consider themselves to be industrial designers but who are not considered as such by the association.

5 The figure includes 300 members of the *Société des designers graphiques du Québec*. The remainder are members of the Society of Graphic Designers of Canada.

6 The significant discrepancy between industry estimates and Statistics Canada data is because the Statistics Canada code includes illustrative artists and graphics arts technicians in its definition.

7 About 1,500 members are full professionals; the remainder are qualifying members.

8 Census data are higher than industry estimates and association membership because they include people who consider themselves to be interior designers but who are not considered as such by the association.

9 The engineering, mathematics, and natural sciences group is dominated by engineering occupations. It is similar to design in terms of occupational structure; that is, engineers may work in either in-house engineering departments or consulting engineering firms. It is similar to architecture in terms of its licensing requirements.

Business services to management primarily represents management consultants, whose occupational structure is also similar to that of design.

10 Architectural and landscape architectural technicians and technologists have been excluded from the analysis to facilitate comparisons to occupations in engineering, math, and natural sciences, which does not include engineering technicians and technologists.

11 A study of the design sector in British Columbia found that 79 percent of the firms that responded to the survey have five or fewer full-time employees (Ference Weicker & Company, 1995). In addition, a study on professional designers in Quebec revealed that the two-thirds of design firms employ five employees or less. This proportion was the highest (77.6%) in interior design and the lowest (46%) in architecture. (Groupe DBSF: *Enquête auprès des professionnels du design au Québec*, 1994)

CHAPTER 2

Advances in computer technology, electronic communications and multi-media design are rapidly changing how designers practice. There is a need to ensure that designers in different disciplines are able to communicate with one another and work cooperatively. At the same time, there must be opportunities to upgrade existing skills and participate in advanced studies.

Design for a Strong Ontario: A Strategy for Ontario's Design Sector
March 1995

CHAPTER 2

ABOUT THE DESIGN SECTOR

Designers have been contributing to the wealth of this nation for decades through finding innovative solutions for spaces, products, and communications. Yet relatively little is known about the sector. Contributing to this obscurity are the lack of research about the value of design that has been published by the sector itself; the lack of a cohesive and consistent strategy for the design sector, including one for obtaining government support; the relative newness of the design professions in Canada compared with other professions; and the lack of data collected by Statistics Canada.

This chapter discusses the infrastructure supporting the design sector. It provides a brief overview of the major events shaping the development of the various disciplines. It examines the strategies for promoting design in a number of countries, including Canada. Finally, it examines the organizations that support the disciplines and the sector as a whole.

2.1

DESIGN IN CANADA: A BRIEF HISTORY

Table 2-1 highlights a few of the more significant events that have taken place across the sector and at a sub-sectoral level.

Table 2-1: Fifty Years of Design

	Design	Architecture	Landscape Architecture	Interior Design	Communications Design	Industrial Design
1945-1954		Canadian architects return from WWII and establish practices across Canada, and embrace the "new architecture," mid 1940s Canada Mortgage and Housing Corporation (CMHC) founded, 1948 Royal Architectural Institute of Canada (RAIC)'s Massey Medal Awards program started, 1953	Canadian Society of Landscape Architects (CSLA) founding member of International Federation of Landscape Architects, 1948	Provincial associations, 1930s to 1950s First degree program, U of Manitoba		Affiliation of Canadian Industrial Designers, 1947; became Association of Canadian Industrial Designers (ACID), 1948 First professional training program established at Ontario College of Art, 1947
1955-1964	National Design Council, 1961 First multidisciplinary graduate design program, U of Waterloo, 1963 First multidisciplinary design conference, 1964	International competition held for the Toronto City Hall, 1960	National Capital Commission (NCC) begins implementing Todd and Greber plans First degree program, U of Guelph, 1964		Typographic Designers of Canada (TDC) founded, 1956 TDC's exhibition, 1958	First provincial (Ontario) association, 1958 Industrial Design Act passed, 1961

Table 2-1: Fifty Years of Design *cont'd.*

	Design	Architecture	Landscape Architecture	Interior Design	Communications Design	Industrial Design
1965-1974	Expo 67	Expo 67 — Canadian architects play major and varied roles, 1967	First provincial association (Ontario); B.C. adopts Landscape Architecture Act, 1968 First graduate degree, U of Manitoba, 1970	Interior Designer Educators Council (IDEC), 1968 Foundation of Interior Design Education Research (FIDER), 1971 Interior Designers of Canada (IDC), 1972 National Council for Interior Design Qualification (NCIDQ), 1974	TDC expanded to include all graphic design; became Society of Graphic Designers of Canada (GDC), 1968 Société des graphistes du Québec, 1972 GDC granted a national charter, 1974	International Council of Societies of Industrial Design (ICSID), 1967 First degree programs: U of Montreal, 1967; U of Alberta, 1968 InterDesign Conference in Ontario, 1973
1975-1984	Governor-General's Awards for design established Canada Awards for Business Excellence, 1984	Canadian Architectural Certification board established, 1977 RAIC becomes a voluntary body, 1980 RAIC Governor-General Awards supersede Massey Medals Program, 1982 RAIC mounts the Medici Series heralding the computerization of mainstream of architectural practice, 1983	CSLA Award Program, 1980 International Federation of Landscape Architecture (IFLA) meeting in Canada, 1981 Ontario adopts Landscape Architecture Act, 1984 Landscape Architecture Canada Foundation, 1984	IDEC Conference, U of Manitoba, 1978	International Design Education Conference, Edmonton, 1975 1970s — two International Council of Graphic Design Associations (ICOGRADA) presidents: Walter Jungkind, Jorge Frascara	First summit of Canadian industrial designers 1976. First graduate program, U of Calgary, 1979

Table 2-1: Fifty Years of Design *cont'd.*

	Design	Architecture	Landscape Architecture	Interior Design	Communications Design	Industrial Design
1985-1994	National Design Council closes, 1985 Expo 86 Design Exchange, 1987 Design British Columbia, 1988 Institute of Design Montréal, Group for Design in Business, 1989 Montebello Design Forum, Design in Business Nova Scotia, Alberta Design Works, 1990 Forum Design, Liaison Design, National Design Alliance (NDA), 1992 First annual Financial Post Design Effectiveness Awards, 1992	Architects are the first profession to support the FTA, 1987 The Canadian Centre for Architecture opens, 1989 RAIC Constuyamos Project receives a citation from the U.N. for contribution to "human habitation" in Colombia, 1990 Architectural/ Cultural Protocol signed with Mexico, 1993	CSLA Accreditation Council, 1986 Landscape Architecture registration examination (LARE), 1990	IDC Foundation, 1991 IDC hosts Canadian Interior Designers Education Conference, 1992 First graduate program, U of Manitoba, 1994	ICOGRADA Congress in Montreal, 1991 Graphic Design Professional Accreditation Committee, 1992 Graphic Design examination board (to provide certification; first in North America), 1992 Mutual agreement re: graphic design & designer exchange between GDC & Taiwan (CETRA), 1992 First graphic designer receives Order of Canada, 1994 (Paul Arthur for wayfinding systems)	First National Congress of Industrial Designers, 1993 First industry honourary member (Sonja Bata, 1993) Agreements of mutual assistance between the Design Promotion Centre of the China External Trade Development Council of Taiwan and l'Association des designers industriels du Québec & the Association of Chartered Industrial designers of Ontario
1995+	Launch of the human resources sector study on the design sector, 1997		American Society of Landscape Architecture (ASLA) meeting in Montreal, 2000		Ontario adopts Association of Registered Graphic Designers of Ontario Act, 1996 International type exposition and symposium in Toronto, 1996	ICSID 1997 to be hosted in Toronto

Design of the Built Environment

ARCHITECTURE

Architecture is the oldest of the design disciplines. Not surprisingly, most of Canada's early buildings derive their construction methods and styles from the countries of the first immigrants.

Early architects were educated through apprenticeships to practising architects, many of whom had been trained abroad. Even at the end of the nineteenth century, many of the large commissions were still being won by U.S.- or British-born architects. In order to improve Canadian competitiveness, the first full-time department of architecture was formed in 1896 at McGill University. Today, 10 Canadian universities offer undergraduate degrees in architecture. Apprenticeships are available through the Royal Architectural Institute of Canada (RAIC) Minimum Syllabus program.

Architecture began to formalize its institutional base with the founding of the Ontario Association of Architects in 1889 and the Province of Quebec Association of Architects in 1890. At the turn of the century, architects saw the need for close professional ties between the provincial groups of architects throughout Canada. As well, they realized that professional prestige could be established only by creating a national organization. As a result, the Architectural Institute of Canada, as the RAIC then was known, came into being in 1908.

To many, the maturation of the Canadian architect was exemplified with the world exposition held in Montreal in 1967. This event allowed Canadian architects and related professionals to use their many skills and talents in creating an organized, beautiful, and humanistic environment. The experiment of Expo 67 demonstrated what the modern city could be like.

With the energy crises of the 1970s, Canadian architects were given a new, twofold opportunity. As a result of Canada's comparatively extreme climate and of the work of the Division of Building Research at the National Research Council (NRC), Canadian architects had developed a good working knowledge of building physics and energy conservation. These skilled architects, working with capable Canadian developers, opened new markets in the now energy-conscious United States. At the same time, the "underdeveloped" oil-producing countries of the Middle East and Africa accumulated capital from the rising oil prices. This wealth could now be invested in domestic infrastructure and in buildings, producing the second opportunity for Canadian architects. This economic shift, together with a strong domestic market, encouraged the creation of several large Canadian architectural firms.

To many, the maturation of the Canadian architect was exemplified with the world exposition held in Montreal in 1967.

Under the provisions of the Constitution Act, 1867, the licensing and regulation of architects is carried out under provincial mandate. Recognizing the inherent limitations of provincial regulation, Canadian architects have generally maintained a national perspective towards educational standards, licensing, and reciprocity. This national view led to the creation of the Canadian Architectural Certification Board, in 1977, and of common standards for licensing. In the years following the support of the Free Trade Agreement by the RAIC in 1987, the 10 provincial licensing associations developed common standards and exams for licensing with the United States. The establishment of these common frameworks was a significant achievement.

LANDSCAPE ARCHITECTURE

Professional works of landscape architecture in Canada date from the late 1870s. Many of these works were large estates completed by immigrant Scottish and English landscape gardeners. In the second half of the nineteenth century, U.S. landscape designers and writers made important contributions to the development of the gardenesque style of landscape in both

The 1960s were a watershed for the profession in Canada. The number of landscape architects grew exponentially.

Upper and Lower Canada. Gardening and landscape design became increasingly popular with the general public during this period.

The Canadian public park movement was initiated in the nineteenth century. Cemeteries and parade grounds were the forerunners of city parks and public open spaces in Canada. The depression of the 1930s prompted the government to sponsor public-works projects, with an emphasis on improving public open spaces and transportation.

In the first half of the twentieth century, North American landscape architecture and town planning developed jointly as a physical design profession. In 1934, the Canadian Society of Landscape Architects and Town Planners was formed. Landscape architects were actively involved in community planning and have continued to work in land planning. Institutes of planning were formed in the United States and in Canada, and the Canadian Society of Landscape Architects dropped "Town Planners" from its title in 1961.

The 1960s were a watershed for the profession in Canada. The number of landscape architects grew exponentially. Schools and departments of landscape architecture were founded, many private offices were formed, and the scope of the profession was enlarged. The design of Expo 67 in Montreal provided a showpiece for landscape architects from across the country. As the environmental awareness of the late 1960s carried into the 1970s and beyond, landscape architects increasingly became involved in environmental assessments and in planning, furthering their association with resource development, transportation, and large-scale urban and recreational development.

Landscape architects became licensed more recently than architects. The first province to adopt a landscape architecture act was British Columbia, in 1968. Ontario created a provincial landscape architecture act in 1991, which has resulted in more than 70 percent of the members of the Canadian Society of Landscape Architects (CSLA) being registered in Canada. The CSLA recently embarked on an initiative to accredit landscape architecture programs, modelled after the program in the United States.

INTERIOR DESIGN

Interior design in Canada began, as it did in the United States, as a service offered primarily to residential clientele. This service, known as interior decoration, was usually provided by furnishings shops that had work rooms attached for making draperies and slip covers and for reupholstering furniture.

Quebec and Ontario formed design associations in the early 1930s. By the late 1950s, five provinces had established interior design associations for members who came primarily from this decoration background. Most of the associations had the word "decoration" in their name. In an effort to draw the provincial associations together, the associations met in the Kootenays in British Columbia in the 1960s and formed the Interior Designers of Canada (IDC) in 1972. Currently, it comprises the professional membership of the eight provincial associations.

In 1948, one degree program for interior design existed, which was housed in the faculty of architecture at the University of Manitoba. In 1969, Ryerson Polytechnic University (then known as Ryerson Polytechnical Institute) launched its degree as the maturation of its diploma program. Western Canada achieved its first degree program in 1993, which is offered by Kwantlen University College in British Columbia.

Southex's National Interior Design Show, which has now become the International Interior Design Exhibition (IIDEC), was highly supportive of the growing national interaction among interior designers. The show provided both a forum and funding, which allowed the provincial associations to establish the Interior Designers of Canada. *Canadian Interiors* magazine also promoted the discussion of interior design issues across the country.

The interior design profession has always been highly organized in North America. Working relationships with the United States have helped to define and to strengthen the profession in Canada. The Interior Design Educators Council (IDEC), created in 1968, provided a forum for design educators. In 1971, the Foundation for Interior Design Education and Research (FIDER) was established to accredit post-secondary interior design programs in North America. The National Council of Interior Design Qualification (NCIDQ) was formed in 1974 to provide certification for the profession, which was adopted in all provinces. The work of these three associations and of the provincial associations has led to all eight provincial associations achieving title acts. Canadian interior designers have contributed a great deal to these international organizations, and are well regarded in the international marketplace for both their training and their expertise.

Prior to World War II, most non-residential interiors were designed by architects. The increasing complexity of issues relating to interior design, such as human factors, technological change, and manufacturing processes, led to the emergence of interior design as a commercial discipline in the last 20 years. Interior design has evolved from a service of selecting colours, materials, and furniture to a sophisticated profession that improves quality of life, increases productivity, and protects the health, safety, and welfare of the public. The profession continues to diversify through dealing with current issues, such as building and fire codes, environmental safety of materials, and accessibility requirements for all. One critically important result of this growth has been the laying of the groundwork for multidisciplinary work. The profession has carved a well-defined niche in working with other disciplines in the built environment.

The interior design profession has always been highly organized in North America. Working relationships with the United States have helped to define and to strengthen the profession in Canada.

Communications Design

Communications design is a relatively young field, born from the growing awareness in postwar industrialized society that design involved more than illustration or typesetting. Communications design after 1945 also differentiated itself from the rapidly growing field of advertising. Designers began to use visual elements to inform, to persuade, and, sometimes, to sell, but always to communicate.

As commercial design emerged as a distinct profession, societies formed, such as the Art Directors Club of Toronto, founded in 1947, and the Art Directors Club of Vancouver. In 1956, the Society of Typographic Designers of Canada was founded in Toronto. By the mid 1950s, all of the major typography and printing firms had hired creative directors and were marketing original design as a separate service.

The growing awareness of the importance of design, combined with the economic boom of the early 1960s, stimulated the emergence of a modern visual culture. Corporate identities and logos changed the way that corporations did business, as corporations placed a greater emphasis on communication. Redesigning a corporation's identity became mandatory in modern business management and frequently entailed a complete organizational reassessment.

International expositions and events, such as Expo 67, the 1976 Summer Olympics in Montreal, and Vancouver's Expo 86, have encouraged communications design. These events provided an explosion of imagery, drawing on Canadian talent for exhibit design, signage, posters, and more.

This accreditation legislation is the first for communications designers in Canada, and the second in the world, after Switzerland. It will serve as a model for other GDC chapters, as well as for ICOGRADA members.

By 1968, the Society of Typographic Designers of Canada had expanded its mandate to include all graphic design, changing its name to the Society of Graphic Designers of Canada (GDC). In the 1970s, GDC chapters and other professional design organizations across Canada rapidly expanded. *La Société des graphistes du Québec* (SGQ) was established in 1972. (Recently the SGQ changed its name to *la Société des designers graphiques du Québec*.) During the same period, the Graphic Artists Guild in Vancouver and the Society of Graphic Designers of Alberta were founded; they would later join the GDC. In 1976, the GDC was granted a National Charter of Incorporation.

As it is committed to international professional standards, the GDC is a member of the International Council of Graphic Design Associations (ICOGRADA). ICOGRADA is made up of graphic design organizations from more than 60 countries and has consultative status with both the United Nations and the Council of Europe.

A milestone in communications design history is the Association of Graphic Designers of Ontario Bill, which was passed by the Ontario Legislature on April 18, 1996 (Royal Assent was given April 25, 1996). This accreditation legislation is the first for communications designers in Canada, and the second in the world, after Switzerland. It will serve as a model for other GDC chapters, as well as for ICOGRADA members.

Industrial Design

Canadian industrial designers first became an organized group in 1947, under the banner of the Affiliation of Canadian Industrial Designers. One year later, the name was changed to the Association of Canadian Industrial Designers (ACID). Provincial chapters now exist in Quebec, Ontario, and British Columbia. Also in 1947, the Ontario College of Art (now the Ontario College of Art and Design) offered the first professional industrial design program in Canada.

The growth of the industrial design community and the support of federal government officials led to the development of the Industrial Design Act in 1961, which launched the federal government's first initiatives in design promotion. Under these policies, the National Design Council and the Office of Design (which later became Design Canada) were founded, with a focus primarily on industrial design. During the 1960s and 1970s, several universities, Cegeps, and colleges founded industrial design programs, in part through the support of the professional industrial design associations.

Expo 67 in Montreal undoubtedly placed industrial design on centre stage. The momentum created by that event and by the parallel congress of the International Council of Societies of Industrial Design (ICSID) boosted the reputation of Canadian industrial designers. At the same time, corporations drew attention to industrial design. For example, Bombardier introduced the Ski-Doo to the marketplace in 1969 and went on to establish a standard for industrial design in many of its products. Other corporations, such as Clairetone Sound Corporation and Nortel Technology (formerly BNR), also began using industrial design to develop their products. Today, the use of industrial design in the product development process remains a corporate policy at Nortel Technology. Companies such as Balier Inc., Keilhauer, Mitel, Newbridge, Lee Valley Tools, Corel, Danesco, Teknion, Umbra, Prevost Car, and Kruger International have all demonstrated the economic value of professional industrial design.

By the end of the 1960s, the number of industrial design consulting firms had significantly increased. However, in the 1970s and 1980s, the manufacturing base in Canada shrank, resulting in key changes to industrial design. Designers developed niche or specialized expertise geared to the needs of the key manufacturing sectors in Canada and began to export their design services.

The disbanding of the National Design Council and Design Canada in 1985, while a major disappointment to designers, caused the national and provincial design associations to intensify their lobbying. Their efforts resulted in the creation of a number of design promotion organizations, such as the Design Exchange, the Institute of Design Montréal, Design British Columbia, and Design in Business Nova Scotia.

Globalization of markets and increased competition have caused businesses to recognize industrial design as a critical component of commercial success and competitiveness. In the 1980s, industrial designers and business increasingly interacted and publicly recognized each other's talent. Industrial designer Michel Dallaire was named among the list of builders of the year by *Commerce*, a monthly business magazine, and Sonja Bata was made an honourary member of the Association of Canadian Industrial Designers.

In the 1970s and 1980s…designers developed niche or specialized expertise geared to the needs of the key manufacturing sectors in Canada and began to export their design services.

Networking is key for the 1990s and beyond. In industrial design, teamwork, whether national or international, real or virtual, is becoming increasingly essential to success. Canadian industrial designers will continue to forge national and international ties at the 1997 ICSID congress hosted by Canada in Toronto.

Design Canada: Creation and Demise

The Canadian government's design promotion policies, which began in the late 1940s and continued into the 1980s, had a major impact on the growth and prosperity of Canada's design sector. The withdrawal of that support created a vacuum that persisted into the early 1990s.

In 1946, the National Gallery, the National Film Board, the federal Department of Reconstruction, and the National Research Council arranged the exhibition "Design in Industry." Its success spurred the creation of the Industrial Design Section office, under the supervision of the National Gallery, a year later. In 1953, the National Industrial Design Council was established, again within the National Gallery. It was later re-established within the Department of Industry, Trade and Commerce, with support from the Office of the Design Advisor, and became the National Design Council.

The design sector flourished through the 1960s and 1970s. Expo 67 and related design events, such as the ICSID 67 (International Council of Societies of Industrial Design) which was hosted concurrently in Montreal, are frequently cited as watershed events, when the sector had vitality and optimism about its future. In 1976, Design Canada was formed. As an executive arm of the National Design Council, Design Canada brought together the resources of the Office of the Design Advisor, the Department of Industry, Trade and Commerce, and the Secretariat of the National Design Council. Design Canada quickly became the hub of design in the country, as well as an international leader in design promotion and a model for other countries, including the United States. Under a mandate to promote and encourage design in Canadian industry, Design Canada mounted a series of exhibitions and lectures across Canada, aimed at

Since the early 1990s, however, the federal government has begun to reinvest in design by contributing to the financing of private sector-led design promotion organizations in Montreal and Toronto.

business and the general public. Although it primarily emphasized industrial design, the series also covered other disciplines.

The broad program of Design Canada was later narrowed to emphasize design promotion to industry, through the creation of the Industrial Design Assistance Program. Federally cost-shared provincial programs were also set up in Nova Scotia, Quebec, Ontario, and Manitoba to promote design and to provide design support for the Manitoba Design Council and its Design Management Centre.

Other Design Canada activities included:

- promoting design within the federal government, especially in the area of government procurement;
- founding the Canada Awards for Excellence in Design;
- establishing the Record of Designers, a tool for sourcing industrial and communications design capability;
- providing scholarships for design studies in industrial design;
- publishing reports on the design sector;
- offering seminars;
- encouraging university-level design programs; and
- founding a scholarship program for Canadian design students to study abroad.

Design Canada was pivotal in establishing Carleton University's industrial design program and in creating the University of Toronto's design management program through grants.

In 1985, the federal government officially wound down the National Design Council and Design Canada. The recommendations of the Nielsen Task Force, which led to the disbanding of the council and to the closure of Design Canada, formalized the government's shift in priorities away from design that had begun in the early 1980s. The task force recommended that professional design associations, in cooperation with the Canadian Manufacturers' Association and other industry bodies, be encouraged to assume the design promotion mandate of Design Canada. Yet the sector lacked the resources to take up the challenge, and in a short period all its federally supported programs in Canada disappeared.

Since the early 1990s, however, the federal government has begun to reinvest in design by contributing to the financing of private sector-led design promotion organizations in Montreal and Toronto, and to various design promotion activities both within Canada and, to a limited degree, abroad. This renewed support is helping to lay the foundation for the design sector to pick up the challenge issued by the Nielsen Task Force in 1985.

2.2

PROFESSIONAL DESIGN ASSOCIATIONS

Canadian designers are well represented by professional associations.

Professional design associations have played a major part in developing the disciplines. Each design discipline has national and provincial associations, although not in every province and territory. Generally, designers are members both of a provincial association as well as of the national association. The primary professional associations are:

- Royal Architectural Institute of Canada (RAIC);
- Canadian Society of Landscape Architecture (CSLA);
- Interior Designers of Canada (IDC);
- Association of Canadian Industrial Designers (ACID);
- Society of Graphic Designers of Canada (GDC).

In Quebec, communications designers are represented by *la Société des designers graphiques du Québec*, which is not formally associated with the GDC.

The roles of the associations vary by discipline. In the built environment, the national associations tend to be the coordinating bodies for the provincial or regional associations, often developing national standards, lobbying governments, and acting as advocates. This description applies to the communications design associations as well, but less so to the industrial design associations, which tend to be smaller. All the national associations are involved in promotion and in developing international relationships with like associations. Although there are organizations that primarily promote design, many of the professional associations, at both the national and the provincial levels, also promote design through conferences, awards, or publications. The professional associations are also involved in continuing education and in the dissemination of information about the professions, to the extent to which their size and budgets allow.

Provincial or regional associations differ significantly among the sub-sectors. The built environment disciplines have strong networks within the provinces or regions. Their primary role is a regulatory one, with regulatory regimes in each of the three disciplines established to guide professional practice. A similar role is played by the communications and industrial design associations in Ontario, but not in the other provinces. Table 2-2 provides an overview of the roles of the national associations, and Table 2-3 depicts provincial, territorial, and regional association infrastructure.

Some of the professional design associations are struggling to meet their mandates. Most depend on volunteers and suffer from limited membership and lack of revenue. Except in architecture, membership in an association is not required to practise, although in some cases it is required to use the professional title. Therefore, many of the associations must prove their worth based on the benefits they provide by way of professional development, networking, promoting the profession, and lobbying on behalf of members. Many of these benefits accrue to all practitioners, not just to members.

There is a trend towards more professional regulation of the disciplines.

Professions or occupations can regulate the standards of practice in a number of ways:

- **Licensure** provides the exclusive right to practise. It is based on a regulatory regime by which only persons holding the licence are legally entitled to perform any licensed functions. Those who are not licensed can be prosecuted for offering the services within the scope of practice defined by the licensing regime.[1] Licensed professions differ from those that are not licensed by their commitment to acting in the public's interest. Licences may be administered

Table 2-2: Profile of National Professional Design Associations

Organization	Objectives	Activities	Associations
Royal Architectural Institute of Canada (RAIC)	• To advance the cause of architecture and its practice in Canada • To provide the national framework for the development and sharing of architectural excellence • To create forums that bring together leading work in the field of architecture and architectural practice for critique and debate, recognition of excellence, and substantive documentation as a basis for collective learning by the broader community • To promote an appreciation of architecture and the architectural profession in Canada • To promote the intellectual development of the profession and active collaboration with the schools and affiliates • To promote encouragement and recognition of worthy aspirants to the profession	• Publish design-oriented books, technical and practice-oriented publications, newsletters and directories • Organize symposia and exhibitions • Create opportunities for joint research and policy development between practitioners and academic researchers, and disseminate research results through publications, conferences, and exhibitions • Coordinate a national program in support of architectural practice, in partnership with the provincial associations • Administer awards programs that recognize excellence in the field of architecture • Organize practice committees, which offer members an opportunity for networking and information sharing through conferences, workshops, publications, and international exchanges • Promote local architectural networks in partnership with schools of architecture, provincial associations, and local architectural societies • Foster linkages to the international community through cultural and professional exchange	• Provincial associations: B.C., Saskatchewan, Alberta, Manitoba, Ontario, Quebec, New Brunswick, P.E.I., Nova Scotia, and Newfoundland • Committee of Canadian Architectural Councils, Canadian Architectural Certification Board, and Canadian Council of University Schools of Architecture • International affiliations include the American Institute of Architects, the Federacion de Colegios de Arquitectos de la Republica Mexicana, the Architectural Society of China, and l'Union internationale des architectes
Interior Designers of Canada (IDC)	• To encourage excellence of interior design in the public interest in Canada • To assist educational institutions in the training and development of designers • To encourage the continuing education of practising designers • To assist provincial associations with research and common organizational information • To provide liaison between the profession and the public	• Develop and promote professional practice standards and codes of ethics • Train and accredit interior designers • Promote public awareness of Canadian design capabilities, nationally and internationally	• Provincial associations in B.C., Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, and New Brunswick • International affiliations include International Federation of Interior Designers, Foundation for Interior Design Education Research, National Council for Interior Design Qualifications, and Interior Design Continuing Education Council • National Design Alliance (NDA)

Table 2-2: Profile of National Professional Design Associations *cont'd.*

Organization	Objectives	Activities	Associations
Canadian Society of Landscape Architects	• To provide a vehicle for the membership to trade information and expertise internationally • To provide a voice for its members, formulating policies on various issues	• Professional accreditation, registration, interprovincial and international reciprocity • International trade development • Award programs • Media relations and communications on behalf of its members	• Provincial/regional associations in B.C., N.W.T., Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and Atlantic provinces • International affiliations include American Society of Landscape Architects • NDA
Association of Canadian Industrial Designers	• To represent members within ICSID and the federal government • To serve as a link between the provincial associations	• Disseminate information to non-affiliated members • Organize national congress of industrial designers • Support provincial initiatives • Support other initiatives, such as 1967 and 1997 ICSID International Congresses	• Associations in B.C., Ontario, and Quebec • International affiliations with ICSID • NDA • NCDI (National Congress of Industrial Designers)
Society of Graphic Designers of Canada	• To secure and maintain a defined, recognized, and competent body of graphic designers and to promote high standards of graphic design for the benefit of Canadian industry, commerce, public service, and education	• Adopt and set standards of professional conduct • Host exhibitions of major work • Provide professional development opportunities • Provide information on the profession to students, government, and industry • Lobby federal government on issues of national interest • Promote professional practice and code of ethics • Promote design to potential clients	• Thirteen chapters across Canada in B.C., Alberta, Saskatchewan, Manitoba, Ontario, and the Atlantic region including the Association of Registered Graphic Designers of Ontario (ARGDO) • International affiliations include International Council of Graphic Design Associations (ICOGRADA) • NDA
La Société des designers graphiques du Québec	• To promote and advance communications design for the professional and economic benefit of the association's members	• Exchanges among designers through seminars and networking opportunities for members • Developing and promoting professional practice standards and codes of ethics • Professional promotion • Professional support, such as mentoring new designers • Publications, newsletters, and directories	• Chapters in Montreal and Quebec City

Table 2-3: Provincial, Territorial, and Regional Association Infrastructure

Jurisdiction	Architecture RAIC	Landscape Architecture CSLA	Interior Design IDC	Communications Design GDC	Industrial Design ACID
Yukon	No association (can be licensed in provinces)	No association	No association	GDC, B.C. Chapter	ACID (only members at large)
Northwest Territories	No association (can be licensed in other provinces); N.W.T. Architectural Society is not a licensing body	N.W.T. Association of Landscape Architects	No association	GDC, Alberta Chapter	ACID (only members at large)
British Columbia	Architectural Institute of British Columbia	B.C. Society of Landscape Architects	Interior Designers Institute of B.C.	GDC, Vancouver Island Chapter, B.C. Chapter	B.C. Industrial Designers Association
Alberta	Alberta Association of Architects	Alberta Association of Landscape Architects	Registered Interior Designers Institute of Alberta	GDC, Alberta North Chapter, Alberta South Chapter	ACID (only members at large)
Saskatchewan	Saskatchewan Association of Architects	Saskatchewan Association of Landscape Architects	Interior Designers of Saskatchewan	GDC, Saskatchewan North Chapter, Saskatchewan South Chapter	ACID (only members at large)
Manitoba	Manitoba Association of Architects	Manitoba Association of Landscape Architects	Professional Interior Designers Institute of Manitoba	GDC, Manitoba Chapter	ACID (only members at large)
Ontario	Ontario Association of Architects	Ontario Association of Landscape Architects	Association of Registered Interior Designers of Ontario	Association of Registered Graphic Designers of Ontario	Association of Chartered Industrial Designers of Ontario
Quebec	Ordre des architectes du Québec	Association des architectes paysagistes du Québec	Société des designers d'intérieur du Québec	Société des designers graphiques du Québec	Association des designers industriels du Québec
New Brunswick	Architects Association of New Brunswick	Atlantic Provinces' Association of Landscape Architects	Association of Registered Interior Designers of N.B.	GDC, Atlantic Chapter	ACID (only members at large)

Table 2-3: Provincial, Territorial, and Regional Association Infrastructure *cont'd.*

Jurisdiction	Architecture RAIC	Landscape Architecture CSLA	Interior Design IDC	Communications Design GDC	Industrial Design ACID
Nova Scotia	Nova Scotia Association of Architects	Atlantic Provinces' Association of Landscape Architects	Association of Registered Interior Designers of Nova Scotia	GDC, Atlantic Chapter	ACID (only members at large)
Prince Edward Island	Architects Association of P.E.I.	Atlantic Provinces' Association of Landscape Architects	No association (members can join association in Nova Scotia)	GDC, Atlantic chapter	ACID (only members at large)
Newfoundland	Newfoundland Association of Architects	Newfoundland Association of Landscape Architects	No association (members can join association in Nova Scotia)	GDC, Atlantic Chapter	ACID (only members at large)

by practitioners (self-governing) or by government. Architecture is the only discipline in the design sector in Canada that is subject to licensing. Architects' acts are considered to be both practice and title legislation. Thus, the title "architect" applies only to those who have met the admission standards (education, experience/training, examination) of the profession and have become licensed.[2]

- **Certification** is based on a regulatory regime under which persons with the requisite qualifications are certified by a body or an agency as possessing those qualifications. A certificate is a formal document that attests to the skills, knowledge, and abilities of the holder. The holder may present this certification to the public as proof of competence. The certification regime may be administered by practitioners (self-governing) or by government. Members of the profession are granted the exclusive right to use a particular name or title. Those without title are precluded not from practising, but only from using the title. Interior designers and landscape architects in many provinces, for example, are governed by title acts, as are communications designers and industrial designers in Ontario.

- **Accreditation** is the process by which an agency or association grants public recognition to a training institution, a program of study, or a service that meets predetermined standards. Many post-secondary education programs in the built environment are accredited by the associations, thereby ensuring that graduates have accumulated specific knowledge and skills. Accreditation in the design sector is discussed in Chapter 6.

Currently, architecture is the only design occupation with a Practice Act, meaning that architects must be registered or licensed by a provincial association to be eligible to practise.[3] Landscape architects and interior designers in several provinces have been trying to obtain similar status for many years. In Alberta, some interior designers are licensed under the Architects' Act. In fact, the built environment design professions in Alberta are proposing an omnibus act that would encompass architects, landscape architects, interior designers, and urban planners. The new professional act would include definitions of title and scope for the professions. Discussions are under way to create an omnibus association, called the Alberta Association of Architects, Interior Architects, Landscape Architects and Planners.

By comparison, communications design is still in the

Licensing regimes prevent people who are not licensed in a particular jurisdiction from practising there, as is the case for architects.

early stages of professional regulation. Although there are a large number of practitioners, it is not clear that all those calling themselves communications designers have full expertise in design. Recently, the Ontario government passed a bill giving communications designers in Ontario professional status. Professional members of the GDC in Ontario are the second in the world, after Switzerland, to become registered communications designers. The association will be responsible for granting qualified communications designers the right to use the title "Registered Graphic Designer" and RGD.[4] Certification should provide a means for the public to distinguish between those communications designers who meet certain criteria and standards and those who do not.[5] Many communications designers believe that certification will enhance the recognition of the communications design profession as a field of high standards and ethical practices. While the current initiative exists only in Ontario, owing to provincial jurisdiction, the campaign is supported nationally, with the intention of using the Ontario model.

Only industrial designers in Ontario are covered by a Title Act. In that province, members of the association may refer to themselves as "Chartered Industrial Designers." No initiatives are under way at this time to obtain similar status in any other provinces. The Association des designers industriels du Québec has in the past approached the *Office des professions du Québec*, but were not admitted. Table 2-4 summarizes the legal status of designers in Canada.

There is some debate among designers about the value of professional regulation to the design professions.

Licensing and certification present both advantages and disadvantages for designers. The advantages include:

- greater profile of the profession;
- higher competence and ethical behaviour of practitioners through standards for entry and practice; and
- greater recognition of the distinction between design and related occupations.

The public also benefits because licensing and certification demonstrate the qualifications of the holder of the title and help to ensure that the holder will act in the public's best interests.

Licensing regimes prevent people who are not licensed in a particular jurisdiction from practising there, as is the case for architects. Recent initiatives for interprovincial reciprocity are making it easier for architects to become licensed in provinces other than their "home" provinces. In all provinces but Manitoba, architects can be granted a temporary licence to work in collaboration with a local firm on a particular project. Furthermore, the provincial architectural organizations, through the Committee of Canadian Architectural Councils, have signed the Canada/U.S. Inter-Recognition Agreement with the National Council of Architectural Registration Boards in the United States. This agreement essentially allows an architect registered in Canada to work in the United States, and vice versa. A similar arrangement is currently being negotiated with the United States and Mexico as part of the Tri-National Committee on Architecture and the North American Free Trade Agreement (NAFTA). In comparison, nothing prevents U.S. landscape architects from practising in Canada; however, because there is a licensing regime for landscape architects in the United States, Canadian landscape architects cannot practise there without becoming licensed by the particular state.

Certification regimes prevent people who are not certified within a particular jurisdiction from using the title granted by the regime there. For example, landscape architects who are certified in one province cannot practise in another province under the title granted by the regime in the other province without meeting the qualifications set out by the certifying body. However, they can practise under another title.

Table 2-4: Legal Requirements for Designers in Canada

Jurisdiction	Architecture	Landscape Architecture	Interior Design	Communications Design	Industrial Design
Yukon	None	None	None	None	None
Northwest Territories	None [6]	None	None	None	None
British Columbia	Practice Act	Title Act	Title Act — Registered Interior Designer	None	None
Alberta	Practice Act	Working on Title Act	Title Act under the Registered Interior Designers Practice Act; Licensed Interior Designer under the Alberta Association of Architects and Licensed Interior Designers	None	None
Saskatchewan	Practice Act	Working on Title Act	Title Act; applying for a Practice Act	None	None
Manitoba	Practice Act	Working on Title Act	Title Act — Professional Interior Designer	None	None
Ontario	Practice Act	Title Act	Title Act — Registered Interior Designer	Title Act — Registered Graphic Designer	Title Act — Association of Chartered Industrial Designers of Ontario
Quebec	Practice Act	Only those registered in the association in 1973 are covered by the Title Act	Title Act — Certified Interior Designer only for Montreal Island and Quebec City	None	None
New Brunswick	Practice Act	Working on Title Act	Title Act — Registered Interior Designer	None	None
Nova Scotia	Practice Act	Working on Title Act	Title Act — Registered Interior Designer	None	None
Prince Edward Island	Practice Act	Working on Title Act	None (can register in Nova Scotia)	None	None
Newfoundland	Practice Act	None	None (can register in Nova Scotia)	None	None

The protection of the public interest from incompetent or unethical members of the profession, as well as the issues of public health, safety, and welfare, are motives for licensing and certification. Licensing also addresses the issue of third-party harm; that is, harm to those who are not party to the transaction between the practitioner and the consumer. In recent years, the public has become skeptical that their interests rather than those of the professions are being served (Manitoba Law Reform Commission, 1994). As a result, although more occupations have been seeking such status, governments have become more reluctant to grant it.

Although professional regulation has many benefits, it also has disadvantages. Legislation can be costly to administer: it requires a regime to develop and to enforce entry and practice standards, to test applicants, to receive complaints, to conduct practice audits, and to hold disciplinary hearings. Less obvious is the cost to consumers of the regulatory scheme's intervention in the competitive market. Licensing, in particular, limits competition by reducing the number of practitioners who are allowed to offer that service to the public. Certification, however, does not have this effect, since uncertified practitioners are allowed to compete with certified persons. Prices likely will be higher under licensing regimes (Manitoba Law Reform Commission, 1994), though, in the end, the marketplace will determine how much it will pay for a particular service, as architects are well aware. Licensing also could hinder the evolution of a profession by creating boundaries between professions. Architects and landscape architects are often prevented from performing certain work, regardless of their competence, because it falls in the domain of engineers.

In most developed countries, including the "design powerhouses" of Germany, Italy, and Japan, less professional regulation exists than in North America. In some countries, graduation from an accredited school is required to practise, as is the case for architects in Denmark and Mexico, for example. In Mexico, however, education in architecture also includes a year of practical experience. Professional regulation is more widespread in North America, the United Kingdom, and Australia. Among designers in those countries, usually only architects are licensed, although, as mentioned earlier, landscape architects in the United States also are licensed. However, international standards are being established in some professions. For example, work is currently under way on a common code of ethics for architects practising in the European Union. As well, the Union internationale des architectes and the National Council of Architectural Registration Boards are developing international standards for licensure.

Practitioners, both in Canada and abroad, are split on the issue. The U.S. and Danish authorities interviewed for the study suggested that superior academic qualifications and extensive experience are more critical to a qualified design sector than is licensing. In contrast, one British study noted that regulations of some kind are needed to give the design professions credibility and status: "Without accreditation, quality is open to question, and price remains a critical element in clients' selection of design suppliers."

2.3

DESIGN PROMOTION ORGANIZATIONS

Promotional Strategies within Canada

New organizations have emerged cross-Canada with the purpose of promoting design.

Driven by requests from the design community, several promotion organizations have sprung up to promote awareness of design among the business community and other potential users. These design promotion organizations also facilitate interaction among the design disciplines by offering seminars, exhibitions, conferences, and design awards programs.

The establishment of the Design Exchange and the Institute of Design Montréal indicates that the public and private sectors recognize the importance of promoting the achievements of the design sector. Such design institutions play another critical role: they encourage research on the value-added component of design to a country's economy.

The National Design Alliance (NDA) and its members, design professional associations and promotional organizations, have contributed to getting the federal government to include design on its economic agenda. NDA activities have been responsible for numerous initiatives, including this study, the development of Standard Industrial Classification codes for the design disciplines, and trade development initiatives with the Department of Foreign Affairs and International Trade.

Several initiatives at the provincial level have also focused on the role of design in economic competitiveness. These include the recently completed reports, "*Design For a Strong Ontario*" and "*Use of Industrial Design in Manufacturing* in British Columbia."

- Design in Business Nova Scotia, a provincial design network, is developing strategies to:
  - improve the climate for design in Nova Scotia;
  - forge links between the design sector and the business community;
  - educate businesses, large or small, on the benefits of working with designers;
  - stimulate a design culture in the province;
  - identify definitive policies for the government's role in promoting design.

Cooperation with other Atlantic provinces is an important objective for Design in Business Nova Scotia, which recognizes that links between the provinces will help to raise the awareness of design by the Atlantic business community.

- A group of more than 100 designers from all disciplines, suppliers, educators, and representatives of associations recently formulated a strategy for the design sector in Ontario. The initiative was funded by the Ministry of Economic Development and Trade and was supported by the City of Toronto. Their efforts culminated in a report, "*Design for a Strong Ontario*," which details their vision and the strategic directions and initiatives for realizing it. The strategic directions are to:
  - marshal the resources of the entire design sector to work together;
  - increase the demand for the use of design in Ontario;
  - increase the international use of Ontario designers and design products and services;
  - develop a more comprehensive and uniform level of professional excellence among Ontario designers;
  - emphasize responsible and sustainable design;

– increase design content in other professional disciplines.

They are currently looking at ways to implement the strategy.

- Design Now, the British Columbia Design Strategy Task Force, has involved the entire design community as well as clients, business, educators, and all levels of government in its strategy to develop and sustain a community that understands the integral role of design in the economy and in the culture of British Columbia. Fifteen initiatives have evolved from four working group areas:
  - design demand;
  - design capabilities;
  - design export;
  - universal, socially and environmentally responsible design (USER).

The activities of the various organizations have augmented the research that helps to prove the economic value of the sector. For example, the Ontario report includes several case studies that focus on design's economic contribution to companies.

Table 2-5 provides a brief overview of the promotional organizations drawn from the NDA Member Inventory.

Some of the activities undertaken by these organizations, and many of the organizations themselves, receive support from the various levels of government. Although this support has been significant to the organizations, the government's lack of a comprehensive strategy for design promotion leads to inconsistency in the way funds are applied from one year to the next and across organizations.

Promotional Strategies in Other Countries

Many industrialized countries have instituted strategies for promoting design. However, there is no universally preferred model. Each strategy combines programs and initiatives that reflect the country's politics, economics, and culture. This fact is significant when analyzing existing national design strategies and even more important when developing new ones.

John Heskett, the pre-eminent British design historian, has studied national design policies. His research led him to conclude that there are four basic models:

- **Statist** — where industry is owned by the national government, the design policy is created and implemented by a central government authority, and customers/consumers have no voice in the market place. The design policies of the former Soviet Union and the former Eastern Bloc countries exemplified the statist model.
- **Centrist** — where the national government plays an important role in determining and implementing economic policy in cooperation with industry. The design policy of Taiwan is a good example.
- **Devolved** — where there is no national policy on design, but where a government or paragovernmental agency plays a role in promoting design. Most European design councils or centres fall into this category, including those of Denmark and France.
- **Indirect** — where a government implements laws, rules, and regulations for the benefit of the general public, and design, like any other sector, is responsible for its own survival. The United States and, to a certain extent, Germany are examples of this model. Canada is on the cusp of the devolved and the indirect models.

Table 2-5: Profile of Design Promotion Organizations

Organization	Objectives	Activities	Associations
Design Exchange (DX)	• To advocate design as a category of new value • To celebrate the far-reaching value of design both economically and culturally • To operate as a catalyst between business and designers • To serve as a resource to business, designers, and the public	• Corporate programs and services, e.g., product launches, business seminars, exhibits • Professional programs and services, e.g., lecture series, continuing education seminars, design shows, in cooperation with design associations • Public programs and services, e.g., lectures, exhibitions, public school outreach • Canadian Design Directory • Resource Centre • Secretariat, Ontario Design Strategy Steering Committee	• 1,800 DX members composed of designers, design associations, businesses, industry associations, suppliers, general public • Links with design promotion centres internationally • Group for Design in Business • York University, University of Toronto • NDA
Alberta Design Works[7]	• To integrate the needs of the design industry, its suppliers, clients, educators, government, and the public • To create awareness of design • To promote the design sector • To network design, markets, and community • To improve quality of life through design	• Alberta Design Week 1991 • Prairie Region Meeting on Design Mobilization, 1993 • Designet project: provincial electronic network to serve the design and related sectors • Designer demonstration project: community health-care design forum	• Calgary- and Edmonton-based industrial, interior, and communications designers; architects, landscape architects, and urban planners; fashion designers; suppliers; businesses • Advanced Technology Centre (Edmonton) • NDA
Design in Business Nova Scotia	• To demonstrate the effectiveness of design to the business sector and to government • To demonstrate the quality and availability of Nova Scotia design expertise in all fields to customer/consumers of design in Nova Scotia • To encourage communication and interaction among design disciplines • To provide recognition to the general public of the benefits of design in life today • To promote design education at all levels and to improve the education of designers	• Spearheading development of the Nova Scotia design strategy • Design management seminars in cooperation with Dalhousie University • Public policy development: N.S. and local government procurement projects • Outreach to other Atlantic provinces	• Professional design societies of Nova Scotia, and related associations • Nova Scotia College of Art and Design (NSCAD), Design and Craft divisions • Technical University of Nova Scotia (TUNS), Faculty of Architecture • Nova Scotia Designer Crafts Council (NSDCC) • Dalhousie University Faculty of Management • Nova Scotia Research Foundation • NDA

Table 2-5: Profile of Design Promotion Organizations *cont'd.*

Organization	Objectives	Activities	Associations
Design British Columbia	• To encourage recognition of and participation in design to enhance quality of life • To build awareness of design as a key factor for business success • To foster design excellence through education and research • To initiate design strategies and policies with government and industry • To advance cooperation and interaction within the design community	• Biennial public Design Week • "Design the Future": public school project, including teachers' resource kit and video, school outreach • Industry Champion pilot project with B.C. Manufacturers' Association (BCMA) (first phase produced study of design use by B.C. manufacturers) • Information centre	• B.C. Manufacturers' Association • Greater Vancouver Regional School District • The Knowledge Network • Simon Fraser University, Emily Carr Institute of Art and Design, UBC • Vancouver Art Gallery, Science World, Vancouver Museum, Vancouver Public Library (Design Weeks) • Design Now Council, B.C. • NDA
Liaison Design[8] (Quebec)	• To increase the demand for professional design services in three specific design sectors: interior design, graphic design, and industrial design	• Design capabilities database (Internet site to be launched fall 1996), includes detailed portfolios of Quebec industrial, interior, and communications designers • Design advisory services, business–design liaison • Industry promotion: industry roundtables, seminars, trade fair promotion, case studies, industry newsletter, video and brochure	• Institute of Design Montréal • Quebec-based business and manufacturing associations • Sous-Traitance Industrielle Québec • Quebec industrial commissioners, City of Montreal Economic Development • NDA
The Group for Design in Business (Ontario)	• To increase the competitiveness of Canadian businesses through the promotion of design effectiveness	• Financial Post Design Effectiveness Awards • Financial Post Magazine Awards Supplement • Design Effectiveness Awards exhibit and seminars, in cooperation with the Design Exchange	• Design Exchange • The Financial Post • NDA
Institute of Design Montréal	• To create a design culture • To promote design as an economic tool • To stimulate designer activity locally and internationally	• Program to Stimulate Applied Research in Design • IDM Foundation • Design Internship Program • IDM Design Awards (L'actualité magazine supplement; TVA broadcast awards night; awards exhibition) • Local and travelling exhibits • Le Devoir "Les Cahiers de l'IDM" • Reference centre	• Liaison Design • Le Devoir • L'actualité magazine • TVA • International network of design promotion centres • ICSID (promotional member) • NDA

Table 2-5: Profile of Design Promotion Organizations *cont'd.*

Organization	Objectives	Activities	Associations
Forum Design (Quebec)	• To represent the design professional milieu, particularly those active in the Montreal region, to all parties having a real or potential impact on design development • To support the efforts of the various design disciplines in the interests of professional development	• Policy development and government advocacy • Study of the socioeconomic impact of Quebec design, 1994 • Spearheaded proposal for the development of a Canadian WWW site	• Quebec professional design associations • NDA
Virtu (Ontario)	• To provide a forum for new design in Canada and Canadian design internationally • To create public awareness of design • To promote greater dialogue among design disciplines • To help to bridge the gap between the design arts, industry, and the general public • To develop wider recognition of designers and design issues	• Virtu Design Awards • Print and CD awards publications • Local and travelling exhibitions • Virtu retail store at Harbourfront, Toronto	• Professional design societies, design firms, designers, suppliers, general public

Any design strategy must in some way reflect the political context of the country in question. For example, a *centrist* model, such as the one found in Taiwan, would be inefficient in an *indirect* national context, such as that of the United States.

Context applies equally to culture — in the anthropological sense — and to economics. A culture in which the citizens share more or less the same belief systems, mythologies, religion, and language (say, Japan) presents vastly different needs in terms of strategy than does a multicultural society (Canada or the United States, for example). The economic context cannot be ignored. A country that relies on its industry for the major portion of its GNP requires a different strategy than does one that depends on its natural resources and agriculture to generate its GNP.

Table 2-6 summarizes the context for design strategies of many countries, including Canada.

The international interviews reinforced, in a more anecdotal way, the information gained from the literature review. For example, it became clear that for those countries falling into the *centrist* model, the government worked in concert with industry and design. Taiwan is probably the best example of this model; the interviewee noted that well over CDN$200 million will be invested in three five-year plans for design promotion.

In the countries in the *devolved* classification, the national governments continue to play a proactive role in design promotion, although they allow a place for the private sector.

Table 2-6: Contextual Framework

Country	Political Context	Cultural (Anthropological) Context	Economic Context
Japan	Centrist	Homogeneous	Industrial
Taiwan	Centrist	Homogeneous	Industrial
Singapore	Centrist	Homogeneous	Industrial
Denmark	Devolved	Homogeneous	Agricultural; industrial
Sweden	Devolved	Homogeneous	Resource-based; industrial
Finland	Devolved	Homogeneous	Resource-based; industrial
France	Devolved	Homogeneous	Agricultural; industrial
U.K.	Devolved	Homogeneous	Industrial
Spain	From Devolved to Indirect	Homogeneous	Agricultural; industrial
Germany	From Devolved to Indirect	Homogeneous	Industrial
Australia	From Devolved to Indirect	Heterogeneous	Resource-based; agricultural; industrial
Canada	From Devolved to Indirect	Heterogeneous	Resource-based; agricultural; industrial
Italy	Indirect	Homogeneous	Agricultural; industrial
U.S.	Indirect	Heterogeneous	Industrial; agricultural; resource-based

- The respondent from Design Forum Finland commented on the success of its designer consultancy program, in which nearly one-third of the 400 firms visited by a team of designers had proceeded to contract some design services. Furthermore, the Ministry of Trade and Industry was now including design in all of its financial support programs to small and medium-sized industries.
- The French government and private industry used design services in most of their *grands projets*, such as the Concorde, the Airbus, and the TGV. As well, the French government initiated some major architectural projects. In all of these cases, the French government had demonstrated the value of design by being a buyer of design.
- Similarly, the Dutch government and associated agencies, such as the post office and the telephone and railway services, make extensive use of design and design consultants — to the point that so-called *public* design is perceived as a Dutch phenomenon.

Germany, once well entrenched in the devolved camp, is turning towards the indirect model. More and more, the German government asserts that design promotion should be done by industry. Similarly, the Spanish government, until the end of the Franco era in 1975, was the principal user of design services. Following Spain's successful hosting of both the Summer Olympics and the World's Fair in 1992, the government ceased buying design services. While still offering programs to support design, the government believes that the necessary infrastructure is in place and that further development of the design sector can be increasingly left in the private sector. Australia, a country whose political, economic, and cultural context closely parallels that of Canada, has a government that does not believe in actively supporting design, according to the interviewee from *Design World* magazine.

Table 2-7 compares the organizational framework for design internationally. Canadian design organizations, both promotional and professional, were described earlier in this chapter.

Table 2-7: International Design Framework

Country	Funding	Design Council/ Promotional Organization	Design Centre(s)	Design Objective (Mission)	Design Assistance
Japan	Government and private sector	Japan Design Foundation (1981); Japan Industrial Design Promotion Organization (1969)	International Design Centre Nagoya (1992); CDN$1.8 million per annum; 17 employees	To search for constructive proposals that will serve business; to contrive a rich, new interface between technology and society	Information not available
Taiwan	Government	China External Trade Development Council	Taiwan Design Promotion Centre (1979); CDN$9.2 million per annum; 80 employees; centres in Germany and Italy	To raise the level of industrial design and to improve the quality, image, and competitiveness of Taiwan-made products	Design Consulting Service; commercialization; sectoral development; extensive training programs
Singapore	Government	Singapore Design Council; Institute of Design (1991)	Design Centre Singapore; CDN$2.6 million per annum; 20 employees	No mention	Design Ventures Program
Denmark	Government	Danish Design Council (1977); no employees; CDN$0.5 million per annum	Danish Design Centre (1978); 12 employees; CDN$4 million per annum	No mention	Design Management Consultancy
Sweden	Information not available	Foreningen Svensk Form (1945); 14 employees; CDN$250,000 per annum	Swedish Industrial Design Foundation (1989)	To promote good Swedish crafts and design in Sweden and abroad. To reinforce the importance of design for competitiveness	Information not available
Finland	Government (80%) and private sector	Design Forum Finland (1975); CDN$1.5 million per annum; 12 employees. Finnish Design Council (1979)	Finnish Design Centre (1960); CDN$130,000 per annum; private company with 50 shareholders	No mention	Funded consultancy; product evaluation; product launch; designer selection; design information

Table 2-7: International Design Framework *cont'd.*

Country	Funding	Design Council/ Promotional Organization	Design Centre(s)	Design Objective (Mission)	Design Assistance
Spain	Information not available	Superior Council of Design (1987); Association of Industrial Design for the Promotion of the Decorative Arts (1960)	Barcelona Design Centre (1973); CDN$2 million per annum; principally funded by private sector; 12 employees. DDI (Madrid, 1992)	To provide design solutions to the needs of industry; to improve competitiveness and to improve the quality of life	Business Advisory Service
France	Information not available	Agence pour la promotion de la création industrielle (1983); 4 employees; CDN$1.3 million per annum	Centre de la création industrielle (1969); 10 regional design centres	No mention	Assistance to innovation services and projects and Council's assistance regional funds
United Kingdom	Government	The Design Council	No (Design Centre and six regional offices recently closed)	To inspire the best use of design by the U.K., in the world context, to improve prosperity and well-being	None from the Design Centre; some government programs; support for research from the Design Council
Germany	Government and private sector	German Design Council (1951); 7 employees; CDN$1.5 million per annum	Fifteen design centres, including: Stuttgart (1950); Berlin (1969); Essen (1954); Munich (1989); Dresden (1990)	The promotion of design in Germany through interdisciplinary cooperation	Minimal financial assistance; consultation and documentation services
Italy	No government funding	No government aid for design	No national centres	No mention	No; some aid under export assistance
United States	No government funding	No (National Endowment for the Arts (NEA) design programs cancelled)	No national centres	No mention	NEA design programs cancelled

2.4

POLICY SUPPORT IN CANADA

The Canadian government's approach appears to have moved from devolved to indirect.

Specific policies related to the Canadian design sector are lacking.

For example, the contribution of design, per se, is not a criterion for consideration in government procurement policies.[9] Federal and provincial objectives focus on regional and industrial development, rather than on the design sector; thus, a primary consideration in selecting designers is price. Moreover, procurement processes often do not suit the design development process. A recent example was cited of a Crown corporation asking a short-list of designers to provide, as part of the tendering process, "rough ideas" about how they would solve a complex retail strategy and marketing and design problems. When the Crown corporation was informed that this amounted to "spec work," the purchasing agent told the designers to not submit drawings, but rather to "just describe your general ideas and design approach in words — you know — materials, colours, cost, that kind of thing." Regardless of such problems, designers believe that government has the potential to lead by example in recognizing and capitalizing on the services of the sector. In fact, there are recent examples of government procurement of design.

- The City of Montreal, which has a design commissioner, has been leading the way in public procurement of design. The city was responsible for the design–manufacture competitions for the Montreal Casino, which resulted in millions of dollars' worth of business for the Quebec furniture industry. In another project, Faubourg Québec, the City of Montreal launched a competition to award a $500,000 contract to a Quebec furniture manufacturer for the design, development, and production of furniture for a new neighbourhood, which was composed of an 1,800-unit condominium and commercial complex. In these initiatives, designers and manufacturers worked together to create internationally marketable products.
- The Government of British Columbia has undertaken a similar initiative, with the assistance of the City of Montreal, for the procurement of furniture and a wall-lining system for the B.C. Ferry Corporation's new fleet of ferries.

The visible use of design by government has been important in developing the design sector in France, Taiwan, Spain, and the Netherlands, as mentioned earlier.

The intellectual assets of the design sector are hard to protect under current intellectual property legislation.

Copyright protects one-of-a-kind or limited productions and provides automatic protection generally for the duration of the life of the creator plus 50 years. It applies to all *original* literary, dramatic, musical, and artistic works, including design. The word "original" is key in defining a work that qualifies for copyright protection; sometimes originality is difficult to prove. Generally, the creator of the work owns the copyright. However, for designers who create a work in the course of employment or while under contract, the copyright belongs to the employer, unless there is an agreement to the contrary (Industry Canada, 1994). For example, standard contracts for architectural design state that while the client may use the design for the purposes of the building or the property for which it was commissioned, the client does not own the design.

Once any design that is deemed to have a utilitarian function (any industrial design) is reproduced in a quantity of more than 50, the copyright no longer

Research on design issues provides the basis for many of the innovative products and ideas that contribute to a healthy economy.

In Canada, design is not recognized as a research activity by funding agencies.

applies and the design is covered under industrial design legislation. Industrial design legislation protects designs for their "original shape, pattern or ornamentation used to adorn a useful manufactured article." Unlike the automatic protection available under copyright legislation, protection under industrial design legislation is invoked only when designers register their designs. Design-protection legislation allows a product to be registered for 10 years, but the onus is on the designer to register in every country where protection is desired.

Other means to protect designs include trademarks and patents. Trademarks distinguish the goods or services of one person or company from those of another. Slogans, names of products, distinctive packages, or unique product shapes are all eligible for registration as trademarks. Patents, which can be obtained by registration, protect new inventions such as processes, equipment, and manufacturing techniques. They do not cover any artistic or aesthetic qualities of an article. The costs associated with the patent process, such as the costs of research, make it difficult for the independent designer to afford patents. Once the invention is patented, the cost of protecting the value of the patent also can become prohibitive.

Issues of intellectual property become even more problematic in the area of digital transfer and display information. Designs can be manipulated and reproduced even though they are protected by legislation. Information technology also makes it difficult to control unauthorized use of design.

Little funding for design-related research is available at either the federal or provincial levels.

Research on design issues provides the basis for many of the innovative products and ideas that contribute to a healthy economy. In addition, research provides the business models and techniques necessary to ensure effective research and development within organizations.

Unfortunately, support for design by the major funding organizations in Canada is either non-existent or surrounded by prohibitive obstacles. In Canada, design is not recognized as a research activity by funding agencies. Design "falls between the cracks," in that it is not art, science, or social science, under traditional definitions applied by funding organizations. Designers seeking research funds from the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC) commented that they had to manipulate their proposals to fit the criteria for funding, for design is not listed as a discipline by NSERC or SSHRC. Some architects reported success in obtaining funding through the Canadian Mortgage and Housing Corporation and the Canadian International Development Agency, but in both cases funding has been cut and some relevant programs have been eliminated. Few architects have been represented on projects funded through the Institute for Research in Construction (Shadbolt, 1990). The National Research Council's Industrial Research Assistance Program provides funding to small and medium-sized firms and to industrial associations for R&D projects, where the focus is on innovation.

The R&D tax credit does not explicitly recognize design and design expenditures, except as they relate to Scientific Research and Experimental Development (SR&ED) activities and Manufacturing and Processing (M&P) activities. The tax treatment of design activities and design expenditures is dependent upon the tax treatment of the activity to which the design activity relates. Design activities undertaken in the support of projects that demonstrate technological or scientific uncertainty are eligible under SR&ED. M&P activities include "engineering design" performed in Canada, in connection with M&P carried on in Canada. The profits from M&P may be eligible for tax credits. The only province that provides tax credits explicitly for industrial design is Quebec. Tax credits that recognize

the role of design in research and development could influence the purchasing decisions of smaller companies and could increase demand for all designers.

➔ The lack of public financial support for design research may be directly related to the design sector itself.

First, the design professions have been skill-based, with a minimal body of knowledge, reflecting their craft tradition. Second, many design programs are offered by community colleges and other non-university institutions, where research is not part of the mandate. Architecture is the only design discipline with a significant research infrastructure, which includes the schools and the RAIC.

With government cutbacks in funding to research, the sector may have to look elsewhere for support. The Institute of Design Montréal is providing some funding for research to designers to work with industry. Like the European Design Centre and the new British Design Council, it is establishing research as one of its main functions. Interdisciplinary research may provide another means of funding for research; designers may benefit by teaming up with other professionals, whose disciplines are recognized, in undertaking interdisciplinary research in areas such as the environment, culture, and urban history.

➔ At the same time, government has provided support to the design sector through the promotional organizations and the professional associations.

Both the Design Exchange and the Institute of Design Montréal, two major design promotion organizations, have received financial support from the federal government. The Department of Foreign Affairs and International Trade (DFAIT) provided financial support to the Interior Designers of Canada to conduct a study of export opportunities, and to the RAIC to promote Canadian architecture and architects in the United States, Mexico, South America, and East Asia. The RAIC also receives support from the Canada Council (for exhibitions and the Governor-General's Awards for Architecture) from Industry Canada (for promotion of architecture as a service industry) and from other government agencies and departments. In addition, the provincial governments funded the development of provincial design strategies and continue to support the regional promotional organizations.

A similar pattern was found in some other countries, as highlighted in Table 2-7. For example:

- The Design Institute in the Netherlands is funded by the department of culture of the Dutch government and is mandated to promote the design sector.
- The Norwegian Design Council (NDC) is funded by the government to promote design and to inform industry of the benefits. It does this by using the press for publicity, by offering appropriate design seminars, and by organizing an awards program for designers.
- In Taiwan, the government has played an important role in developing industrial design. Beginning in 1989, the Ministry of Economic Affairs (MOEA) funded three aggressive five-year plans. These plans were aimed at upgrading industrial design, improving the image, and boosting the quality of Taiwan-made products. The Design Promotion Centre (DPC) has been consigned by the government to implement these plans. Thanks to the efforts of the DPC, awareness of the importance of industrial design in Taiwan has increased dramatically, and design is now recognized as being key to the nation's continuing economic growth and progress.
- Design Centre Singapore, which is the administrative arm of the Singapore Trade Development Board, a quasi-government agency, is responsible for promoting design. It has organized four highly visible International Design Forums since 1988, as well as exhibitions, seminars, and design clinics to educate and to encourage the use of design.

Some governments have gone even further in supporting the development of the sector in their countries:

- By way of encouraging the private sector to use design, the French government has introduced funding programs, which pay up to 50 percent of a company's cost for services in design, marketing, and quality studies.
- Design Centre Singapore established its Design Venture Program, which gives grants to companies using designers for industrial and packaging design work. Similarly, the Spanish government offers a program to support small and medium-sized companies in developing products through design.

In comparison, in Italy, where the design sector flourishes, there is no design council or centre, and no government support of any kind for design.

2.5
CONCLUSIONS

1 Policies specific to the design sector in Canada are lacking.

- Design per se is not a criterion for consideration in government procurement policies. At the same time, procurement processes fail to comprehend the design development process.
- Design research is inadequately recognized by the research-funding agencies, and research and development tax credits do not explicitly recognize design expenditures, except in Quebec. As a result, the sector lacks a body of knowledge about design.
- Protection of design is difficult and costly to obtain, and copyright legislation has not kept pace with technological advances that affect the production and distribution of designs.

2 Although there is increasing support by governments for design promotion, it tends to be ad hoc.

- Provincial governments have supported the development of design strategies in several provinces and regions. These strategies are aimed at increasing awareness of the design sector in the general public and in the private sector.
- Federal government funding has provided support to many design organizations, including the Design Exchange, the Institute of Design Montréal, and the National Design Alliance.
- Design strategy is a combination of various programs and initiatives, all of which reflect the country's political, economic, and cultural context. Canada has been moving from a *devolved* to an *indirect* approach, meaning that support for design will need to come more often from private sector sources. At the same time, consistent policies are required to ensure the continued development of the sector.

3 The professional framework for the design disciplines must be addressed.

- Architecture is well established as a profession. There has been considerable progress in recent years in defining the other design disciplines, and in establishing frameworks for recognizing professional qualifications for these disciplines, particularly in landscape architecture and interior design. However, variations in the regimes across the country can impede the ability of designers in these disciplines to set up practice in other jurisdictions. Communications design and industrial design, in comparison, have professional infrastructures in Ontario only — models that can be used nationally. Other provinces should move to adopt these standards.

Footnotes

1 In some provinces, an architect can provide architectural services only under a certificate of practice — that is, a business licence provided by the provincial association indicating that the enterprise has satisfied certain requirements.

2 In the case of architecture, the term "certification" means the process by which a candidate's educational transcripts are approved by the Canadian Architectural Certification Board. The process does not confer title.

3 Once licensed, an architect can apply for a seal in order to stamp drawings.

4 The bill includes a grandparenting clause (two years, one year before and one year after the Royal Assent, April 25, 1996), which allows any designer with five years of communications design experience and/or education to register for RGD designation. Any designer not qualifying for the grandparenting clause will have to complete an exam administered by the examination board.

5 Although the process being implemented by communications designers in Ontario is a certification process by definition, the association refers to it as accreditation.

6 The Northwest Territories Architectural Society is working towards a Title and Practice Act. It is not yet in place; thus, architects in the Northwest Territories are required to be registered in one of the 10 Canadian provinces.

7 Alberta Design Works was disbanded in April 1996.

8 Liaison Design and the Institute of Design Montréal are merging their activities.

9 In the case of architecture, the federal government's Open Bidding System allows for a measure of quality-based selection, including design.

CHAPTER 3

Canada exists in a global economy.

More than many other countries, we depend

on export products and globalization.

Design, now, is nothing less than table stakes.

It is not even a competitive weapon.

It is the cost of entry into the global market.

John Tyson, Vice President Corporate Design, BNR (1994)

CHAPTER 3

CHALLENGES WITHIN THE BUSINESS ENVIRONMENT

The performance of the design sector is directly linked to the level and nature of economic activity. The process and end results of design are ultimately about transforming materials, spaces, and images, through the application of innovative ideas and concepts, to meet users' needs. Therefore, the future of design, and the relationship of design to the larger economic system of Canada and the world, is inextricably linked to the changes in the business environment. Business activities pose opportunities for designers. The power of design lies in enabling the achievement of those activities.

Although economic conditions have hindered the progress of the sector overall, many designers are taking advantage of the existing opportunities. Still, the Canadian design sector has not come close to achieving its potential as a creator of wealth. Many opportunities exist, both in Canada and beyond, in which designers can apply their talents. This chapter focuses on the trends in the business environment shaping the design sector.

3.1

ECONOMIC, TECHNOLOGICAL, AND SOCIAL TRENDS

This section discusses the challenges and the opportunities facing the design sector, including those unique to particular sub-sectors and disciplines. It sets the context for the analysis of human resource issues to follow. It assesses the economic and market trends, the technological advances, and the social and demographic changes affecting the sector. Table 3-1 provides a summary at the sectoral and sub-sectoral levels.

Economic and Market Changes

THE CHALLENGES

There is no doubt that the past few years have been difficult ones for the Canadian design sector.

Many of the traditional industries that drive the demand for design services were affected severely by the recession and economic restructuring. Many designers reported that their salaries had been cut. Even more serious, some design firms had to lay off people, and other firms closed. In-house design departments faced a similar fate.

- The construction industry, which is a key demand driver for the **built environment** sub-sector, declined significantly between 1989 and 1994. There have, however, been a few notable exceptions; Vancouver, for example, has been enjoying a construction boom. But generally, governments and corporations are not building to the extent they were in the 1980s. In part, this decline has resulted from the slowdown in the Canadian economy and the oversupply of commercial and residential space built in the mid 1980s. It has also been a result of a shift in corporate philosophies. As one architect noted, "Building buildings as a way to signal identity is no longer acceptable." The situation has also resulted from changes in government social and economic policies and priorities; for example, from the rationalization of health-care services.
- Communications designers reported that the recent recession, combined with the advent of desktop publishing, seriously affected the demand for **communications design** services. They noted that when corporate revenues are in decline, communications design services tend to be cut. With desktop publishing, much of the lower-end "bread and butter" design work is now done in-house rather than being contracted to professional communications designers. Communications designers have had to create new opportunities for themselves in a radically different market.
- Demand for **industrial design** services has been slow. Traditionally, industrial designers have been tied to manufacturing, particularly to the design of office furniture, toys, and plastic, automotive, and household products — all areas affected by the recession. The market in Canada for industrial designers is limited at the best of times because of the relative small-scale and branch-plant nature of manufacturing in the country. Canadian manufacturing companies tend to have limited volume and fewer economies of scale. Design is perceived as a luxury. Many manufacturers either get their products and designs from other divisions of their company, if they are multinational, or "knock off" designs from competitors in other countries.

Table 3-1: Summary of Challenges and Opportunities

Sector/Sub-sector	Economic and Market	
	Challenges	Opportunities
All Design[1]	• Increasing cross-border and global competition • Traditional markets in decline • Lack of marketing and exporting expertise to compete internationally • Increasing client expectations for wider range of services	• Growing industries domestically and internationally • Penetrating traditional markets further • Developing multidisciplinary networks to provide full service
Design of the Built Environment[2]	• Decline in domestic construction industry • Positioning designers as prime contractors • Restrictions on practice	• Increasing activity in renovation, restoration, and reclamation, and downtown revitalization • Developing leisure, recreational, and resort complexes • Developing multidisciplinary networks to deal with acts and regulations
Architecture	• Increasing competition from U.S. • Expense of licensing in additional provinces and in states	• New service areas, such as commission reports and operations manuals, proposals for financing, design–build, and maintenance
Landscape Architecture	• Decline in grassroots environmental movement • Decline in government work in parks development • Developing profile in the area of sustainability	• Research-related projects • Reclamation, restoration, culturally sensitive design, cultural re-creation
Interior Design	• Strengthening image • Shoring up position in the marketplace relative to architects	• Consulting to organizations in the effective use of space for mobile workforces, and in productivity improvement through occupational health and safety and ergonomics • Disposal of potentially hazardous furnishings, such as carpets • Leasing and real estate advice, merchandising, relocation and facilities management
Communications Design	• Competing with audio-visual and information technology sectors for work in new-media markets	• Multimedia, web sites, interactive kiosks • Emerging electronic media market • Production of materials for TV, film, and interactive media • Assisting Canadian economy to adapt to information economy
Industrial Design	• Limited demand because of small-scale and branch-plant manufacturing in Canada	• Decentralizing of the design function by some multinational corporations • New service areas in marketing research and business planning • Growing markets in plastic products, surgical and medical equipment and supplies, and household equipment

Table 3-1: Summary of Challenges and Opportunities *cont'd.*

Sector/Sub-sector	Challenges	Opportunities
	Technological	
All Design	• Absence of entry-level positions for young designers • Managing implementation and utilizing technology to its potential • Staying current • Managing client relations and expectations	• Access to international markets and clients • Providing better and faster service • New ways of working with clients • Creating new products and services • Virtual production of designs • Reducing costs (both design firms and their clients) • New market opportunities in technology-related fields
Design of the Built Environment	• Increasing expectation by clients for lower fees • Manual operation of most of construction industry	• Increasing responsiveness to clients' needs through digitized information • Further advances in CAD technology • Computerization of mechanical systems of buildings
Communications Design	• Revolutionary change in production technologies	• Digitized communications
Industrial Design	• Revolutionary change in design and production processes	• Reducing time-to-market
	Social and Demographic	
All Design	• Saturation of landfill sites with products and materials • Increasing pressure to consider the needs of persons with disabilities and an aging population • More culturally diverse population with different needs	• Life-cycle costing, adaptive use, and recycling • Universal design of products, communications, and spaces
Design of the Built Environment	• Concern over waste of materials and energy in buildings and effects on environment • Corporate downsizing reduces need for office buildings	• Energy audits, and retrofits • Environmental impact assessments • Office designs for mobile workforce and home offices
Communications Design	• Public concern over proliferation of signs and billboards	• Communications products to address visual pollution concerns
Industrial Design	• Public concern with landfill sites and material waste	• Developing environmentally friendly products and packaging

At the same time, falling trade barriers and the increasing ease of cross-border and cross-national practice are signalling a potential for increased competition. Interviewees reported that U.S. architectural, landscape architectural, and communications design firms are working in Canada already and competing against Canadian firms in competitions. With the North American Free Trade Agreement (NAFTA) opening the doors for government procurement of services from the United States and Mexico, competition will increase for all areas of design.

➔ Moreover, each sub-sector is grappling with specific market challenges.

Built Environment

Positioning designers as the choice for prime contractor is a challenge the sub-sector needs to address. Many built environment projects go forward without the participation of professionals in the sub-sector; one interviewee indicated that more than 90 percent of building construction in Canada does not involve architects. Clients often use the capabilities of contractors and engineers to realize these kinds of projects, with engineers, primarily civil engineers, playing the biggest role in shaping the built environment. As one interviewee noted, "Their way of thinking about the built environment is institutionalized in regulations and legislation."

Challenges specific to each discipline within the built environment sub-sector include:

- **Architects** have a positive public image. They enjoy significant media coverage, and their clients generally have a high regard for what they do. Nevertheless, of all the design disciplines, architecture has suffered the most in recent years. Architects have had tremendous difficulty developing new markets. In part, the problem results from the licensing regimes that govern the practice, which vary by province. (A recent national initiative makes it easier for architects to work anywhere in Canada and even in the United States.) It also results from new delivery modes, such as design-build, construction and project management, which have changed the traditional role of architects on building projects.
- One of the biggest challenges facing the interior design discipline is to change its image. Many prospective clients think of interior design as only the embellishment or decoration of a space. Although more prevalent within residential design, the perception is also common in relation to commercial spaces. Public education needs to focus on the problem-solving process used to create a successful interior.
- **Landscape architects** have had difficulty positioning themselves to play a significant role in sustainability design. Engineers, whose main work formerly involved the design of infrastructure, are now involved in developing "greenways"; that is, in finding other kinds of uses for streets. Unfortunately, regulations have brought about this development. People tend to regard certification as an indication of competence. Thus, as an example, engineers may do grading even if they are not trained for it, while landscape architects, who have been trained, cannot do it because they lack the certification.

An overall challenge for landscape architects is to overcome the marginalization of the profession that has occurred because other professions have been more effective at marketing their services.

Communications Design

Because printing was, at one time, the only means of distributing communication and information in the business environment, it was associated with graphic design. Now that electronic commerce is being put into place, business-to-business communications and business-to-consumer communications will move from paper to screens. A new market is emerging, completely undesigned at present, in which communications designers need to place themselves.

Industrial Design

The primary challenge for industrial designers remains to develop awareness in potential clients of the value of industrial design. Industrial designers noted the low use in Canada of industrial design services by manufacturing companies. The study on the use of industrial design by manufacturers in British Columbia showed that of the 497 manufacturing companies contacted, only 52 (about 10 per cent) were users of industrial design. An aggressive marketing tactic being used by some industrial designers is to ask for a royalty on the sale of the product they design rather than, or in addition to, a fee for the design.

THE OPPORTUNITIES

Despite the uncertainty of the prevailing economic and market conditions, Canadian designers are uncovering numerous opportunities.

Many designers noted that clients are expecting design firms to provide an ever-wider range of services. Designers are marketing "complete design services," even if that means developing and managing a multidisciplinary team on behalf of the client. A potential opportunity for designers exists in partnering with management consulting firms to provide full-service consulting in the area of strategic performance improvement. As an example, Price Waterhouse's Change Integration® methodology includes an assessment of the organization's communication strategies and facilities, as well as the design of communications plans and of facilities to support organizational change. The expertise of designers is necessary to fulfill these requirements. In this regard, design is a function that will help businesses make performance breakthroughs.

The expertise that Canadian designers have in developing environments and products for extreme climates and a dispersed population has potential market value around the world. Canadian experience in R2000 housing, in telecommunications, and in specialized transportation such as mass-transit systems, the snowmobile, and short take-off and landing aircraft, already has demonstrated the commercial impact of context-specific design on the international marketplace. Canadian designers are leveraging these competencies in the design of:

- leisure, household, communications, and healthcare products;
- new-media and wayfinding systems;
- multi-use facilities, including malls, leisure and tourism facilities.

Consequently, Canadian designers are in an excellent position to take advantage of growing opportunities around the world in industries such as telecommunications, communications and entertainment, retail, and tourism.

▼ The next four years should see continued growth and change in world telecommunications and in telecommunications infrastructure. The well-established marriage of communications and computing will continue to move us towards the kind of interactive, multimedia services that we associate with the information highway. This scenario bodes well for the communications design sub-sector, with its expertise in new-media design.

Wireless communications will continue its rapid expansion (Financial Times, 1995). Wireless and long distance, and, soon, local telephony will place a new emphasis on design — cost, appearance, size, and functionality — as competitive factors. In handset design, size and ease of use are critical. Meanwhile, as governments recognize the link between telecommunications and development, the developing world is becoming a "holy grail" for the global telecommunications industry (Financial Times, 1994). The assumption is that wireless will be serving much of the developing world, where the need is for cheap,

basic, and reliable handsets. This prospect poses significant opportunities for Canadian industrial designers with their reputation for designing telecommunications products.

The Canadian telecommunications sector will continue to hold opportunities for communications designers and industrial designers. Revenues for the Canadian telecommunications equipment and service market are projected to increase over the next few years, with a compound average growth rate of about 5.4 percent (Frost & Sullivan, Inc., 1994).

- The U.S. market for communications and entertainment products presents tremendous opportunities for Canadian communications designers with expertise in software, and for industrial designers with strengths in leisure and entertainment products.

  In the United States, consumer spending on communications and entertainment products is projected to grow by nearly 7 percent annually until 1999, reaching US$323.7 billion. The strongest growth rate will be in interactive digital media, which includes educational software, video games, and home shopping. This sector is projected to show annual growth through 1999 of nearly 20 percent. Growth is triggered by personal-computer household penetration, which is expected to reach 45 percent by 1999 (Entertainment Marketing Letter, 1995).

- Retailers in 2010 will face an entirely new retail landscape. Breakthrough formats will have been developed, and new channels of distribution will be in place. New forms of delivery offering greater choice and convenience — for example, electronic shopping — will emerge. Developers need the services of designers to keep up with the changes.

  Competition will be fiercest in the most highly developed economies in the world, including Canada and the United States. Canadian retailers, just getting over the shocks of recent years — including the GST, free trade, and cross-border shopping — are bracing themselves for the biggest threat of all: American retailers on their turf. Several U.S. retailers are here already, and more will be arriving (Management Horizons, 1995).

  On the one hand, this prospect presents limited opportunities for Canadian designers. Generally, these retailers have standard layouts that require little in the way of local design services, other than advice on local regulations. On the other hand, Canadian retailers will have to shape up to compete. For example, Hudson's Bay Co., the T. Eaton Co., Canadian Tire, and Shoppers Drug Mart are spending more than a billion dollars to sharpen their image (Ottawa Citizen, 1995). However, the greatest opportunities for designers who work in the retail sector, especially designers of the built environment and communications designers, lie outside of Canada. Their expertise in the design of multi-use facilities and wayfinding systems will be a competitive advantage.

  China and India hold the greatest promise for retail development. By the turn of the century, China will have more than 430 million people between 25 and 34 years of age. By 2010, 1.4 billion people will make up 414 million households. About 20 percent of urban households in China have radios, 17 percent have televisions, and fewer than 5 percent have refrigerators. Foreign retailers have recognized the major short-term opportunities for retail development in China: department stores that bring together basic goods for an increasingly middle-class population, and specialty chains targeted at wealthier segments. By 2010, in the affluent special economic zones, development will shift to category specialization — hard goods, soft goods such as clothing, and food.

  In the twenty-first century, India will become the largest consumer market in the world. By 2010, the population will total nearly 1.1 billion, having "grown a United States" in 17 years. The retail structure is quickly becoming more international, sophisticated, and

impersonal, thanks to increases in geographic and economic mobility being fuelled by an aggressive trade liberalization program. If economic reform continues, India will see significant consolidation and a movement to larger-scale retailing (Chain Store Age, 1993).

- There are significant opportunities internationally for Canadian designers to apply their talents in the development of accommodation and leisure complexes and in the design of related products. The World Travel and Tourism Council expects the tourism industry to generate nearly US$8 trillion in output worldwide by 2005. Real growth in the industry will climb by 79 percent over the next decade, with the majority of new spending and jobs in Southeast Asia and China. Asia Pacific Economic Corporation reports that Asian travel and tourism will account for 24 percent of the world travel industry's market share by 2005 (Korea Economic Daily, 1994).

  On the homefront, Canada's tourism industry is expected to grow between now and 2000, signalling potential opportunities for designers in the built environment, in particular, for those in the development of accommodation and leisure complexes. The economies of many of Canada's major travel markets recovered in 1994; in most cases the recovery resulted in strong growth in travel to, and spending in, Canada. The weak Canadian dollar has also boosted travel to Canada, especially from the United States, Europe, and Japan. Overnight travel from the United States is expected to increase annually by about 3 percent from 1995 to 2000. European visitors, particularly those from the United Kingdom, France, and Germany, are projected to increase visits to Canada at an annual growth rate each of 4.2 percent, 9.4 percent, and 7.1 percent. Travel from Japan is expected to grow at a much stronger pace, with an average annual percentage increase of 10.4 percent to the year 2000 (Industry Canada, 1995).

Taking advantage of international opportunities requires a major commitment of scarce resources, significant research, and extensive planning. It requires that a thorough analysis be conducted of the political, economic, business, regulatory, and sociocultural environments of the target marketplace. Besides facing trade and entry barriers, designers may encounter attitudinal barriers towards foreign expertise that can hamper efforts significantly. As one designer noted, "Americans like to deal with Americans."

Entering a new market requires considerable precision in market research, planning of effective organizational modes and promotional programs, perseverance in tracking potential clients and projects, and assessments of the competitive environment (Royal Architectural Institute of Canada, 1987). Because most design firms are small, they do not have the marketing and exporting expertise in-house to market their services directly in the international marketplace.[3]

Nevertheless, Canadian design firms have found ways to compensate for this deficit. Some have formed project-specific joint ventures with design firms from the particular international market, while others have hired people in the target marketplace to identify opportunities. Still others have established networks of multidisciplinary, international consortia that present "ready-made teams" to potential clients (a pattern also found in the United States and the United Kingdom). Finally, some firms have been successful in establishing branch offices in other countries. Ultimately, different strategies may suit different firms, different countries, and different design situations.

- Yabu Pushelburg, an interior design firm in Toronto with significant overseas work, reported that in Taiwan and Japan the firm works with affiliate design companies. The role of the affiliates is administrative. They flag problems at the site, provide translation services, and provide knowledge of the culture and of local building codes.
- Gad Shaanan Design Inc., an industrial design firm in Montreal, has a branch office in Chicago that is responsible for marketing in the United States. The firm also has an association with a design firm in Taipei; each firm provides the other with leads, and

they collaborate on some projects. All design work is done through the Montreal office.

- Smith Carter, an architectural firm in Winnipeg, is developing a number of partnerships in various markets. For example, it is associating with a firm in Mexico to develop opportunities there, and is exploring an opportunity to work with a large design–build firm in Japan.

➔ Even more opportunities exist for each of the sub-sectors specifically.

Built Environment

Future markets and services for the sub-sector will relate closely to society's changing needs and to changing economic conditions. Opportunities will become available in the revitalization, renovation, and restoration of the existing stock of buildings. In fact, designers of the built environment have seen increased activity in recent years in renovations; in conversions of buildings from one use to another (for example, from commercial to residential buildings); in leisure and recreational facilities; and in the restoration of heritage sites and wetlands. Designers also pointed to opportunities in waterfront development and downtown revitalization. As members of the baby-boom population age, additional opportunities may arise through the development of leisure, recreational, and resort complexes.

Although many designers are skeptical about the future of the construction industry, 1994 saw a reversal of the downward trend in construction revenues that characterized the previous four years.

▼ Total demand in the Canadian construction market is forecast to grow at an average annual rate of 4 percent over the balance of the decade. A significant share of this demand will occur in residential and commercial buildings, and in new oil and gas and electric-power structures. Increases in commercial buildings will outpace those of any other major structure type. New construction involving major renovations and conversions is projected to account for a sizable majority of demand in the residential markets, while investments in office buildings, hotels, and factories are forecast to account for 40 percent of non-residential market activity. Though contributing very little to total demand in the non-residential market, construction of mines is expected to grow at a significant rate (Indian and Northern Affairs Canada, 1995).

The regulatory framework for construction in Canada, which is often criticized as cumbersome and overly bureaucratic, has in some instances created work for the sub-sector. Planning approvals for projects often require developers to provide documentation, including technical information, about environmental impact, service, and urban design issues. These submissions, and related testimony before committees and boards, are often prepared by designers in this sub-sector.

Some firms in this sub-sector are finding ways to deal with the various acts and regulations that govern their work by joining with other professions to develop ideas and practices.

- EDM Ltd., in Halifax, is one example. Combining landscape architecture, engineering, and real estate development, the partners bring a unique perspective to the resolution of land problems. The fact that 30 percent of EDM's work is in areas where no other firm is working is in part the result of having an engineer's stamp.
- Smith Carter, in Winnipeg, has established a building-enveloped division to address changes in building usage and technology. New opportunities have resulted from the firm's expanded capabilities.

Specific opportunities for each discipline in the built environment sub-sector include:

▼ **Architecture** — Architectural practice has been evolving into new service areas. Among the opportunities noted by interviewees are: developing commission reports and operations manuals; helping

clients structure proposals for financing; facilities planning and management; maintenance, project management, and building inspection; energy audits; retrofit; and community revitalization. Architectural students recognize that opportunities exist where professional accreditation is not necessary — for example, as architecture critics.

Energy management is a growing concern in Canada. The Federal Building Initiative, which focuses on the retrofiting of federal government buildings to conserve energy, holds potential for architects. This field will offer opportunities for research and for the application of that research to design activities and products. The epidemic of sick buildings in Canada and elsewhere also offers opportunities, but architects will have to compete with other professionals such as engineers and contractors.

- **Interior design** — The glut of corporate and commercial space has provided interior designers with opportunities. Economic conditions have led to increased corporate moves as clients downsize, relocate to smaller or less expensive space, or renovate and reorganize space. Building owners are trying to keep tenants, or to lure tenants away from other properties, by offering interior design services. Designers also noted the tremendous work to be done in low-rise renovation.

  Interior design services are expanding. Increasingly, interior designers are being asked to provide leasing, real estate, and merchandising advice. Facilities management opportunities are expanding.[4] And there are growing opportunities for interior designers in occupational health and in ergonomics, as well as in asset management. Growth in the health-care sector is providing interior design work, with the focus shifting from hospital care to a broad range of facilities, particularly those for the elderly. Barrier-free requirements are becoming more rigorous, providing an opportunity to refit spaces. These trends will affect the makeup of interior design firms, spawning more multidisciplinary firms or alliances among firms covering the range of expertise.

- **Landscape architecture** — Landscape architects are becoming more involved in research-related projects, including landscape research, archaeological investigations, restoration, landscape as part of the healing process (in cases of physical and substance abuse), and re-creations of natural environments such as wetlands and habitats. Government environmental policies have created opportunities for landscape architects in environmental impact assessments and in the reclamation and decommissioning of mine sites. This latter area is experiencing increased activity: worldwide, 1995 saw an increase of 21 percent over 1994 in mineral exploration activity; and exploration spending in Canada was up by 17.5 percent in 1995 over 1994 (Northern Miner, 1995). Over the 1996-98 period, more than 30 mines are expected to open in Canada. All new sites will require an environmental impact assessment as well as a decommissioning plan, including reclamation activities. About 10 mines will close in 1997 and 1998, and a few more each year from 1998 to 2000 (Natural Resources Canada, Minerals and Metals Sector).

  Market opportunities are developing in the use of artificial wetlands to treat waste water, in the rehabilitation of the environment, and in the retrofitting of communities to meet the needs of aging populations. First Nations are opening up as a market for design services; an example is the integration of cultural and historical elements into on-reserve housing. This service of helping to re-create a culture can extend to rural, northern, and ethnic communities. To provide such services effectively, however, landscape architects will need a knowledge of these cultures.

  Other opportunities are in park renovations for different uses; heritage landscape (landscape architects report that this area has hardly been touched); tending of aging vegetation; tourism; and finding of ways to get people into the landscape without devastating it. There are also increased opportunities in the "middle" landscape — the edges of the urban centre. Students in the landscape architecture

program at the University of British Columbia noted opportunities in ecology and forestry.

Communications Design

The traditional graphic design work — designing for paper — will continue to play a significant role in the future of many communications designers. However, the primary growth area for communications designers is in designing for screens.

Advances in information technology have increased the demand for services in the sub-sector. Communications designers have expertise in communicating messages through various visual media; some designers are exploring the development of communications tools using new technologies such as multimedia, web sites, and interactive kiosks.

The information economy presents major opportunities for communications designers. The opening up of the electronic-media market and the need for visual and information design expertise create an increased demand for design services. Huge new markets are taking off in networks, new media, and the information highway, bringing new software interface and screen layout as a result of expanded capabilities of computer graphics displays. But the field is so young that business processes are still evolving and contacts are only just being made. The audio–visual and information technology sectors are also interested in controlling these new areas. If communications designers don't react quickly, they will find themselves working as subcontractors rather than as promoters and producers.

Major software companies are starting to integrate designers into the process as early as possible. Some types of software are being presented to investors as storyboards of screen designs before even a single line of code has been typed. The two disciplines of software and communications design must rapidly learn to work together; it is a matter of staying competitive. Designing for electronic media is a significantly new area of expertise for communications designers, and design education has been slow to adapt to these new media. As the Canadian economy makes the transition to an information economy, communications designers will need a large part of this new base of knowledge.

The two disciplines of software and communications design must rapidly learn to work together; it is a matter of staying competitive.

New technologies are presenting communications designers with expanding opportunities to practise and use their skills. The tremendous growth in the entertainment field and the production of materials for television, films, and interactive and other media are areas where many communications designers have successfully found exciting and remunerative work.

Finally, communications designers are becoming involved more with their clients at the strategic level, designing communications programs and monitoring communications materials to ensure corporate objectives are being served.

Industrial Design

A trend that may have a beneficial influence on this sub-sector is the move by some large multinationals, such as Xerox, to decentralize their design function. Such a trend may present opportunities to Canadian industrial designers if they can meet the standards that these companies require.

Some industrial designers are expanding their services with a view to adding value at the front end of the design development process. For example, some designers provide marketing support and business planning to clients who have little capability to develop the appropriate strategies to market their own products.

- Gad Shaanan Design Inc., in Montreal, is one such example. As part of its value-added approach, the firm also conducts market research to test new ideas for clients.
- Kerr Keller Design Inc., in Toronto, has established a wide range of clientele and product types in an attempt to recession-proof its company. The firm provides full service, from concept and production

through to distribution if necessary. To cut costs and increase competitiveness, Kerr Keller focuses on reducing the cycle time from concept to market.

- Kruger International (KI), in Pembroke, Ontario, in an attempt to win a major client, re-created one of the target client's store aisles and placed KI's own products on the shelves. The firm was able to show the target client how KI products would fit in with other product lines.

Worldwide markets in health-care products and plastic products present significant opportunities for industrial designers. As well, the outlook is positive for Canada's office furniture sector.

- The worldwide market for healthcare products will continue to expand over the next several years, although at a more modest pace than in the past. Growth in total sales of healthcare products will average 4 percent per year until 1997, to just over US$380 billion. Medical devices and equipment will be the fastest-growing sector overall; sales will expand 10 percent per year, to $68 billion in 1997 (Decision Resources Inc.). This expansion will provide opportunities for industrial designers.

- Recent data indicate that the Canadian plastics industry is in full recovery. Over the 1995-2000 period, shipments are expected to grow at an annual average rate of 6.7 percent (Society of the Plastics Industry of Canada). Many members of the society predict that shipments will double in size by the year 2000, partly through boosts in exports (Plastics News, January 1995). Such growth signals opportunities for industrial designers in plastics products and packaging.

  Continued growth in the U.S. plastics industry is expected in the short term, although it will be slower than in recent years. A report by the Livingston equipment financing company predicts 5.3 percent, 6.9 percent, and 5 percent growth in 1996, 1997, and 1998 for real plastics shipments. Electronics, healthcare, and household products are the key end-product markets that will lead the growth in coming years (Plastics News, July 1995).

  Increasing recycled-content legislation in the United States, improvements in recycling technologies, and further product and applications development are among the major factors that will contribute to a forecast 13 percent per year growth in U.S. demand for recycled plastics through to 1998. Packaging uses will remain the largest market for recycled resins, based on consumer demand for environmentally friendly packaging and more cost-effective technologies that allow the closed loop recycling of materials in the food and beverage industries (Eco-Log Week, February, 1995). This scenario suggests opportunities for partnerships between industrial or communications designers and landscape architects. Landscape architects would bring a knowledge of the impact of materials on the environment at every stage, from inception to the landfill site.

- Canada's office furniture sector has been declining since the mid 1980s, but with the decline in the Canadian dollar the sector is starting to recover. The outlook for the remainder of the decade is favourable. Growth in the white-collar, service-producing sectors will probably continue and should help maintain the demand for office furniture. Also, as conventional furniture is replaced, the increased use of systems furniture should affect sales. Systems furniture and computer furniture will capture a growing proportion of the market. Furthermore, the home office will provide significant growth potential for furniture manufacturers, with an emphasis on products that are low-priced and ready to assemble. Knock-down furniture is also gaining a foothold in the commercial market (Ontario Ministry of Economic Development and Trade, 1993).

Technological Changes

Technology has changed the work in the design sector.

By all indications, the most significant technological impact for the design sector is computer technology. It is transforming the world from word-centred to image-centred (Newman, 1994).

Many of the traditional skills that were once at the heart of the design process have been replaced by computer technology. Entire job categories in the sector, such as draftspeople and paste-up artists, have disappeared, or the roles have changed significantly. In an automated architectural office, 20 people can do the work that formerly required 30 architects.

These changes have affected the training and internship process in the sector. Traditionally, after graduation, young designers entered the profession by performing some of the more basic tasks in the design process. Architects, for example, drafted and copied drawings. Communications designers did layout or paste-up work. Industrial designers developed models. The end result of this automation is the absence of many entry-level activities and jobs for young designers.

For the most part, designers still develop the conceptual design by hand. Further development of the design is performed on computer. Where technologists were once employed to develop drawings, designers are now more likely to perform that work. Designers in the built environment sub-sector reported less of a need now for architectural and landscape architectural technologists. At the same time, with increasingly complex information systems, hardware, software, and document management requirements, many design firms have expressed a need for information systems technologists.

With information technology and networks, designers will become more involved in process design. There will always be a part of the market that is close to the actual production of the final piece, but much of that function soon will be transferred to non-designers (or even to computers) working with templates or rule-based systems prepared by designers who can design processes.

Built Environment

- Computer technology has changed the way that construction documents are prepared. Many laborious and repetitive tasks have been eliminated, resulting in fewer hours required for certain parts of the design and documentation process and a corresponding expectation by clients of lower fees. At the same time, clients are demanding greater detail and are more likely to ask for changes, which are made easier by the technology. The level of detail and the number of changes that designers are asked to make to designs can add hours, and clients often are less quick to appreciate the time required to make changes.

  The precision of detail is also adding pressure to the designer's responsibility. Previously, contractors knew that even if something was not clearly written, they had to make provisions to complete the tasks according to general principles. Now, with more detailed documents coming directly from CAD systems, less opportunity exists for interpretation, putting more responsibility on the designer.

Communications Design

- The very basis of communications design has shifted in the last 25 years as a result of new technologies. The originator of the communication often "designs" the message. Although communications designers often dispute the worth of this effort, it is a fact of life in this digital age. It represents both a threat and an opportunity.

  On the one hand, clients may not be willing to pay for an "expert" to do what they believe a piece of software can accomplish. The interviewee from Singapore noted that the ability of graphic software

to do so much "design" work has resulted in a new perception of design. "People have begun to think that the computer can do design work and, therefore, that everybody can become a designer with a computer. It is very difficult to convince people that the skills of the designer work the computer." On the other hand, designers can offer value in strategic communications, development of templates that use new technology, and training and monitoring of communications materials to ensure that corporate objectives are being served.

Industrial Design

- The prototyping process, once a mainstay of industrial design practice, has become *quick-prototyping*, in which computer-aided processes, such as stereo lithography, have revolutionized — in time and cost — the production of models and prototypes (Houlihan, 1993). This technique allows designers to "mock up" ideas and innovations and test them against the criteria of usability and the ability of the product to satisfy customer needs. By using quick prototyping, designers can make changes to direction or details before clients have to make major investments in tooling, construction, or production. This translates into a significant reduction in time-to-market.

Technology has changed the working environment as well, and will continue to do so in the future.

Many designers reported that when drawings were rendered by hand, colleagues frequently stopped to make comments and suggestions while the design was in progress. They suggested that the computer has isolated work in the sense that drawings are no longer so readily visible. In other cases, designers reported that the computer had facilitated the sharing of work by making files available to anyone. In numerous design firms, technology has created a schism, with the "older" designers continuing to work by hand, and the "younger" designers utilizing technology.

Telecommunications have had an even greater impact on the day-to-day operations of design firms. Designers who have been in practice since before computers and fax machines were commonplace — about nine years ago for design firms — suggest that the capacity to transmit images via phone lines most affected their practices. Design firms became more an extension of their clients' operations. The advent of multimedia networks will only tighten this link. Designers will be asked to interact directly with their clients' databases and technology: industrial designers will send data from their CAD systems directly to the production plant, and communications designers will relay data to the printer or server at corporate headquarters.

As designers discussed the impact that technology has had on their work and on jobs, they acknowledged that decisions to adopt technology often are made with little thought about, or understanding of, the potential effects. As a result, software or hardware, for example, are often underutilized.

Staying current with new software and hardware upgrades is becoming increasingly challenging.

Clients are more sophisticated and knowledgeable, and they expect design firms to have the latest technologies. Many design firms are small and undercapitalized and lack the resources to be early adopters of the newest technologies. Thus, the larger design firms often gain the technological advantage.

Clients often expect computerized drawings or prototypes, even when the drawings or prototypes might not be efficient or cost effective. It is becoming more difficult to manage clients' expectations.

Knowing where technology is heading also presents a major challenge. Some design firms have worked with suppliers or manufacturers as Beta sites for new technology, particularly software, 3-D imaging, and virtual reality. Those firms have the distinct advantage of being able to implement such technology quickly. As an example:

- EDI, an industrial design firm in Toronto, serves as a test site for Pro-Engineering, a powerful product-engineering and design software that has become an industry standard.

Technological change is not limited to information and communications technology.

Designers must keep up with changes in materials. Until now, however, little innovation has been seen in materials technology. By the time a product is brought to market, about five to seven years, it no longer is new. Because of possible liability, manufacturers find it difficult to convince the market to use new products. For example, architects and interior designers can be held liable for specifying materials that, if used improperly, prove a health or safety risk. The failure of new products to be adopted and utilized may in part be due to a lack of education and training. Some manufacturers and manufacturers' associations hold focus groups to keep designers up-to-date on materials research and development, but such initiatives tend to be ad hoc.

The biggest change for designers will be in smart materials, which will alter product design and development radically. Smart materials change shape, colour, form, phase, electric and magnetic fields, optical qualities, and other physical characteristics in a predetermined response to external stimuli. Designers will be able to use smart materials to simplify products, add features, reduce material use, and reduce the expense of product specialization (Canadian Manufacturers' Association, 1995).

Evolution in "soft" technologies (management processes and standards) is ongoing. One initiative, ISO 9000, is a challenge to the design sector in Canada.[5] ISO 9000 certification is becoming a criterion for prequalification for the provision of design services, especially on some government and international projects. Yet few Canadian design firms are certified or are in the process of being certified. A large barrier is the cost of the certification process. One source indicates that it can be as high as $100,000 for a firm to achieve certification (RAIC).

- Byrne Architects, in Nova Scotia, was the first design firm in Canada to receive ISO certification. Although certification was an expensive undertaking, the senior partner at Byrne now believes that it could have been achieved at a lower cost.

Perhaps a more relevant consideration than cost for owners of design firms is the necessity for ISO certification. For example in Quebec, starting in 1997, only those architectural firms that are ISO 9000 certified will be eligible to compete for provincial government work (RAIC).

New technologies have great potential to create and provide new services and products, and to reduce costs.

In light of trends in the emerging Canadian and world economies, the tremendous growth in information technology represents probably the single largest area of opportunity for the sector. Fortunately, designers have always been involved in the transformation of technology and basic research into products and services that have direct benefits to consumers. Although Nicholas Negroponte may be mildly hyperbolic when he declares in his book, *Being Digital*, that the future is about "bits not atoms," it is true that the continuing digital revolution is ushering in totally new ideas about what products and services are developed, how they are produced, and how they are marketed and distributed.

The study found instances where designers are creating value for their customers by expanding the applicability of technology. Some examples:

- W.M. Salter and Associates Inc., an architectural firm in Barrie, Ontario, that has pioneered the "paperless office," is utilizing information created in a powerful CAD system to create marketing videos and promotional materials for its clients.
- Communications designers are removing costs for their clients by transferring digital images and files not only to printers, but also to advertising agencies and post-production houses.

Opportunities for even greater efficiencies are on the horizon. For example:

- Most of the construction industry is still run manually. Information on zoning codes and sites, for example, is not digitized, so designers must input information into CAD manually. This information eventually will be available in digital format — for example, through geographical information systems — leading to increased efficiency for those in the built environment sub-sector.
- Paper will still be present but will come from a laser printer connected to a network, not from a printing press. Offset printing will serve to more specialized markets (for example, packaging, posters, coffee table books). With the introduction in 1995 of digital presses and high-speed colour laser printers in most major Canadian cities, the revolution is under way. For communications designers, the change means instant production of paper-based products.
- Perhaps the most powerful method for industrial designers to reduce time-to-market is concurrent design or engineering. Concurrent design allows companies to shorten the product development cycle for new products while continually improving existing products and production processes. For example, it allowed Ford to go from concept to production of its new Mustang in a little less than three years. In the past, the project would have taken five years.

  The concept of concurrent design is about to take a giant step forward. Reconfigurable processes will allow virtual design, based on improved communications among design, engineering, testing, and manufacturing systems, as well as the ability to integrate fully the consumer into the design development process (Canadian Manufacturers' Association, 1995).

Telecommunications will allow geographic markets to open up and, through better use of network capacity, will encourage alliances and collaborations among designers, other members of the design team, and clients.

- As just one example of the "reach" of new technologies, an urban planner hired by the Canadian International Development Agency was able to resolve the problem of where to locate a well in an African village — without ever having to leave his office in Toronto.

Networks such as the Internet can provide links between designers and their markets and suppliers, access to educational and professional development programs, and opportunities to participate in research and development.

- The Faculty of Architecture at the University of Manitoba is investigating the potential to develop and share courses via the Internet.

For designers in all disciplines, the growing opportunities in technology-related fields include:

- entertainment-related industries, special effects, and set design and decorating;
- design of computer interface for software and web pages;
- design of products and services for telecommunications; and
- design associated with virtual reality installations for both training and entertainment.

However, few designers have evaluated these opportunities fully or have taken the time to retrain for digital transformation. Canada's designers must react rapidly, or international design firms that are already investing in these areas will be as close as a client's phone or network.

Social and Demographic Changes

Designers are under increasing pressure to design products or to use materials that are recycled or can be recycled, that are safe and environmentally benign, and that use fewer resources.

Pressure may be mounting on designers to take legal responsibility for their designs and the materials they specify. In Canada, architects are liable for the health and safety of the public, and in the United Kingdom new regulations place responsibility on interior designers for the health and safety implications of their designs. According to the Worldwatch Institute, at least 30 percent of the world's office buildings are "sick," causing widespread illness and absenteeism.

In addition, significant public outcry has been aimed at the waste of materials and energy. Sustainability, which implies a long-term if not an infinite condition, is becoming the watchword of the emerging economy. Designers in all areas are affected.

- The use of air-conditioning, and of steel, concrete, and other materials that consume large amounts of energy to manufacture and transport, have made the modern office block one of the world's biggest polluters. Building codes are not keeping up — a situation that poses a challenge for designers in the built environment.

  Computerization of the mechanical systems of buildings will facilitate energy conservation and improve the health of buildings by simplifying monitoring, switching, and control.

- Similarly, "visual pollution," which has caused many municipal governments to develop strict regulations on signage, forces communications designers to be innovative in sign design.

  Communications designers also need to influence clients to rely less on paper as the primary means of communicating messages and information.

- Landfill sites are becoming saturated. Industrial designers must find more efficient ways to design and package products that use less material. Collaborating with landscape architects may lead to some solutions. Life-cycle costing is one way through which industrial designers and landscape architects can add significant value to their clients in the design development process.

Until now, design's role in the environmental arena has been reactive; the cleaning up of industrial discharges is one example (Burall, 1991). Many designers concede that they need to take greater responsibility in considering the impact of their designs, including the materials they specify, on the environment. The future will see design playing a significantly greater proactive role, and the act of designing will be conducted with greater consideration of the environment in the first place. The introduction of an ecolabelling scheme in Europe and the use of life-cycle analysis are part of this proactive strategy. In the meantime, designers have noted, without legislative requirements it is difficult to convince clients to buy into the "reduce, reuse, recycle" philosophy. Regardless, a few designers have decided that they will target clients who share their concerns for the environment. Those designers will find a burgeoning market for their talents.

- The world market for the environmental industry is growing rapidly and is expected to reach $600 billion by the year 2000, with the U.S. market alone accounting for $200 billion. The Canadian market for environmental goods and services is forecast to grow to $22 billion by the year 2000, from $11 billion in 1994. Between 15 and 20 percent of Canadian environmental-industry companies either are exporting or are export ready. Currently, Canada exports $1 billion in environmental goods and services annually, with the U.S. market accounting for 80 percent of these exports. Service firms represent about two-thirds of the industry, with manufacturing firms representing the other third.

  The fastest-growing markets during the next five years, with growth estimates of 15 percent per

year, are Latin America, Southeast Asia, the Pacific Rim, and central and eastern Europe. The market in China alone is estimated at $35 billion over the period 1994-2000 (Industry Canada). For landscape architects and industrial designers, this outlook holds significant opportunities in the areas of life-cycle costing and reduction of costs of products through maintenance and sustainability.

Interviewees from Finland, Germany, France, Japan, Spain, and Taiwan all noted that environmental issues represent one of the most important challenges for designers around the world. They see design as a means for improving living conditions without creating unnecessary consumption.

- The interviewee from Taiwan indicated that an important task for the design sector there is to develop the concept and methodology of green design and packaging for Taiwan's industry as the sector's contribution to the protection of the global environment.

Designing spaces, products, and communications for a wider set of users is becoming increasingly important.

The idea that design can embrace a large group of users is compelling. Two examples of designs include wider door openings for wheelchair accessibility, and designs that address the special problems of the elderly. Many products serve people who are severely disabled or impaired, but few designers have focused on people with partial limitations.

- Lee Valley Tools, in Ottawa, is an impressive example of a company that designs all of its tools with the widest set of users in mind.

Generally, however, designers have tended to ignore the needs of these end-users. As a result, governments have had to legislate access to public buildings. There is speculation that increased legislation, similar to the American Disabilities Act, may be forthcoming.

Social pressure and government legislation have opened new areas of opportunity. There is a growing need for researching and designing effective wayfinding signage, accessible and usable consumer products, and commercial and residential environments. Designers who have developed an expertise in this niche could benefit from the growing demand for "universal design" based on the changing demographic picture of the Canadian population.

Canada's public and private sectors will continue to restructure and downsize.

As companies restructure, and with the growing "sandwich generation" (people who have both parents and children to look after), more and more Canadians will be working out of their homes. The demand for office space will continue to decline. Some designers may be able to develop niches in designing spaces and products for home offices and interfaces for the corporate network that will appear in virtual corporations. The new sector is called "SOHO," (small office/home office).

The "face" of Canada is changing.

The major sources of immigration to Canada are Hong Kong, India, the Philippines, and mainland China. Immigrants from these areas bring different sets of cultures, values, and requirements than earlier immigrants brought from Britain and the rest of Europe. Designers need to be aware of these differences when posing design solutions for spaces, products, and communications.

One U.S. report (Woodhuysen, 1990) proposes strategies for addressing the issue of designing for different cultures. First, there is a need for greater design collaboration, including an increased integration of the user in the design process. Second, designers must have an appreciation for the particular cultural context of the home country, for example, the concept of family. Third, designers need better knowledge of time-use trends — that is, time spent at work and time spent on leisure activities.

On the whole, Canada's changing cultural fabric presents opportunities that designers can then transfer to international markets.

3.2

REGIONAL CHALLENGES AND OPPORTUNITIES

Although this report broadly focuses on the Canadian design sector, distinctions based on geography mean that, in the end, there is no single representation of Canadian design. Geographic location also spawns different strengths and unique challenges and opportunities. Table 3-2 provides a summary of the specific challenges and opportunities for each region.

Atlantic Region

POSITION OF DESIGN

The period following World War II signalled the start of the evolution of design in the Atlantic region. The burst of construction during the 1950s and 1960s focused attention on the role of architectural design. An increased awareness of the architectural program at the Technical University of Nova Scotia (TUNS) in the 1960s and the introduction of a degree-granting program in visual communications at the Nova Scotia College of Art and Design (NSCAD) in the late 1960s increased the recognition of design, particularly in Nova Scotia, by setting a context for the use of design services. As a result, as graduates of TUNS and NSCAD started their own practices, a growing community of designers developed in the 1970s and 1980s.

As mentioned in Chapter 2, Design in Business Nova Scotia, a group of people representing the full range of design professions as well as education and business, has undertaken the development of a strategic plan for the advancement of design in the region.

MARKETS AND MARKET OPPORTUNITIES

Because Canada's Atlantic region has the smallest population of any region in the country, the market for design services is relatively limited. However, the strong regional identity can be an advantage to local designers competing with firms from outside the region for work in the region. In addition, the design community is small and designers know one another. On the one hand, this situation can present the kind of challenge observed by one interviewee, who noted, "We try to be careful that we don't step on friends' toes." On the other hand, it readily allows designers to form multidisciplinary teams to meet the needs of design clients.

A number of large organizations in the Atlantic region employ designers or are potential clients for design products and services. Still, without a strong manufacturing base, the demand for industrial design is relatively low. Opportunities do exist in small-scale craft-based and high-tech industries.

- A prime example is Grohmann Inc., of Nova Scotia, which designs and manufactures specialty knives. Grohmann has its roots in metalsmithing. It owes much of its success to its attentiveness to customers' ideas for product development.
- Paderno Ltd., of Prince Edward Island, expanded its market by redesigning its professional cooking products for everyday use.

Provincial governments in the Atlantic region have traditionally been large consumers of design products and services, particularly in the area of design for the built environment. But fiscal restraint and downsizing have led to fewer opportunities. Communications design appears to fare best of all the sub-sectors, thanks

Table 3-2: Summary of Regional Challenges and Opportunities

Region	Challenges	Opportunities
Atlantic	• Small local market • Limited manufacturing • Reduced government spending	• Innovation through small-scale craft-based industries • Proximity to U.S. and European markets
Quebec	• Diverse market of small and medium-sized environments (SMEs) means designers need a wide range of skills • Requirement for ISO certification for architectural firms	• Relatively strong government support for design • Involving the business community in applied research • Willingness of SMEs to use local designers, when they use designers • Developing international reputation in software development • Hospital construction
Ontario	• Competition from U.S.	• Strong base of resources to support designers • Proximity to U.S. design centres • Headquarters for many Canadian companies and Canadian operations of many multinational corporations • Emerging entertainment industry • High-tech centre of Canada
Prairies	• Limited manufacturing base • No single design centre • Government in-house design services leave fewer opportunities for private firms to work in government	• Developing transportation and distribution infrastructure • Telecommunications and call centres • Emerging market in First Nations work • Exporting of hospital design services to U.S. • Transportation and distribution infrastructure for mid-continent trade corridor
B.C.	• Resource-based economy limits design opportunities • Major economic swings	• Emerging markets in the environment, tourism, and entertainment sectors • Proximity to the Pacific Rim • Distinct market in the Asian community • Strong immigration • Emerging small-scale, niche market manufacturing base

perhaps to the reputation of the Nova Scotia College of Art and Design, a few strong communications firms, and a larger target market.

Proximity suggests that opportunities exist in the United States and Europe, but tackling them requires that design firms already have a strong local base. Developing such a base can be difficult. The firms that have been successful in international markets have partnered with others, such as EDM Ltd., or have a special market niche, such as Grohman Inc.

- EDM Ltd. created and licensed a technology for sewage treatment, which is marketed under a different company and is used to generate work for EDM. EDM has sparked interest in the United States and is also investigating opportunities in Central America, South America, and South Africa.

Quebec

POSITION OF DESIGN

Quebec's position in the Canadian design sector is unique. In Quebec, government has taken a leadership position supporting design. As an example, the Picard Report in 1986 identified design as one of the seven axes for economic development in Montreal.[6] As a result, the City of Montreal became the first city in Canada to appoint a commissioner of design responsible for undertaking initiatives to support the development of a design culture in a municipality. The Picard Report also resulted in the establishment of the Institute of Design Montréal (IDM) in 1989, with the mandate to stimulate a design culture, to promote design as an economic tool, and to stimulate designer activity locally and internationally. One of the most innovative programs of the IDM is one that funds joint projects between designers and industry in applied research.

Quebec is home to a number of other design organizations, such as Liaison Design and Forum Design. Although these organizations have different mandates and structures, the overall goal is similar — to advance the utilization of design. (Chapter 2 includes more information on these organizations.) Further, there is a Quebec-based association in each discipline.

Synergy exists among the municipal, Quebec, and federal governments, resulting in a coordinated design policy and in funding for design organizations. Consequently, there is a strong design infrastructure in Quebec that has led to a high level of awareness of the value of design. Quebec designers have the benefit of a base of individuals, in both the public and private sectors, who are aware of the contribution that design can make — something not found in many other provinces.

In terms of policy, the Quebec government over the last decade has supported many innovative programs to encourage both the manufacturing and the design sectors. A program to commission designs for furniture for the Montreal Casino is one example of forward-looking government policy, as is the tax credit for industrial design R&D.

The Federal Office of Regional Development-Quebec (FORD-Q) also supports and promotes the use of design, particularly with small business. Through the IDEA program, FORD-Q provides financial and other support to small businesses developing new products or trying to integrate research, development, and design into existing operations.

MARKETS AND MARKET OPPORTUNITIES

The Quebec market, unlike markets elsewhere in Canada, is composed mainly of SMEs (small and medium-sized enterprises) with relatively few branch-plant operations. The SMEs are typically Quebec-owned and therefore more likely to employ/hire "local" designers than are the U.S. branch plants in Ontario, for example. SMEs generally have less capital to support design activities in-house and so turn to design-consulting firms for expertise and support. Serving a fragmented market made up of SMEs requires Quebec designers to have a wide range of design skills.

In the manufacturing sector, Quebec offers diverse opportunities for designers in the areas of sports and leisure, aerospace, transportation, and telecommunications, and, more specifically, for designing medical instruments, furniture, and kitchen and bathroom accessories. The Quebec design sector has distinguished itself through innovative and creative designs not only for local, but also for international industries.

- A particular market niche for industrial designers in Quebec is in specialized transportation and motorized leisure products, led by Bombardier Inc.
- Montreal is home to one of Canada's largest industrial design firms, Gad Shaanan Design Inc., which has developed a team of product designers, engineers, interior designers, communications designers, and transportation specialists to provide a range of services. The firm's strategy of concurrent design and multidisciplinary teams has helped it to develop a lucrative market in the United States and Taiwan.

Quebec is developing an international reputation in software development, with companies such as SoftImage and Discrete Logic targeting products to the design, communications, and entertainment sectors. These companies employ communications designers either directly or through consulting contracts.

As noted, architectural firms will require ISO 9000 certification to be eligible to bid on provincial government work. Smaller firms will be challenged to find the resources they needed for certification. On a brighter note, as hospitals are being converted to long-term facilities, significant opportunities are emerging in hospital construction. Work in the industrial buildings sector is providing opportunities for architects, although as sub-consultants to engineers.

Ontario

POSITION OF DESIGN

Ontario has the greatest number of designers in Canada. By virtue of the size of the province's design sector associations are bigger and stronger, making it easier for them to provide services to their members. However, the sheer size of the province has made it more difficult for smaller associations to serve their members.

The strong base of resources to support designers includes promotional organizations that provide lectures and present exhibits. For example, the Group for Design in Business established the Financial Post Design Effectiveness Awards exhibited annually following a well-attended awards event. Ontario is also home to the Design Exchange, Canada's largest design promotion organization. Ontario is the only province to have educational programs in each of the design disciplines. Overall, it is well served in terms of design education and professional development.

As discussed in Chapter 2, the Ontario design sector developed a strategy outlining goals and objectives for design sector initiatives.

MARKETS AND MARKET OPPORTUNITIES

The Ontario economy has gone through a devastating recession. It was especially pronounced for the design sector, as a result of the building frenzy of the 1980s that preceded the recession. The glut of the 1990s, with an oversupply of commercial and residential buildings, translates into scarce work for architects and a highly competitive situation for interior designers and landscape architects. Recent changes introduced by the Harris government are having a negative impact on firms involved in capital projects related to social development.

As the impact of NAFTA is felt, industrial designers may find opportunities opening up in the United States. Some designers may lose out to the centralized product development activities of multinational companies. However, if more manufacturing companies decentralize their design function, Ontario's industrial designers will have the most to gain.

Designers in southern Ontario are close to big design markets such as Chicago, New York, and Detroit. The headquarters of many Canadian companies are in Ontario, particularly in Toronto. This has its advantages for designers, since decisions tend to be made in corporate headquarters. International firms are more likely to have Canadian distribution centres in Ontario, and generally are more likely to use area designers for packaging redesign, a speciality of many communications design firms.

The Prairies boast the only multidisciplinary graduate design program in Canada.

New opportunities are emerging. Although publications and packaging work make up the majority of their work, communications designers are finding more and more opportunities in the multimedia field. Toronto is the site of an emerging entertainment industry — a field that has traditionally employed designers of all disciplines. Moreover, Ontario is home to Canada's "silicon valley north." Companies like Nortel Technology (formerly BNR), Mitel, and Corel are at the forefront of product and software development initiatives and employ a considerable number of designers.

Despite these opportunities, the presence of a large number of designers tends to keep fees below the levels of the last decade. Many designers are finding more lucrative work overseas. With a greater concentration of larger design firms in Ontario, it is easier to go farther afield, exporting and diversifying.

The Prairies

POSITION OF DESIGN

The Prairies, unlike other regions in Canada, have no single centre for design. Designers in the Prairies have had to be especially innovative and resourceful in developing new market areas and using multidisciplinary design teams.

The Prairie provinces benefit from a number of very good design schools. These schools turn out architects, landscape architects, communications designers, interior designers, and industrial designers, who are often recruited to locations across Canada and around the world. The Prairies boast the only multidisciplinary graduate design program in Canada.

In the past, institutes such as the former Manitoba Design Institute served as models for design institutes in other countries. Innovative programs included design assistance for manufacturers, published resources such as "*The Handbook for Product Development*," and promotional initiatives such as the biennial Premier's Awards for Design Excellence (PADE). Unfortunately, these initiatives were cancelled with a change in government priorities in the mid 1980s and the Nielsen report decision on Design Canada.

MARKETS AND MARKET OPPORTUNITIES

Historically, a small retail manufacturing goods sector has meant little demand for industrial design. However, the region has experienced an increase in the manufacturing of heavy equipment, including instrument and panel design, which may lead to opportunities for industrial designers. Some designers have been successful at developing international market niches. For example:

- Smed International, a Calgary furnishings manufacturer, distributes its product lines internationally and has showrooms in 30 major cities throughout North America, the United Kingdom, and Southeast Asia.

Government downsizing of internal design departments is providing more opportunities for private-sector design firms.

A few architecture and landscape architecture firms are developing a niche market in services to First Nations. With the trend towards self-government in Manitoba, First Nations are examining their infrastructure needs and turning to designers in the built environment for assistance. For example:

- Smith Carter has developed a market niche in the design of schools for First Nations communities.
- Hilderman Whitty, a Winnipeg-based landscape architecture firm, works with First Nations on land-planning issues and has been helping First Nations develop their positions on land claims.

In Saskatchewan, the construction of four new First Nations-run casinos is providing work in the built environment. Although hospital work has declined in Saskatchewan and Manitoba, it has been steady in Alberta, where a group of hospital designers have successfully exported their services to the United States. There is also some work available in Alberta's hotel sector.

British Columbia

POSITION OF DESIGN

Expo 86 was a turning point for design in British Columbia. Clients began to see themselves on a world stage, competing globally, and saw the value of design as part of their new export-oriented business strategies. The energy generated by Expo 86 spawned Design British Columbia, a multidisciplinary design advocacy and promotional organization launched through the support of the City of Vancouver. Further support from the federal and provincial governments has contributed to the growth of the sector.

Considerable design activity is currently taking place in British Columbia. The provincial government conducted a study of the province's design sector, and the Canada/B.C. Agreement on Communications and Cultural Industries provided funding for a number of design activities in the past year, most critically for the development of a provincial design strategy. As mentioned in Chapter 2, Design Now, the British Columbia Design Strategy Task Force, has involved the entire design community as well as clients, business, educators, and all levels of government in the development of a sector-wide strategy.

Numerous other projects have been undertaken. The Society of Graphic Designers of Canada (B.C.) has taken a lead in developing a web site for itself and for its members. Design Now developed a multidisciplinary web site called "DesignSource." Design British Columbia has been responsible so far for four biennial design weeks, a multidisciplinary educational initiative in public schools, and several studies within the manufacturing sector.

MARKETS AND MARKET OPPORTUNITIES

British Columbia's location on the Pacific Rim is a key market factor, both as an export market and for new domestic opportunities. A large influx of capital and immigrants from Asia has fuelled the economy, creating opportunities for designers, especially those in the built environment and communications design sub-sectors.

There is a growing interest and some success in marketing design services to the Asian countries on the Pacific Rim, particularly in urban planning, architecture, and engineering. A few firms are developing strategies to enter this market. Seeton Schinkewski Design Group Ltd., a Vancouver interior design consultancy, has made a major commitment to the Asian market by seeking market opportunities in China, which are now about to bear fruit. The expertise that Vancouver architects have developed in small-scale residential and high-rise development could be relevant elsewhere in Pacific Rim locations. Results are achievable only through significant market efforts; because most design firms are small, marketing budgets sufficient to support this activity are rare. The opportunity exists for joint ventures or consortia of firms that have like interests and are export-ready, but financial support for marketing will still remain a critical issue for many firms.

British Columbia's traditional resource-based economy does not foster the development of secondary industry readily. However, a shift towards a more diversified economy has established a small manufacturing sector. As examples, international market niches in satellite technology, submersibles, and diving gear have been successfully established. The Export Council of Canadian Architecture was spawned by the forest industry and B.C Trade, with a view to exporting Canadian architecture, using Canadian wood, into the Asian market. There is also support for the development of value-added wood products.

Environmental concerns are very important in the B.C. market, providing significant opportunities for landscape architects as well as for companies producing environmentally friendly products and services. Another major market sector for designers is tourism. The hotel, resort, food service, and retail businesses that serve tourists all buy a range of design services. The highly active film and media industries offer opportunities for communications and built environment design.

A large influx of capital and immigrants from Asia has fuelled the economy, creating opportunities for designers, especially those in the built environment and communications design sub-sectors.

Despite the current range of opportunities, many design firms are concerned that this prosperity is fleeting. Wild economic swings over the past decades have prompted a certain caution. Few firms are hiring permanent staff, relying more on contract personnel.

3.3

CONCLUSIONS

1 The growth of the design sector has been hampered by the prevailing economic conditions.

All sub-sectors have been affected.

- The construction industry, a key to demand for design of the built environment, is only just beginning to recover from the recession. The weakness in the manufacturing sector affected the demand for industrial design. As a result of the overall decline in corporate revenues, demand for communications design also suffered. Some design firms were forced to reduce staff, and others closed.
- At the same time, reduced trade barriers are resulting in more competition from U.S. design firms.

In addition, each sub-sector faces its own challenges.

- Many built environment projects go forward without the participation of professionals in the sub-sector. Clients often use the capabilities of contractors and engineers to realize these kinds of projects. Their way of thinking about the built environment is institutionalized in regulations and legislation across the country.
- The communications design sub-sector has changed substantially as a result of technology. Now that electronic commerce is being put into place, business-to-business communications and business-to-consumer communications will move from paper to screens. This is a new market, which has not been described completely and in which communications designers will need to work quickly to position themselves. Otherwise, many may be left to share what remains of the traditional graphic design services.
- Industrial designers face the daunting task of developing a niche in Canada's manufacturing sector. With Canada's branch-plant economy, many local manufacturing firms do not believe they need industrial design services. Those that do, often use others, such as engineers, for design.

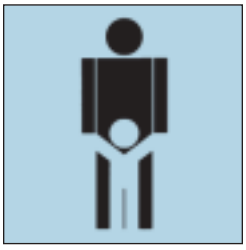
Despite the situation, designers continue to create and capitalize on opportunities both in Canada and abroad.

2 Canadian designers are seeking new ways to apply their talents in the marketplace.

- The Canadian marketplace continues to hold an abundance of opportunities for the design sector. Designers are expanding their services into new areas to take advantage of Canada's changing demographics, Canadians' concerns about the environment, the changing work environment, and government and corporate priorities.

3 Canadian designers have the expertise to develop products and facilities for extreme climates and a dispersed population. Such expertise has potential market value around the world.

- Canadian designers have demonstrated the commercial impact of context-specific design in the international marketplace; the snowmobile is one prominent example. Canadian designers are leveraging these skills to develop competencies in other areas, including the design of leisure, household, communications, and healthcare products; new-media and wayfinding systems; multi-use facilities such as malls; and leisure and tourism facilities. Growing markets around the world are opening up for these skills in industries such as telecommunications, communications, entertainment, retail, tourism, health care, environmental products and services, plastics products, and mining.



- International opportunities pose a challenge to design firms. Most firms are small, and the cost and resources required for such endeavours can be significant.

4 Technology has had a tremendous impact on the practice of design and on design practices, and it will continue to pose challenges and present opportunities.

- Technology has changed the work in the sector and even eliminated some tasks. Some of the traditional entry level work that would have been performed by inexperienced designers in the past has been automated, leaving fewer positions available for new graduates.
- Telecommunications have extended the reach of designers to clients. Design firms are becoming more and more an extension of their clients' operations. The advent of multimedia networks strengthens this link. Designers will be asked to interact directly with the databases and technology of their clients.
- The tremendous growth in information technology represents probably the single largest area of opportunity for the sector. However, few designers have evaluated fully these opportunities or have taken the time to retrain for digital transformation, thereby leaving openings for other specialists.

5 Building strength in the national design sector has to start with strong regional design sectors.

- The sheer size of Canada means that Canadian designers are geographically dispersed across the country. Each region faces unique challenges and opportunities that affect its designers. The strength of the design sector will come from the abilities of designers in the various regions to take advantage of local opportunities. Several of the provincial and regional design sectors, including those in the Atlantic region, Ontario, and British Columbia, have taken the first step by developing provincial and regional design strategies. These strategies will be instrumental in building the design sectors both in those regions and in Canada. A national strategy has to incorporate the regional initiatives, and vice versa.

Extraordinary changes are occurring in the Canadian and world economies. Opportunities and challenges abound. How the sector responds to them will determine its contribution to the economic and cultural future of Canada. First, however, the sector must ensure that designers have the tools and the support needed to apply their talents.

Footnotes

1 Includes challenges and opportunities common to two or to all three of the sub-sectors.

2 Includes challenges and opportunities common to two or to all three of the disciplines in the built environment sub-sector.

3 Assistance in identifying market opportunities and demand for Canadian design firms is available through the Department of Foreign Affairs and International Trade (DFAIT).

4 In fact, some interior designers are joining the International Facilities Management Association (IFMA) and taking the IFMA certification examination.

5 ISO 9000 quality assurance registration requires that a company's processes and all activities that affect quality, from management responsibility to training, are identified, documented, and functioning effectively according to requirements determined by the company and ISO 9000. It requires internal auditing, management review, and the establishment of a well-documented quality system with defined procedures and work instructions.

6 The Picard Report, or the Report of the Consultative Committee to the Ministerial Committee on the Development of the Montreal Region, was commissioned by the Ministerial Committee on the Development of Montreal to identify measures to revitalize the economy of Montreal.

CHAPTER 4

Design could emerge as the discipline that brings together the myriad parts of the modern corporation. As organizations deconstruct themselves into "virtual corporations" made up of autonomous in-house units and various external partners, the old headquarters' bureaucracies are disappearing. Designer's ability to integrate information from functional experts and outside partners makes it the glue that can hold teams together.

Business Week, June 7, 1993

CHAPTER 4

THE MARKETING CHALLENGE

The ability of designers to demonstrate the economic value of design to their clients in a way that shows an understanding of their clients' interests is what will differentiate those designers who are able to capitalize on the opportunities before them from those who struggle to compete. This chapter focuses on the marketing challenge before all designers.

"Design success is far more difficult to measure than business performance...[it] depends on who is doing the evaluation. Managers may define design success in terms of...commercial impact; engineers may view a successful design in terms of technical performance; industrial designers in terms of ergonomics and appearance; purchasers in terms of value for money, and so on." (Robin Roy, 1994).

4.1

QUANTIFYING DESIGN'S CONTRIBUTION

Demonstrating the economic benefits of design to corporations, to the general public, and to governments is one of the most important challenges facing the design sector.

Good design has positively influenced the performance of various organizations and the quality of life of the general public. Yet relatively few Canadian organizations have recognized design as a key success factor differentiating them from their competitors. The challenge for the design sector is to stimulate Canadian business to treat design as a core element of a business strategy, like marketing or finance.[1] First, designers need to quantify the economic impact that design can deliver.

Users of design reported that before they began using design services, they thought design was costly and not very practical. One client commented that some designers believe that "the way to do good design is to spend a lot of money." Another noted that a common perception of manufacturers is that industrial design is about winning awards, not about producing value-added products. It is highly probable that non-users have these same perceptions.

Several of the international interviewees expressed similar views about the design sector in their countries. One British study (Walsh et al., 1988) was unequivocal in its conclusions. According to its authors, design was regarded with suspicion by business managers and deemed unworthy of time, effort, and expense. Two principal reasons were given for this perception: the association of design with fashion, style, and trends rather than with real value; and the lack of evidence to warrant the expense of using design. Clearly, designers had not made an adequate case to justify their profession. As one student at the Technical University of Nova Scotia noted, "Architects have been very bad at explaining to the public what they do. The common language of communication is oral, but ours is visual."

Even in countries that seem to have a strong appreciation for design, low utilization remains an issue.

- The interviewee from *Rat für Formgebung* in Germany noted that the main reason some German companies do not use designers is that these firms can still turn a profit without the benefit of good design. Design education is partly to blame. As well, too often the media emphasize design's artistic element. Add the fact that businesspeople do not know how to deal with designers because they have not been taught about design, and one can see why certain German companies still do not use designers.
- The interviewee from Design Forum Finland indicated that too few Finnish companies use designers. The principal reasons for the low level are that traditional design education is too art-oriented; that design is considered too elitist and expensive; that basic education (the public school system) does not have enough cultural content; and that businesspeople and technocrats do not possess a cultural background, and therefore do not understand design.
- Dutch industry generally does not make use of design services, according to the representative from the Netherlands. The design profession there has done a poor job convincing industry of the benefits of using design. Seemingly, there is no need to use design because the markets would absorb any quantity of products, regardless of the design component.
- The representative from the APCI in France reported that many sectors do not use design principally because of longstanding corporate culture. For example, most high-technology companies, as well as leading-edge companies, are headed by engineers. Craft-related companies are even more culturally traditional and less prone to using designers; managers of these latter companies feel that design skills are passed down from father to son. In general,

the French tend to be more cautious about using design. Even positive case studies do not always persuade companies that design should be used.

- In Singapore the design sector is relatively new. The interviewee from Design Centre Singapore noted that design has not attained the status of other professions among users and potential users. Government and quasi-government agencies tend to ask for design services through a tender system that requires design work up front ("spec" design), and private-sector companies tend to choose the design firm with the lowest bid.

It stands to reason that if the economic benefits of design can be quantified, then Canadian business would make greater use of design. But even the most rudimentary analysis of design's impact on the economy is missing. Design wins awards on the basis of peer group criteria or because of a manufacturer's generally undocumented claims of market success. Moreover, success stories tend to be covered by the design media and not by the mainstream media.

Most designers agree that more research needs to be based on objective scientific, economic, and social models, and that such research needs to be widely published. This kind of research should be done at the university level, but little research is conducted in design schools because:

- most design programs in Canada are at the community college level, where research is not an issue.
- at the university level, where research is generally a requirement, few faculty in design schools have research experience. Many were hired for their backgrounds in practice, not in research. (As faculty members retire and are replaced, some schools are making appointments based on research and academic credentials.)

There are a few notable exceptions:

- Significant research is being conducted at the University of Manitoba's Faculty of Architecture in housing for the aging, barrier-free design, virtual reality, and sustainable design.
- Faculty in the landscape architecture program at the University of British Columbia are active in research on topics such as urban landscape, landscape restoration, the psychological aspects of landscape architecture, community planning, and design theory.

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Most designers agree that more research needs to be based on objective scientific, economic, and social models, and that such research needs to be widely published.

The lack of research capability in design schools is not unique to Canada. As examples:

- As recently as 1992, the president of the Bureau of European Design Associations publicly stated that a socioeconomic study of design in Europe was very much needed.
- Design research in the United Kingdom tends to be done in schools of business and management. Furthermore, the British Design Council stated that future funding for design research probably will not go to designers because of the lack of qualifications to conduct research at this level.

Discussions and research about the contribution and economic value of design and design-related business activities generally fall into two categories: the "spinoff" analysis, and the "value-added" analysis. The "spinoff" analysis focuses on the sector as a specifier of goods and services, and attempts to estimate the multiplied value of these goods and services to derive a dollar figure of economic activity. For example:

- In a 1990 study entitled "Report to the Interior Designers of Canada on the Complexion of Their Members," prepared by Decima Research, the

478 interior designers who responded to a questionnaire estimated that during 1989 they specified $303 million in services and materials from suppliers and other service firms.

- In a 1995 study of the design sector in British Columbia, by Ference Weiker & Company, the province's design firms were found to have specified the purchase of about $2.7 billion in products and services in 1994.
- In a recent study on the socioeconomic value of design in Quebec (conducted by Le Groupe DBSF for the Forum Design in May 1994), the design sector was reported to have specified more than $9 billion in products and materials in 1992.

Although "spinoff" analysis is a powerful tool to demonstrate the economic impact of design activities, it is valid as a measure of contribution to the Canadian economy only if the goods and services specified and used are made by or purchased from Canadian firms.

Many designers would suggest that design should measure its worth on intelligence and strategy, not on how much it asks buyers to spend.

The "value-added" approach to assessing the economic value and contribution of design looks at the results of investment in design and the economic rewards of this investment. This analysis usually works best with communications and industrial design because it is easier to isolate design as a factor that contributes to economic return. However, it applies to the built environment as well. As Tony Hiss shows in his 1990 book *The Experience of Place*, there is an emerging body of scientific research that demonstrates the physical impact of certain buildings, their interiors, and natural environments on our bodies and on our well-being.

The most frequently quoted study of the "value-added" analysis is a 1990 report prepared for the Economic and Social Research Council of Great Britain by the Open University/UMIST. Entitled "The Benefits and Costs of Investment in Design," this report surveyed more than 220 design projects in U.K. manufacturing firms that had recently developed new or improved products or components, or had redesigned their product packaging, graphics, or technical literature. The main finding of the British study was that "even in typical small to medium-sized firms…the development of new and improved products, packaging, etc., using professional product, engineering, industrial and graphic design expertise can be an excellent commercial investment."

- In the British study, two-thirds of the projects were put into production. More than 90 percent of these implemented projects were profitable, with an average sales increase of 41 percent. Sixteen percent of implemented projects led to new or increased exports, 25 percent of the projects opened new markets, and 10 percent led to reduced costs.
- The "value-added" approach is the basis for the Group for Design in Business/Financial Post Design Effectiveness Awards. These awards require submissions to include information from the client about the economic impact of the project. Although it is almost impossible to verify any of the financial claims of success, these award programs attempt to relate the value of design to success in the marketplace, not merely to physical form.

Some of the most powerful evidence comes from clients. The Corporate Design Foundation and the Design Management Institute, both in the United States, have produced numerous case studies that investigate the process and the benefits of specific design-related business activities. They focus on the development and differentiation of products; the communication of brand identity; concurrent design and engineering; and the tangible results of the re-engineering of companies. These detailed cases are a valuable tool for designers learning to market the benefits of design. More importantly, perhaps, these cases are used in the curricula of business schools to

expose future managers to the role that design can play in overall business strategy.

This research is important for two main reasons:

- It can provide indisputable evidence that design is a critical component to a country's economic progress and success.
- For individual designers, it can help support discussions with, and proposals for, existing and new clients.

A factor that clouds public recognition of design is that specific disciplines have not carved out a distinct niche for themselves.

Designers compete with other professions to provide similar services, and they compete with each other as well. For example:

- Contractors, urban planners, and engineers compete with architects.
- Interior decorators and architects compete with interior designers.
- Landscape contractors, engineers, and environmental planners compete with landscape architects.
- Desktop publishers, computer programmers, artists, architects, and industrial designers compete with communications designers.
- Engineers, interior designers, and architects compete with industrial designers.

Designers compete with other professions to provide similar services, and they compete with each other as well.

This situation compounds public confusion over how designers differ not only from other professionals claiming to provide similar services, but also over how the design professions differ from one another. In a recent study by the British Columbia Manufacturers' Association and Design British Columbia, manufacturers were asked whether they used industrial designers. Although the majority do not employ or contract for industrial designers, many manufacturers reported that they have a design function performed by engineers or technologists. Clearly, the freedom to choose from the variety of expertise in the marketplace will force design to live or die on its merits.

4.2

MEETING THE CHALLENGE — THREE APPROACHES

The Canadian design sector has enormous potential to provide strategic business leverage to clients in Canada and beyond. Tapping that potential requires designers to demonstrate the benefits and value of their services. Designers must identify key business areas, such as increased market share, customer satisfaction, and profitability, where they can make a difference to a client. They must also be able to produce and document results. Dramatic performance improvements will be achieved once clients consider design to be a core business function — and create opportunities for designers to consult on managing innovation. This section discusses three approaches to meeting the challenge of demonstrating the value of design.

User-Centred Focus

Solidifying client relationships is critical to the process of demonstrating value. Designers must know their clients. Communication between designer and client is key.

- Users of design most often mentioned the designer's ability to listen and his or her flexibility or responsiveness to their needs as the bases for a good designer–client relationship.
- Clients noted that they also selected a designer according to his or her ability to work both with the client and the client's staff, such as marketing and engineering personnel.
- Clients want designers who can lead, engage attention, and communicate.
- They are also looking to designers to present creative solutions, although a number of interviewees noted that solutions had to be practical and within their budgets.
- As one designer commented, "The best relationships are those where there is a mutual respect for each other's opinions. Ultimately, the client and the designer have to have the same vision."

An emerging body of research is appearing on the issue of technology transformation — that is, the way that basic research and new materials and technologies are transformed into products, spaces, and communications that have a tangible benefit to the consumer. Design is a key element in the successful transformation of technology into products. This research, which looks at what Patrick Whitney of the Design Institute of Chicago calls "unmet" customer needs, leads to products and services that meet those needs. That, according to Whitney, is the way business can make breakthroughs and avoid "me-too" products.

Once the new product and service areas are defined, design has the potential to team up with additional expertise in fields such as ergonomics, materials, processes, and psychology to develop products that satisfy consumer demands for usable products. Usability involves the myriad of often subtle activities and actions we undertake when we use a product. It includes the physical, psychological, and psychosocial issues that have an impact on the way spaces, products, communications, and services are understood, used, and appreciated.

Scandinavian, especially Swedish, designers have long had great regard for the user in the product development equation. For example, their designs for products for people with physical disabilities have often placed Scandinavia far ahead of the international design competition. This user-centred focus is restricted to the physical fit of the design to the user. The more

recent interest in user-centred design by various sectors is somewhat different in its scope. To a large extent it stems from innovations in high-technology, which often do not seem to have the user in mind. In these cases, designers are not dealing so much with the physical fit of the product to the user as with the psychological fit.

The emerging practice of usability testing in product and software design is helping designers convince engineers about real-world benefits of design. They can measure seconds gained, which can then be multiplied by salaries or social costs. Design can be cost-justified as a result. As an example of this approach to user-centred design, Patrick Whitney cites work that the Doblin Group and the Design Institute did for Amoco, a U.S. petroleum company.

- Using a variety of research techniques, customer needs were identified in the retail gasoline environment. The design for the "gas station of the future" includes self-cleaning bathrooms, hand-washing stations at the pumps, and digital read-outs on the nozzles that save customers from having to twist their necks. The result is a customer-centred, pleasant experience in what was formerly regarded as a dirty, unpleasant environment.

We do not have to look so far afield to find excellent examples of this concept. Over the past few years, the "design-to-value" work of the Corporate Design Group at Nortel Technology (formerly BNR) has been using a similar approach in the development of new products.

Effective and Efficient Design

Larry Keeley, a design planner in the United States, believes that to remain relevant, valuable to clients, and competitive, the design sector will have to provide services in either of two ways — more effectively or more efficiently. Both approaches hold significant opportunities for the sector. Successful design firms either will work with their clients to make strategic breakthroughs by changing basic business perceptions about products and services, or will help their clients save time and money. These two trends are very different. Designers are finding that if they try to move in both directions at once, their efforts will be counterproductive. Designers render themselves vulnerable to "smarter" or "cheaper" competitors.

EFFECTIVE DESIGN

Keeley calls design consulting that focuses on concepts, invention, and strategy "effective design." It draws on the concepts of the user-centred approach described above.

- Effective design is a strategic business function, not a tactical one.
- It responds to clients' needs to be able to provide exceptional customer service through customization and superior customer knowledge.
- It requires a concurrent design approach.
- It requires "upstream" involvement of design in the design development process. That is, it requires designers to work with senior members in an organization who are responsible for strategy, products, and services, and for the delivery of those products and services.
- Designers need to be able to work in, and manage, multidisciplinary teams to provide effective design services.

Increasingly, large companies such as Chrysler, IBM, NEC, and Bell Canada are finding that collaborative teams have real financial benefit because they shorten the time-to-market of new products and new

environments. Smaller companies, where the teams comprise in-house resources and consultants, are beginning to understand the lesson. For these companies with limited resources, time-to-market often is the difference between the success and failure of new initiatives.

Traditionally, design entrepreneurs have practised effective design. A design entrepreneur anticipates a market need, confirms the market for the design solution, raises the capital to produce and distribute the product, and manages the production and distribution processes. On the upside, design entrepreneurship offers designers the opportunity to be involved in the entire design development process. On the downside, design entrepreneurship requires a significant financial investment; finding financial support for what is, essentially, an idea can be a challenge. This is an area that could be promoted through better access to funding for research.

One of Canada's most renowned entrepreneurial design firms is Studio Innova in Toronto.

- Actar, the cardiopulmonary resuscitation (CPR) training dummy, is one of Studio Innova's products. The firm designed Actar, cultivated a local market for it, and found manufacturers with the expertise to produce the various components. Once Studio Innova solidified the local market, it developed a worldwide market for Actar by identifying distributors and marketing the product at trade shows around the world.

Design entrepreneurship requires a wide range of skills, including design, social science and market research, and financial and marketing skills, along with the ability to raise capital and manage contractors. Designers do not graduate from design programs with these skills. In the case of Studio Innova, the partners read books, took courses, talked to other small business owner-managers, and implemented software to help them manage the process.

Although design entrepreneurship is most often associated with industrial design, it is being applied in the built environment. Design-build offers a turnkey operation that includes design, construction, and sometimes financing.

EFFICIENT DESIGN

The other major area in which designers can provide value to their clients is in saving time, steps, and money.

- Efficient design uses scarce resources well.
- Efficient design responds to clients' needs to be able to provide exceptional customer service by producing products or providing services faster and more economically.
- It requires highly trained technical support personnel because it is an automated and technology-dependent activity. It is also capital intensive.
- Efficient design requires continual upgrading of technology and continual training to ensure process improvement that removes steps, time, and errors from the design and production processes.

Essentially, efficient design involves applying business process re-engineering principles to the design development process. Such principles include:

- organizing around outcomes, geographically or logically;
- providing quality at the source;
- eliminating waste or non-value-added activities, such as reworking or correcting;
- using demand pull workflows and smaller batch sizes;
- reducing preparation, for example, by using appropriate forms or screens to capture information;
- establishing relationships between customers and suppliers;
- applying automation and appropriate technologies; and
- establishing continuous improvement capability and mindset.

Architects who specialize in "rolling-out" retail locations at increasingly lower costs are an example of designers who take advantage of opportunities in efficient design.

4.3

THE ENABLING SKILLS

Design is a process that integrates human intelligence and natural and human-made resources, then transforms them into tangible solutions that satisfy existing and future human needs. Designers add value by harmonizing business elements, materials, and the needs of end-users to save money, to increase efficiency and productivity, and to improve comfort and the quality of life.

Using various methodologies, designers clearly identify the needs of their client or the end-users; develop mechanisms for meeting these needs (products, services, processes, spaces, communications); and communicate the solutions to others, who realize the product as a means of satisfying user needs. These interconnected activities, as well as the tangible product, are key to the services that the design sector provides.

The process that designers employ is common to all design disciplines. As illustrated in Figure 4-1, it involves:

- formulating objectives and strategies based on the identification of clients' needs;
- developing first-level specifications;
- researching and/or generating ideas;
- ideation, including prototyping, model-making, and testing, that results in design; and
- production.

Ultimately, the process is driven by the client, who is actively involved in all stages of the design development process, ensuring relevance and value.

These methodologies, and knowledge about the specific techniques and processes involved in the development of final products and services, are at the heart of training for, and of the practice of, the design professions. But, as discussed, it takes more than good design skills to be successful in today's complex business environment.

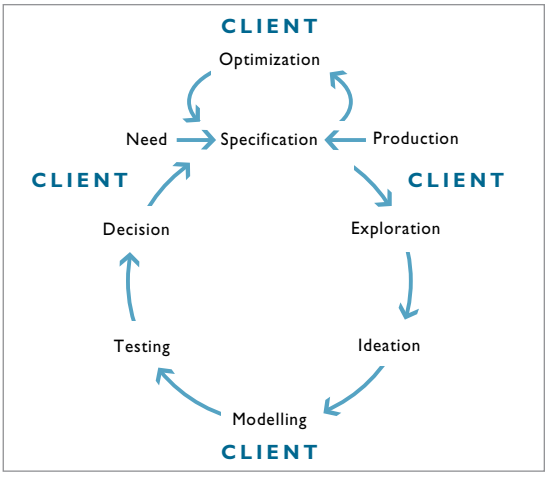


Figure 4-1 *Based on a model of Kardos, 1983*

Designers have to be aware of how their environment is changing and how they will be affected.

Today's designers find themselves in a highly complex, ever-changing, increasingly global business environment. Trade barriers are falling. Markets are changing. Competition is increasing. Clients have more choice. It is becoming more of a challenge for designers to keep abreast of emerging technologies, changing demographics and societal preferences, and market opportunities (British Council for National Academic Awards, 1992). But at the same time, meeting these challenges are becoming more critical than ever.

Designers have to be focused on the end-user.

Designers need to be well versed in:

- future-based or user-centred design;
- product intelligibility (design of products, spaces, and communications that are understandable to users); and
- form-follows-emotion — that is, design focused on enabling people to feel comfortable with a product or space.

Designers must transcend disciplinary boundaries to work in integrated, multidisciplinary teams.

A variety of interests have to be considered in the design development process. More than ever before, designers are working in consultation with diverse groups or individuals, and as part of a team that includes the client, users, other designers, and specialists. Figure 4-2 depicts the diversity of relationships in each sub-sector. These multidisciplinary situations require yet additional skills to be successful, including:

- an understanding of the roles of various team members and of what they bring to the team;
- the ability to draw on a wealth of expertise and to integrate it into the team;
- the ability to articulate a design perspective in language that non designers will understand;
- negotiation skills; and
- the ability to understand the value of compromising, when appropriate.

Designers must be integrators and collaborators — roles that do not come easily to most designers. Design schools typically do not encourage team-based problem-solving with members of other disciplines or professions. The extent of demarcation among the disciplines in the design sector has led to a lack of understanding of what the other disciplines do, and of their worth. As a result, in any particular situation there is an assumed hierarchy in which one design discipline perceives that it holds the ultimate design solution. The tendency among designers is to assume a hierarchy of knowledge, with design knowledge placed above that of other specialties; the inevitable result is that outside ideas are limited.

Where once it was acceptable to have groups with special skills "battling for territory" with others, today the culture in most organizations necessitates that designers work as equal partners with professionals from other groups to get a product to market. This collaborative effort is particularly important in an economy where time-to-market is constantly constrained. Further, as design problems become more complex, the contribution of all designers and of other specialists will be necessary to produce innovative solutions to meet clients' needs.

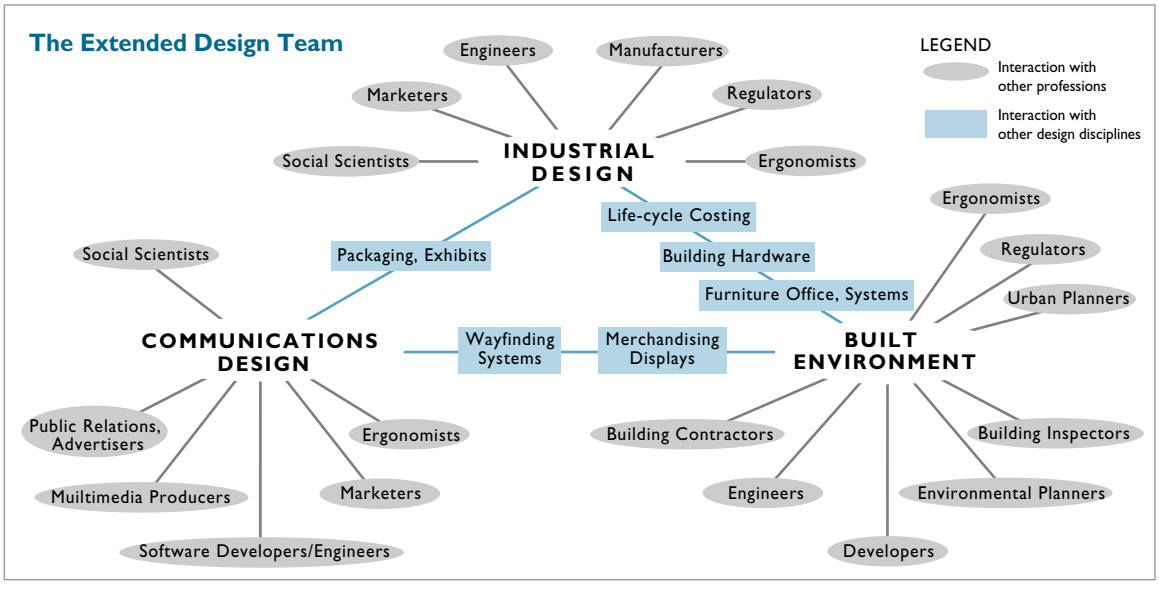


Figure 4-2 *Adapted from the Ontario Design Strategy*

Designers need to be able to think strategically, from the client's perspective.

Designers are finding themselves involved more at the front end of the design development process and consulting on the strategic needs of clients. It is therefore essential that designers have an understanding of their clients' positions in the economy, of the pressures and trends facing their clients, and of those factors that are critical if clients are to achieve their strategic goals. Armed with this information, designers will be in a better position to pose more relevant and more effective design solutions.

A designer's ability to listen effectively, to interpret objectively, and to communicate ideas in a language the receiver can understand are paramount for success.

The design service sale is a "complex sale," requiring significant up-front preparation.

As a complex sale, it tends to involve more than one decision-maker. Identifying all the people accurately and understanding the role of each player in the decision-making process can be two of the major stumbling blocks for designers. It is not enough simply to concentrate on those individuals who have been important in the past or whose titles suggest they are the people to meet. Since corporate structures are in flux, it is wiser to focus not on titles, but on roles that relate to a specific project.

In every complex sale, there are four critical "buying influences" (Miller and Heiman, 1987). The term refers to the people who play any of the four buying roles. No matter how many people are involved in the buying process, they always play at least one of the four roles:

- **Economic buying influence** — The role of the person who will act as economic buyer for the sale is to give final approval to buy. There is always only one person or set of people playing that role for a project. The economic buyer can say "yes" when everyone else has said "no," and vice versa.
- **User buying influences** — The role of user buyers is to make judgments about the potential impact of the service or product on their organization's performance. User buyers will use or supervise the use of the service or product, and so their personal success is directly tied to the success of that service or product. There may be several people playing the user buyer role in a sale.
- **Technical buying influences** — The role of technical buyers is to screen out possible suppliers. Their focus is on the service or product itself, and they make recommendations based on how well the service or product meets a variety of objective specifications. Technical buyers cannot give a final "yes," but they can give a final "no." As with user buyers, several people usually play the role of technical buyer for a project.
- **Coach** — The unique role of a coach is to guide the salesperson, for example, a partner in a design firm, to a successful conclusion by providing information on the other buyers — including information needed to position the salesperson with each one. While the other three buyers are usually within the target client organization, the coach may be found outside the buying organization.

Understanding both the four buying influence roles and the people playing those roles is critical for designers:

- to identify how success and value will be measured by their target clients; and
- to know how to demonstrate the value of their work in ways that are relevant to that potential client.

4.4

CONCLUSIONS

1 Demonstrating the economic benefits of design is one of the most important challenges facing the design sector.

- Designers have not found a way to articulate clearly the value of design to business. In fact, with the exception of architecture, the sub-sectors of design remain virtually unknown by Canadian business, the general public, and governments. Relatively few Canadian companies see innovative design as a key to distinguishing themselves from their competitors. In addition, only a few governments have shown that they recognize the benefits. Coverage of success stories by mainstream media is spotty.

  Many would suggest that design's absence from the public school curricula in Canada contributes to the general lack of awareness about design. The Board of Education, for the City of York in Ontario, and Design British Columbia have taken steps to bridge this gap. Design British Columbia's Designer-on-Call program places professional designers in the classroom to work with students on problem-solving projects. A design project called "Be Seated" has elementary and secondary school students design and build models of chairs as a methodology for understanding design thinking. "Be Seated" was so well received that Design British Columbia is writing a handbook and developing teacher training to accompany the program.

- The sector has done little to record the impact of design on clients' businesses. Research has been conducted elsewhere on the value of design, but in Canada the design sector has lagged behind. The dearth of documentation on the benefits of design is due partly to the lack of research capabilities in design schools, and partly to the lack of funding for research. Nonetheless, designers generally must take the initiative to demonstrate the worth of their talents.

- Designers must stimulate Canadian business to treat design as a core element of a business strategy. For many years, corporate management focused on general management and finance, rather than on products and services.

  This absence of an understanding of design by managers can be traced in part to the fact that, generally, design is not addressed to any great extent in the curricula of Canada's graduate business schools. The French, Norwegian, and Finnish representatives noted that, in their countries, getting design into the curricula of business and engineering schools is one of the most important challenges facing design. In comparison, business schools in the United States and Sweden have started this process; in fact, the major U.S. business schools have indicated significant interest in working with the design sector to enhance their curricula.

  At the same time, designers need to understand the business environment in which their clients operate and to understand their clients' business strategies. They need to define the role of design within those strategies and to express their ideas in a language that clients understand.

2 There are three approaches designers can take to demonstrate the value of design.

- *Understanding users' needs:* Involving clients and end-users in the design development process is paramount to successful design. The emerging practice of usability testing is giving designers the opportunity to demonstrate the economic value of their talents.

  Usability testing sees designers teaming up with experts in other areas, such as ergonomics, materials, and psychology, to develop solutions for

unmet customer needs. Designers are dealing with the psychological fit of the product or space to the user, as well as with the physical fit.

- *Practising effective design:* Designers can help clients to make strategic breakthroughs by changing basic business perceptions about products and services. Effective design is an approach that focuses on concepts, invention, and strategy. It requires designers to work closely with senior management in adjusting corporate strategy to the design development process. It incorporates the concepts of user-centred design, concurrent design, and virtual design, and requires designers to work in multidisciplinary teams.
- *Helping clients save time and money through efficient design:* Efficient design uses scarce resources well to respond to clients' needs to provide exceptional customer service through producing products or providing services faster and more economically. The focus is on production. Efficient design uses the concepts of business process re-engineering to save time, steps, and money in the design development process. The technology used to support the design development process is a key part of efficient design.

3 Strategic selling skills are critical to demonstrating the value of design.

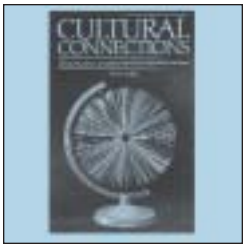
- Strategic selling focuses on clients' needs. The designer must be able to identify those needs, both organizational and personal. There are four buying influences in any organization. Understanding these key roles and identifying the buyers will allow a designer to grasp their points of view. This awareness will help designers understand how their services or projects can help buyers meet their objectives.

4 The ability to work as part of a multidisciplinary team is paramount to developing relevant design solutions.

- Successful designers are integrators, reaching across disciplines to bring in new information, to extract ideas, and to think critically from diverse points of view (Owen, 1989). Today's designers frequently must work in teams composed of a variety of experts. User-centred design and concurrent design strategies now mean that the design development process is performed by a team working together. To work successfully in multidisciplinary teams, designers must value the expertise of each member and must understand how each participant can contribute to the design development process.

  Designers require the ability to draw on the variety of available expertise, to integrate such expertise into the team, and to articulate a design perspective in language that non-designers will understand. Also important are negotiation skills and an awareness of the value of compromise. For designers educated that design is a solitary process, this new approach is indeed a challenge.

The design sector has no control over the economic, the demographic and social, or the technological changes that affect its performance. But the sector can cultivate opportunities brought about by these changes through helping designers prove their ability to enhance the economic position of Canadian business. Designers need to be aware of the environment in which they are operating — to identify opportunities not only for themselves, but also for their clients. But first they need the tools, such as case studies, and the skills, including strategic thinking, marketing, research, and team-building.



Footnote

1 Many designers suggested that business schools should include design strategy in their curricula. In fact, some Canadian business schools have started talking about design. In a survey of Canadian graduate business schools conducted as part of this study, two of the 22 schools that responded reported that they had courses in design management. Another 25 percent of respondents indicated that design management was covered in other courses. Unfortunately, among the two-thirds that do not address design management issues, there is little interest in the topic. More detailed results of the survey are provided in Appendix F.

Designers also suggested that public school programming should incorporate design. The idea here is that the population at large would become more attuned to design, and design utilization overall would improve.

CHAPTER 5

Design management includes two levels.
Functional design management ensures that you have a well-running design group as a resource. However, that in itself is not enough. For a corporation, there is an even more important level of design management.
That is…strategic design management.
This is the mechanism that ensures the effective utilization of design by a corporation…

Petere Lawrence, Chairman, Corporate Design Foundation,
"Design Management in Practice"

CHAPTER 5

THE MANAGEMENT CHALLENGE

Design firms are small businesses. As with any business, they can flourish under a management that is innovative in its thinking and strategic in its outlook. The vast majority of design firms are headed by designers; only a few have non-designers in the most senior positions. Unfortunately, many designers have yet to recognize the importance of the skills required to manage a design practice.

This chapter explores the approach to management in the design sector. It assesses the skills required to manage both projects and people, and it examines the management gap.

5.1

MANAGING THE BUSINESS

Management skills are different from design skills.

As one firm owner commented, "To start our own design firm was a huge leap. To hire a staff meant that we became managers in addition to being designers — that was an even bigger leap."

Most designers learned their management skills through experience, sometimes through costly trial and error. Because a designer's training is in the *process* of design, few designers bring to their enterprises any knowledge of how to run a business. In fact, the management of design firms rarely was perceived by designers as a central issue of commercial success, let alone survival. British researchers found that British designers expressed their "core values" in terms of *high-quality design* and *effective solutions*, rather than through *meeting clients' needs or investment in company growth* (Bruce and Morris, 1994).

Few designers operate with a well-configured business plan. A comprehensive study on Danish and Swedish design firms revealed that business planning was reactive and carried out ad hoc, and that business performance was rarely assessed in financial terms (Bruce and Morris, 1995). Unfortunately for a number of design firms in Canada and elsewhere, the lack of attention to managing the business took its toll during the recession. Some firms are starting to react.

- Culham Pedersen Valentine, an architectural firm in Calgary, realized that to survive the firm had to focus on the business. As one partner noted, "For people here, their education has left them believing that there is a higher calling: that the business aspect is secondary. Education has not taught people that architecture is a business."

  Culham Pedersen Valentine struck a task force to address issues related to productivity and business, developed policies to put real structure into the firm, and defined roles and responsibilities.

Table 5-1 highlights the skills required to manage a business in the emerging environment and comments on the general level of ability within the design sector.

The management skills gap in the design sector is fairly significant. Some firms have recognized the weakness and have found ways to bridge this gap by using a variety of strategies. For example:

- They contract for specific management skills, such as financial management or marketing, on an as-needed basis.
- They bring the expertise in-house. Some larger firms have staff, who are not designers, to manage the firm.
- They allocate the responsibility for management functions among the partners. Although many firms prefer this approach, it is successful only if the partners have the appropriate skills. These skills may be acquired through professional development, either formal or informal. As an example, a partner of Yabu Pushelburg, an interior design firm in Toronto, attended a management program at Harvard University.

Strategies may vary, but design firms are slowly beginning to recognize the importance of business skills and marketing development. Why some firms succeed and others fail, why some grow and others stagnate rarely reflects the quality of the design work. As the partner at one architectural firm noted, "Firms that prosper now have demonstrated real business acumen."

Table 5-1: Level of Business Development Skills in the Design Sector

Skill	Level of Ability in the Design Sector
Business planning — Scan environment for opportunities, analyze the costs and benefits of opportunities, and choose a course to pursue; set objectives and devise actions to achieve them; anticipate problems and develop strategies to overcome them.	Few design firms have a business strategy. Many design firms are reactive in their approach to opportunities, making themselves vulnerable to unanticipated change drivers. The complexity of projects and the mix of clients make business planning difficult and especially critical.
Opportunity identification — Identify and assess market opportunities; develop strategies to market products and services; anticipate and adapt to market changes.	The approach many firms take to opportunity identification is passive. Marketing and promotion in the design sector are largely through word of mouth. A few firms have taken a more proactive approach, researching opportunities for their products and services. With growing opportunities overseas, the need for exporting skills will increase. Designers expressed interest in developing overseas markets, but most confessed to having limited knowledge about determining international opportunities.
Finance/accounting — Understand and apply accounting principles and financial practices to ensure the profitability of the design business; look for opportunities to optimize quality and cost in developing a design solution.	Most design firms contract for accounting expertise. Some large design firms have systems to track time spent on various projects, and as a result project managers can access information about the financial status of their projects. Generally, financial information is held tightly by the senior members of the firm. In a few more enlightened firms, information is being shared with staff in an effort to develop a more cost-conscious approach to project management and design solutions.
Marketing and client development — Identify potential clients; identify all buyers and their particular needs; develop a strategy that meets the needs of all buyers.	Designers have been faulted for producing design solutions that satisfy their personal goals rather than those of their clients. At the same time designers need to be creative to develop solutions for clients' problems. The design sale is complex, involving a multitude of buyers in the buying decision, all with different interests. The situation is often underestimated by designers. Designers generally have not found a way to communicate to their clients in a way that demonstrates the economic value of design.
Production — Develop and manage systems to optimize the costs and quality of projects and services.	Most firms have implemented technology to aid in the design development process. However, utilization of technology is uneven within firms, affecting overall productivity gains. The ability to put together and manage a multidisciplinary team is becoming increasingly critical as firms respond to larger, more complex projects. Designers have had limited experience in such situations.

Table 5-1: Level of Business Development Skills in the Design Sector *cont'd.*

Skill	Level of Ability in the Design Sector
Human resource management — Develop a workforce with the required skills and abilities to achieve the strategic goals of the business on an ongoing basis.	Most design firms do not have a structured approach to human resource management. Design firm owners acknowledged that they are generally poor at integrating new hires. Newcomers are typically expected to "sink or swim," an approach that often lengthens the learning curve. Human resource development, as an integrated process, is virtually non-existent in design firms. Performance assessment systems are rare, and professional development is ad hoc. In the current economy, the typical career model for designers is no longer as valid as it once was. Design firms have yet to develop a new approach. As a result, designers who have attained senior roles have no other option for personal development than to open their own firms, effectively increasing the competition within the sector.
Leadership — Develop a vision, communicate that vision, and influence others to achieve it; develop new approaches to problems and opportunities; foster an environment for innovation and teamwork.	Design firms tend to be hierarchical, with marketing, design, and decision-making responsibilities held closely at the top. Many firms make a clear delineation between partners and staff.
Technology — Assess technologies according to the strategic goals of the business and manage their implementation to ensure successful application.	There is wide diffusion of information in the sector. Yet decisions by design firm managers to adopt technology are often made with little understanding of how the technology will affect the work, of the skills and the knowledge required to do that work, and of the work flow. Consequently, technology is often underutilized.
Quality — Determine what adds value to the clients, and develop systems to ensure clients' needs are met.	Generally, quality control is the domain of partners and owners. Only a small minority of firms, particularly those that have undergone or are undergoing ISO certification, have documented quality standards and expect responsibility for quality control to be shared by all staff.

5.2

MANAGING PEOPLE

Organizational Issues

Design firms frequently are partnerships in which two or more partners share the ownership and direction of the firm. This structure is common in all the design disciplines. Depending on the size of the firm, there may also be one or more associates. The ratio of partners to staff varies widely across the sector.

Although most firms include designers with a range of experience and expertise, the exact mix of skill sets can vary considerably across firms, even firms focused on one discipline. There is no standard organizational or occupational structure in the design sector. Formal job titles are rarely used, and documented job descriptions are even less common. However, design firms generally employ people who, in a more formal structure, would be considered junior-, intermediate-, and senior-level designers. Larger firms may employ technologists as well. Work is assigned to a member of the design team according to level of experience.

The partnership structure can pose strategic problems. By its nature, a partnership requires all partners to share in decision-making. In small firms, where partners have a close personal relationship, this arrangement can work well. However, a partnership can also be slower to respond to opportunities where agreement by the partners is needed before the firm can invest significant effort or expense.

In-house design departments are usually found in larger organizations that have an ongoing need for design services. The in-house design department may be a separate function or unit within the organization, or it may be a part of another function, such as facilities management, manufacturing, or marketing. In most cases, the head of the design department is at the mid-management level; few design departments are led by someone as senior as a vice president.

Generally, design firms do not recognize the impact that finance or marketing, for example, can have on the strategic direction of the organization. Nortel Technology (formerly BNR) and Bombardier are notable exceptions, with vice presidents responsible for corporate design. A mix of staff with different levels of experience allows a firm to take on larger assignments more cost effectively. It also permits the partners to devote more attention to marketing the firm, building client relationships, and seeing to overall project management.

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In-house design departments may be responsible for design development as well as production. In some instances, the in-house design group is responsible for overseeing the work of contract designers. In-house design departments may use design consultants to supplement in-house skills. Many designers view this type of arrangement as a trend for in-house departments, particularly given the recent streamlining of these departments.

Generally, heads of design departments have a design background. They face the same challenges that owners of design firms face; that is, they often lack the management skills to develop the design department as a strategic function within the organization. Some would argue that this lack of visibility is a factor that makes the design department a target for cutbacks in leaner times.

Indeed, changes in corporate structures are having a major impact on in-house design departments. An article in *Business Week* (September 1995) questions whether in-house design is on the way out:

- Decentralizing is leading to a massive outsourcing of design work by large corporations. Independent business units are increasingly turning to outside design consultancies. Sometimes it's in conjunction with in-house company designers and sometimes not.
- The result is a change in the entire function of in-house corporate designers, who more and more are brokers for outside consultants. Increasingly, designers in big corporations play two roles: internal champions for specific products, and integrators who connect outside designer functions with inside functions.

Career Implications

Several issues affecting the careers of designers:

- There are limited opportunities, owing to the size of the majority of design firms, for designers to progress from junior to senior designer within one firm. To progress in their careers, designers often must leave one design firm for a higher-level position at another. As one architect noted, "It is not as easy to make partner as it may have been ten years ago. Opportunities are few. Careers may be developed more by going from one firm to another."
- Newer entrants often find it difficult to break away from the "junior designer" perception that colleagues have of them. They are frequently forced to go elsewhere to progress. Designers at Karo in Vancouver noted that it is very difficult for junior designers to change their image as junior designers. Usually, a junior designer has to change firms to progress to a more senior position.
- Partners hold tight control over marketing, client needs analysis, proposal writing, and initial client liaison, leaving little opportunity for designers to develop those critical skills related to project management and the assessment of client needs.

As well, it is relatively easy to start up a new design firm, particularly when the principal designers have established their reputations. Not surprisingly, then, the career progression of designers tends towards the formation of their own firms.

- As the partners at City Interiors in Vancouver noted, "The firm has a history for progressing people out of the firm." In fact, City Interiors has spawned several other firms. There is a price tag associated with buying equity, and few opportunities are available for new principals in a small firm. The only opportunity is to buy out a principal.

A better structure might entail a flattening of the hierarchy, with more associates or principals who, while not holding ownership positions, share in partner-type activities. This type of structure would provide greater opportunities for designers who are not interested in starting their own firms.

It is also important to consider the issue of succession planning. In many design firms, regardless of size, little consideration is given to who should manage the firm once the partners or principals retire. Often small design firms suffer once the "big name designer" (usually the partner or principal) leaves. Decisions about succession are often based on how well an individual will fit into the existing team. Often the skills and personalities of new employees resemble those of the people who originally hired them. Unfortunately, since changing business trends can require radically different skills and attitudes, maintaining the status quo may not be the best direction for a firm's future success.

- FBM Architects in Halifax has a buy-sell agreement whereby senior partners can sell their shares over a five-year period, starting at age 61, to associates who have not yet reached 61. If the individual retires before 65, these associates are to purchase the retiree's shares in proportion to their individual shareholdings. This model is a way of ensuring succession.

  However, the current partnership is aging, and there are no designers waiting to replace those who retire. The firm has a good name, but it is worth less and less as time goes on. It is unlikely FBM will attract someone who will wait 10 years to become a partner. Rather, the firm will have to bring in someone at the partner level. Finding someone can be a challenge, however. As one partner noted, "Most people who are self-employed do not work well in a team."

More design firms are exploring alternatives to the traditional full-time, permanent relationship.

Employment Models

Historically, the small size of the average Canadian design firm has limited its capacity to take on very large assignments or to export design services. At the same time, economic pressures have left owners less confident about their ability to support permanent employees. As a result, more design firms are exploring alternatives to the traditional full-time, permanent relationship.

Some firms hire designers part-time to supplement or complement the skills of their design teams. Employing freelance or contract designers is another option. Freelance or contract designers are hired project by project, according to specific skills and expertise.

- Irwin Toys uses contract designers to allow for greater flexibility in meeting product demand. By contracting, Irwin can take advantage of specific knowledge and skills when required. Given the rapid change in toys and the breadth of the Irwin product line, there is a need for a wide variety of skills and knowledge. In-house designers may not be able to offer the totality of the skills required.
- Nortel Technology (formerly BNR) often uses contract designers for the more routine design work, freeing permanent staff for work in product innovation.

Advantages to employing either part-time or contract designers include:

- the flexibility of being able to hire specific skill sets and experience;
- the ability to contract for a fixed fee and therefore have more control over costs; and
- the opportunity to have full-time staff work with and learn from experts.

Another trend in the sector is the growth in temporary employment agencies for designers. The use of "temps" in all sectors of the economy has increased, a by-product of reduced overheads. Several agencies have sprung up in the United States that place designers in temporary positions.[1] Although temporary employment has its downside, including uncertainty of tenure and lack of benefits, it fulfills a need and provides employment for designers. It can also provide the kind of variety and experience that a

designer might not get from one position. Occasionally, temporary workers are offered more permanent positions.

There are disadvantages to employing part-time, contract, or temporary designers. The most significant is that, unless a long-term relationship has existed, these workers would not be familiar with the firm's work methods, standards, and clients.

- Forrec Ltd., a theme park design firm in Toronto, has found a way to balance the use of subcontractors with the need to have designers who understand the culture of the design firm. The firm provides office space rent-free to independent designers who give first priority to Forrec, but are also free to pursue their own clients and contracts.

The *virtual* design firm may pose an alternative solution.

The hallmark of the virtual firm, in which people with a particular mix of skills are drawn together for a specific project or set of projects, is its temporary nature. The virtual firm is like other project-specific design teams, except that the team is drawn from a number of smaller or independent firms. The virtual firm is not without structure, but its structure is fundamentally fluid, based on the task at hand and changing as the task changes. Attempts to depict its form graphically tend to use images of molecular structures, rather than boxes or pyramids.

To work effectively in a virtual firm, designers must be good at forming a new team relationship quickly. The virtual firm does not have the luxury of slowly building trust and confidence in fellow team members. Very little time can be devoted to team building, yet the team must function cohesively. Individual designers must have a clear sense of their skills and limitations, be able to communicate them clearly, and be able to recognize how others complement their own skills. This self-knowledge is essential in the marketing needed to develop the virtual firm and to contribute effectively to its productivity.

- eMarché (Electronic Marché), in Toronto, is a new-media production company formed on the principle of a virtual corporation. Teams representing the appropriate design and technical skills are formed according to project requirements, and the firm's co-founder directs the projects from a user-centred focus.

5.3

CONCLUSIONS

1 Business management skills are critical to the development of design firms and the sector as a whole.

- Sound business planning, marketing, and decision-making skills are required to manage and develop a successful design practice. However, the educational system for designers essentially has ignored the worth of these skills.
- Managing a design firm includes managing the people who make up the firm. Good human resource management practices span the life-cycle of employment, from orientation, to career development, to succession planning. The ad hoc approach that many design firm owners take to these activities impedes the productivity of design firms in the long term.

2 The legislation governing partnerships in some provinces may limit formal integration of design firms with firms from related sectors.

- In some cases, legislation restricts the ownership of design firms to a particular profession. For example, some provinces require that the majority of partners in an architectural firm be architects. This restriction may impede the development of multidisciplinary firms, at least at the partnership level.

3 The traditional career model Is collapsing.

- In many design firms, it was not uncommon for someone to start as a junior designer or designer-in-training and work up to a partnership position. Under the current economic conditions, and with the high number of baby boomers, there are fewer partnership positions and more designers-in-waiting. New models are needed to accommodate staff, or the proliferation of design firms will continue.

4 New working relationships will allow design firms to expand their opportunities.

- More and more, designers will find themselves in non-traditional working arrangements, such as virtual organizations. Designers will need to be flexible in terms of the roles they play in such situations, and they will require the skills to build a strong team in the shortest possible time.

Footnote

1 Temporary employees are typically retained for an unspecified time to assist firms during periods of expanded workloads. In comparison, contract employees are hired for a specific project or length of time.

CHAPTER 6

Design, as an academic discipline, is at a time of expectation. World economic conditions are placing great pressure on industry to produce competitively, and the fast-paced development of computing power and, potentially, design technology, portend quantum jumps in design capability. The question is, will design education be able to rise to these challenges

Charles L. Owen, Design,
"Education and Research for the 21st Century"

CHAPTER 6

EDUCATION AND PROFESSIONAL DEVELOPMENT

The designer of the future will be an integrator and a collaborator, working within a highly competitive and fast-paced environment. Designers will be expected to transcend disciplinary boundaries to assimilate information, to extract ideas, and to think critically from many viewpoints. Design education has a significant role to play in developing the designer of the future, but first it must evolve — taking advantage of new opportunities such as technology and sectoral initiatives, and meeting new responsibilities. A critical concern for the sector is whether design education can rise to this challenge.

This chapter examines the post-secondary education system and the professional development infrastructure supporting the design sector, and it considers how well they serve the needs of the sector. The chapter is divided into two sections. The first section, which addresses formal education in design, examines the availability of design programs, the curricula, links within educational institutions and with the design community, the school-to-work transition, and the challenges facing design educators. The second section focuses on professional development and the role of associations and promotional organizations in continuing education. It looks at the range of available opportunities and reviews the issues related to professional development.

6.1

THE EDUCATIONAL FOUNDATION

Changing Traditions

The history of design education is rooted in an arts and craft tradition. However, the new imperatives of design knowledge, as well as the new design skills, are precipitating dramatic changes. Educational visions, technological innovations, and multidisciplinary dimensions in design are all contributing to a much-needed re-evaluation of design education.

Although design educators attempt to position their programs in the current context of industry and academe, program content using terminology such as studio, critiques, shops, portfolios, and juries continue to reinforce an arts and craft culture. This reinforcement continues to be problematic for educational institutions, particularly in terms of striking a balance between teaching design and conducting academic research. Given the tradition of fine and applied arts as a model, personal exploration often substitutes for research, reducing the emphasis on developing a body of knowledge for design.

Design education is under scrutiny in numerous countries, as indicated by discussions with international interviewees.

- The representative from Australia suggested that design courses are insufficient. An attempt at a two-year fast-track degree failed. Although associations accredit design programs, many Australian designers view this system as inadequate.
- In Finland, one of the main concerns about design education is that it is too artistic, too crafts-oriented, and too self-expressive to serve the needs of business.
- In Norway, art-based design and its designers have not been generally well received by industry. The interviewee argued that design education should not be an extension of art education; rather, it must become more technological. To this end, the Technical University of Norway is offering programs in design.
- In Japan, design has not been recognized as a legitimate field of study; the interviewee commented that a higher level of specialized design education is required. The newly established Nagaoka Institute of Design, where the educational philosophy emphasizes original ideas in artistic design, engineering, information, and economics, may help change the perception of design in Japan. Within this approach, design is no longer considered to be contained in art or technology, but is viewed as a distinct discipline.
- The educational system in Germany is often held up by Canadian industry as a model that should be adopted in Canada. But a working group, headed by Dieter Rams, has been established to study the question of how design education must change.

A U.S. report on design education recommended that, to be effective and meaningful, a design education should include:

- conceptual competence;
- contextual competence;
- interpersonal competence; and
- adaptive competence.

The integration of social science courses into design education was suggested as a way of achieving these necessary "competencies." Optional courses should:

- sharpen the social-perception skills of students;
- increase their interpersonal and communications skills;
- promote an awareness of responsibility;

- expand their sense of social responsibility; and
- develop an ability to identify changes as they occur (Salmon and Gritzer, 1992).

Design Programs: An Assessment

There are about 175 community colleges, Cegeps, art schools, and universities across Canada offering diplomas or degrees in design.

Generally, the location of design programs parallels the population distribution of Canada, with the majority of design programs located in Ontario, Quebec, and British Columbia, where the largest proportion of the Canadian population is located. Architecture and communications design are the only disciplines offered in every region of the country. There are no programs in landscape architecture, interior design, and industrial design in Saskatchewan, Prince Edward Island, Nova Scotia, or Newfoundland. Communications design programs are not available in Saskatchewan or Newfoundland. (Appendix G lists the design programs available across Canada.[1])

Although the distribution of programs tends to correspond with the distribution of the population, it does not reflect the distribution of designers themselves. Employment patterns find designers concentrated in central Canada, more specifically in Ontario and Quebec. Design programs located in central Canada thus have the advantage of being able to provide more local employment opportunities for students and graduates.

The majority of design programs are diploma-granting. Few industrial, interior, and communications design programs are offered at the university level. In comparison, all professional architecture and landscape architecture programs are university programs; only technician and technology programs are given by the community colleges.[2] A few community colleges, such as Sheridan College and Humber College, both in Ontario, are establishing articulation arrangements with universities in an attempt to provide a wider range of options to their design students. Such arrangements permit students to use their community college diplomas to receive advanced standing towards a university degree.

Faculty members of design programs suggested that the articulation arrangement initiative was prompted by the perception of students and faculty that employers want graduates of university-level design programs. For communications designers in particular, the dearth of university-level programs makes it difficult for graduates to compete with software engineers, or others in related professions, who tend to have university degrees. Study participants commented that articulation arrangements would improve the "credentials" of design graduates.

LACK OF GRADUATE PROGRAMS

A critical gap in design education is the lack of graduate programs in design.

Although numerous graduate programs are found in architecture and landscape architecture, Canadian universities offer only one graduate program in interior design and three in industrial design; there are none in communications design. All advanced-degree programs are at the master's level. There are no doctorate-level design programs in Canada.

Interviewees noted that the lack of graduate programs undermines the advancement of design research and the development of a body of knowledge for the

Interviewees noted that designers of the future will require a broad educational background, not only in the core theoretical and technical areas of design, but also in business skills, design management, and working in multidisciplinary teams.

discipline. It also impedes the development of Canadian-educated design faculty. Administrators and faculty members commented on the need for multidisciplinary graduate programs in design, with an emphasis on design management. The University of Alberta is the only institution offering a multidisciplinary design program — a master of visual arts, which includes communications and industrial design.

Graduate design education, either multidisciplinary or specialized, was discussed in two Ontario studies: the "Draft Proposal to Establish the Premier's Council on Technology" (Group for Design in Business, 1988/89), and "The Ontario Design Strategy" (Design Strategy Steering Committee, 1994). Both studies concluded that the absence of such programs in many of the design subsectors has affected the maturation of the design professions. It has also meant a missed opportunity to better educate designers.

GAPS IN CURRICULA

There are significant gaps in the curricula of many design programs.

Interviewees expressed concern that the numerous design programs across Canada provide little focus on the needs of the marketplace. They noted that designers of the future will require a broad educational background, not only in the core theoretical and technical areas of design, but also in business skills, design management, and working in multidisciplinary teams.[3]

- **Business skills** — Students should be exposed to the skills required to manage a design firm, such as accounting, business planning, marketing, and project management. Why some firms succeed and others fail is rarely a function of the quality of design work. Rather, the determining factor usually involves the level of business management skills.

  To work in a design firm and to understand the business aspects of design, designers require an appreciation of what it takes to operate a successful design firm. Many students expressed surprise that design firms focus so heavily on completing projects on time and within budget, suggesting that such a focus means sacrificing quality. Design firm owners, meanwhile, are frustrated by the lack of concern that new graduates have for the bottom line.

- **Design management** — Design management focuses on the role of design in business strategy. Recognizing that not all graduates of design programs will work as designers, and acknowledging the need to have designers in positions of management in client organizations, the curricula of design programs should include skills in design management.

- **Working in multidisciplinary teams** — More than ever before, designers are working in teams made up of a range of disciplines in design as well as in engineering, marketing, the social sciences, environmental planning, and other fields. The ability to work in multidisciplinary teams is essential to many projects. Consequently, design education must expose students to business, the sciences, technology, and the humanities, as well as to all the design disciplines.

An assessment of curricula from a sample of design programs across Canada indicates that in almost all instances the foundation courses (design history, design theory, and materials, processes, and structures) are mandatory. Many programs also include a mandatory computer course. Generally, however, programs lack the skills designers will require to be successful in the future. For example, communications design, architecture, and landscape architecture programs often do not address marketing and management competencies. Professional practice courses may cover such skills, but often only according to the interests of faculty members. In contrast, most programs in interior design and industrial design have a mandatory course in business.

This gap in the education of designers is a concern for many designers, from students to practising professionals, as illustrated by the following comments:

- One architect noted, "An issue with education is the split with the ideology and the practice. The business component is a significant component of architecture, and architects need to learn how to do architecture as a successful business."
- A recent graduate in architecture commented, "My education prepared me for composing and executing design. That process has nothing to do with who pays the bills, who does the accounting, or at what point one is liable. No attention in school is paid to budgeting or managing projects to budgets."
- A student in the environmental design program at the University of Manitoba suggested that "there is a sense that it is base to talk about marketing and networking in an altruistic setting such as a university."

Faculty members and administrators commented that they try to educate students in both the subject and the process of design. They are well aware of the importance of such issues as multidisciplinary teams, business, and technology. However, developing new material to fit into the program curricula requires significant resources that are not always available. Therefore, design educators argue, the sector must also take some responsibility for the development of future designers.

In addition to identifying those skills required by all future designers, sector representatives identified specific skills and knowledge that will be required by future designers in each of the sub-sectors:

- Designers in the built environment will also require education in the areas of critical thinking, quantitative research, and designing in a business and social context. These skills do not appear to be addressed in most programs today.
- Future industrial designers will require skills and knowledge in ergonomics and socially responsible design. Many programs include ergonomics; fewer include socially responsible design.
- For communications designers, the greatest emerging skill requirement is in the area of new media. At the moment, communications design programs are in various stages of developing and implementing curricula to meet this need. The cost of the technology is a factor in the pace with which this need is being addressed.

Structure of Design Education

The role of the various institutions in the education of designers is not altogether clear.[4]

The clearest differences between the curricula offered at the community colleges/Cegeps and universities are found in the built environment sub-sector, specifically in the disciplines of architecture and landscape architecture. Community college programs in these two disciplines are at the technician and technologist levels; at the university level, they are professional programs and research programs. Community college programs place more emphasis on technical skills, such as drawing and CAD skills, while university programs emphasize conceptual, contextual, and professional practice skills.

In other design disciplines, the distinction between programs — community college, art school, and university — is less clear. In communications design, for example, the various programs offer similar curricula. Since university programs are longer than community college ones, they can provide greater

Overall, the directions of design education need to be re-evaluated and the role of the various educational institutions clarified. The sector has to work with the educational institutions to determine what they should provide, considering their resources.

breadth or depth and thus have the potential to address more of the skills that sector representatives identify as necessary for the future.

One of the outcomes of the current system is that community colleges, particularly in communications, industrial, and interior design, are struggling to identify priorities, given that the programs are not long enough to teach students what is required from both a theoretical and a technical perspective. Several community colleges are lengthening their programs in response. In addition, some community colleges and art schools are attempting to improve their competitive advantage by seeking degree-granting status. Students may not see the value of attending a community college or an art school for three or four years only to obtain a diploma when they can attend a university for the same time and earn a degree. Moreover, with the increasing necessity to work as part of a multidisciplinary team comes the perception a professional designation brings respect and equality on the team.

- In British Columbia, all community colleges have become university colleges, empowered to grant certificates, diplomas, and bachelor degrees. Kwantlen University College, in Vancouver, is the first to evolve its two-year diploma in interior design to a degree.

Students noted the need for an improved profile of educational programs and what they represent. Many commented on the difficulty they had selecting a program from the wide range of options. In choosing their programs, many students were unclear about the differences between university and community college programs.

Sector representatives commented that students graduating from community college programs often consider themselves to be designers when, in fact, they may not have the conceptual and problem-solving skills necessary to conceptualize design.

- One U.S. author dismisses the vast majority of graphic design programs as vocational training. In general, design schooling has not educated people with a broader perspective who could help to shape a democratic society. Yet adaptability to the changing context and adaptability to change go hand in hand with general education. Design education — if it is to be beneficial to students — must find a balance between skill training and general understanding (Swanson, 1994).
- Another U.S. author suggests that design education be university-based (Owen, 1991). Undergraduate studies should be made up of four- to five-year programs offering a mix of liberal arts and technological education. Graduate programs should either lead towards a specialization or be research oriented.

Overall, the directions of design education need to be re-evaluated and the role of the various educational institutions clarified. The sector has to work with the educational institutions to determine what they should provide, considering their resources.

Ensuring Quality in Design Education

The accreditation of educational programs is an attempt to ensure a consistent standard of education.

Currently, accreditation initiatives exist only for programs in the built environment sub-sector. Each of the disciplines in that sub-sector has an accreditation board, which develops and maintains educational standards and accredits programs that meet those standards.

- The Canadian Architectural Certification Board is responsible for administering the accreditation of the Canadian schools of architecture and for the certification of individuals who apply for licensing. Standards are based on the U.S. standards for accreditation.
- The Canadian Society of Landscape Architecture (CSLA) accredits landscape architecture programs through its accreditation council. Before the CSLA began accrediting programs, some programs were accredited through the American Society of Landscape Architecture.
- The Foundation for Interior Design Education and Research provides a vehicle to accredit post-secondary interior design programs in North America. Both community college- and university-level programs are eligible for accreditation.

Accreditation promotes a consistent standard of knowledge across a discipline and clearly identifies programs who have met that standard. Despite that major benefit, some interviewees were concerned that, in applying the accreditation criteria, institutions may find it difficult to differentiate themselves from one another or to respond to the changing needs of the discipline.

Accreditation initiatives are relatively new in the design sector, and some of the misgivings expressed by interviewees may simply reflect their inexperience. Essentially, the accreditation bodies recognize that their responsibilities include maintaining strong links with practice, and reviewing and revising accreditation criteria so that education programs remain responsive to the needs of the disciplines. Accreditation sets broad performance criteria within which schools are free to exercise whatever creativity they wish.

No consistent standards for education are found in the other sub-sectors. Study participants noted a wide variation in design education across the country as a result.

Links Within Educational Institutions

Links among the design disciplines, and between design and other disciplines, are weak.

A systemic problem in design education is that most programs are centred on a single discipline. Few schools promote close educational relationships between design disciplines, let alone with other faculties such as business, engineering, psychology, or communications. Not surprisingly, designers often lack an appreciation for other design disciplines, which in turn has weakened the links within the sector.

- The author of a 1989 article described the lack of cross-discipline cohesion of the design schools in post-secondary education. The situation was different in engineering and business schools, which saw a much stronger interaction among the

disciplines and, as a result, a much stronger identification with the profession. The disciplines of engineering are almost always offered in the same academic faculty. Thus, although professional engineers may be educated in mechanical, civil, or electrical engineering, all identify with engineering (Krapfel, 1989).

The problem lies in the structure of departments within educational institutions and the positioning of disciplines in these departments. Design programs traditionally have been placed under the umbrella of either engineering or art. Although a few departments do include two or three of the design disciplines, there are no examples of a faculty of design that includes all design disciplines. Generally, the design disciplines are located physically apart from one another.

- The Faculty of Architecture at the University of Manitoba includes architecture, landscape architecture, interior design, and city planning. The faculty is introducing a common two-year core of studies for all four disciplines within the undergraduate level.
- At the Université de Montréal, the schools of Architecture, Landscape Architecture, Urban Planning, and Industrial Design are all part of one faculty. Students from the four disciplines at the graduate level take common courses and routinely work together on research projects. At the undergraduate level, the faculty is considering a common first-year program for the disciplines.
- The Faculty of Environmental Design at the University of Calgary includes architecture, industrial design, and planning.
- The Centre for Applied Design Studies at Kwantlen University College houses the disciplines of interior, fashion, graphic, and visual design. Students take a common interdisciplinary first year.
- At Ryerson Polytechnical University in Toronto, a common undergraduate design program for architects and interior designers, with the opportunity to specialize, is on the horizon.
- The University of Toronto's School of Architecture and Landscape Architecture includes an interdisciplinary program where both disciplines are represented.

On the international scene, the various design disciplines are usually taught separately, although a few innovative examples, such as the following, are found:

- The Netherlands is seeing a shift away from individual design disciplines, taught in isolation, towards a more holistic approach. The European Design Centre has initiated a project for the design school of the future; design is taught in eight departments, each having a theme such as "man and transportation," or "man and home."

The absence of links between design faculties and other disciplines has led to a lack of appreciation for the expertise that engineering or other professions can offer. This situation becomes problematic for designers, since clients are demanding integrated design solutions that require the expertise of multidisciplinary teams of professionals. Design educators need to include multidisciplinary educational opportunities that permit students to work in multidisciplinary teams and develop integrated solutions. Successful models are in place in some educational institutions:

- The Creative Design Research Unit in Toronto brings together students from various departments — mechanical engineering at the University of Toronto, industrial design at the Ontario College of Art and Design, and marketing at Ryerson Polytechnical University — to work on industrial design projects. This program gives students experience on collaborative ventures and exposes them to some of the issues involved in team-based work.
- The Master of Environmental Design program at the University of Calgary provides professional, business, and entrepreneurial management preparation. Students are encouraged to move freely between their own faculty and the Faculty of Management, and they regularly join faculty, students, and profes-

sionals from other disciplines to research and consult on projects. Faculty members commented that these interdisciplinary opportunities provide an excellent "reality check." Recently, the Faculty of Environmental Design entered a formal agreement with the Faculty of Management to allow students from both faculties to pursue joint degrees.

- Links between the architecture and engineering programs have recently been formed at the Technical University of Nova Scotia (TUNS), in Halifax. The school will try to arrange joint classes. A common area of interest is the environment. TUNS also wants to set up joint computer labs for engineering and architecture projects. The Faculty of Architecture is working with the computer science department to develop 3-D models that may lead to ideas in prefabricated building.
- Recently, mechanical engineering students from TUNS joined with communications design students from the Nova Scotia College of Art and Design (NSCAD) in collaborative projects that helped them develop a better sense of each other's talents.
- NSCAD/TUNS and the School of Business at Dalhousie University in Halifax are discussing ways in which they can work more closely.

With the need to respond to the changing design environment, educational institutions are adding "necessary" subjects to already full curricula. The result is that the number of electives is reduced, minimizing the opportunities for students to take courses in other disciplines or faculties. Some interviewees suggested that design programs should be flexible — there should be a minimum number of mandatory courses, with more courses being optional. Interdisciplinary projects could present another approach.

Links to the Community

Few mechanisms are in place to facilitate communication among the design sector, industry, and the educational institutions.

The concern over the relevance of design education programs is deepened by the lack of communication between the design sector and the design schools. While the design sector can be faulted for not communicating with the education sector, the education sector can be faulted for failing to listen when the opportunity has arisen. Nevertheless, links between the education and design sectors do exist, among them the following models:

- Many community college programs have advisory boards made up of representatives from the design sector. The boards provide an opportunity for the sector to clarify its needs and expectations, and for educators to develop links with employers and stakeholders.

  The extent to which these advisory boards are active varies, however. Faculty members commented that the sector could provide input into curricula, organize fund-raising events, and find work placements for students. But study participants noted that, in some cases, advisory boards fail because they are unable to develop a collaborative group process; design educators and sector representatives often lack a sense of shared interest in the success of the collaboration, mutual respect for differences, and a willingness to adapt. In addition, the sector's input into curricula is often not welcomed by the educational institutions.
- Mentorship programs present another form of industry–education linkage. These programs pair students with design practitioners from the community, creating opportunities for students to gain insight into the "business" of design. Students meet

regularly with their mentors, who provide advice on projects and then critique the completed work.

Mentorships also provide an opportunity for students to establish networks in the design community, leading to job opportunities. Students from the University of Manitoba and their mentors commented that the arrangements have been extremely beneficial to both parties.

Mentorship programs require a significant time commitment from faculty, who must find design practitioners willing to participate; from the design practitioner, who must put aside productive time to meet with the student; and from the student, who must fit meetings into an already hectic academic schedule.

- Accreditation programs, which exist in the built environment sub-sector, are another means to facilitate dialogue between educational institutions and the specific design profession.
- Many design programs bring in practitioners to teach part-time or to conduct studio classes. Study participants commented that this practice ensures an ongoing link with the sector and a steady influx of fresh ideas. Although students benefit from the "real world" experiences that part-time faculty members bring to their education, many students commented about the consequent loss in the continuity of program content. In addition, part-time faculty members are not always available to answer questions and to serve as project advisors.

An example of a successful model that bridges this gap between the education sector, the design sector, and industry is the "Partner's Program" at the University of Manitoba.

- The "Partner's Program" was initiated in 1994 to develop links between the University of Manitoba's Faculty of Architecture and the community. The broad mandate is to deal with issues of co-op education, research, and design awareness. The program is managed by a 20-member advisory board made up of three representatives from the faculty, four from the design professions, and 13 from industry (construction, services, and suppliers). To be a board member, a participant must pay a fee to "subscribe" to the program and agree to bring on four new subscriptions. Subscription fees are used to run the program, to bring in speakers, and to operate the student gallery.

  Faculty members commented that industry representatives are pleased to be a part of the program because it offers them a link to the university and the opportunity to work with students. Students become involved in projects initiated by the partners, with the prospect of getting summer jobs and permanent positions.

Some other community-oriented approaches:

- At the University of Calgary, students in the graduate program work with industry in developing products. For example, a group of design and medical students worked with a healthcare organization to develop a new medical instrument.
- At Kwantlen University College, third-year interior design students take on a community project, providing full service to a non-profit client.
- At the Nagaoka Institute of Design in Japan, third-year students participate in community workshop projects with local companies and government agencies to resolve longstanding community problems. Projects are selected according to the community's specific needs.

School-to-Work Transition

There are few opportunities available to help students make the transition from school to work.

For most design graduates, making the transition from school to work is challenging. Few design firms have an orientation program for new designers. Generally, the approach is "sink or swim." Graduates who have some relevant experience can move along the learning curve faster and make a contribution to their firms sooner. Both co-ops and internship programs are helpful.

CO-OPS AND WORK PLACEMENTS

Co-ops and work placements are formal means to practical learning. They give students opportunities to gain industry experience while still in school. In these programs, students are placed with design firms or related organizations for a preset time. Usually, students are supervised by someone at the work site and are expected to complete particular tasks in partial fulfilment of their education. Co-ops and work placements are invaluable ways of providing students with opportunities to learn how a design firm operates and to apply their skills and knowledge. At the same time, they provide the sector with a chance to assess the level of education students are receiving and allow faculty to find out about new directions in the sector.

- Students from Humber College commented that, while they may end up doing "grunt work," most work placements provide an opportunity to develop business acumen, a skill they do not acquire in school.
- Sheridan College and Kwantlen University College have found that work placements often lead to permanent jobs for graduates.
- Some students at TUNS chose to attend its architecture program because of the co-op approach. They believed they would have an advantage in the job market over graduates from schools without co-op programs.

Unfortunately, such opportunities are becoming scarce.

- There is a summer internship in interior design at the University of Manitoba, but it is not mandatory because of the difficulty finding placements.
- Mount Royal College in Calgary formerly offered two co-op sessions in the interior design program, but had to drop one because of difficulties placing students. As well, the program's placements have been expanded to include supplier, show-room, and retail situations.

Many programs include field experience as part of a design student's education.

- At Kwantlen University College, interior design students spend one day a week in the field. They visit design offices and design sites to follow the construction and installation of a project, and they eat at restaurants when working on restaurant design. These experiences provide an essential context to classroom setting.

Although such field experience is invaluable, students still need the opportunity to work in the sector while completing their education; otherwise, graduates will continue to be ill-prepared to transfer their skills to the workplace.

INTERNSHIPS AND APPRENTICESHIPS

For new graduates, internship programs provide a more formal way of bridging the gap between school and the workplace. The internship program is used mainly in the built environment sub-sector, although the level of formality differs by discipline. In architecture, new graduates must, prior to registration, accumulate specific experience under the direct supervision of an employer. This experience is documented in a Canadian Experience Record Book.[5] Formal internships for graduates in architecture exist in British Columbia, Alberta, and Nova Scotia; all the other provinces have adopted a policy to develop internship

support programs. The process is less formal in landscape architecture. Some provinces have experience requirements; other do not. In interior design, the process is emerging: the National Council for Interior Design Qualification is launching a three-year North American-wide internship program in the fall of 1996.

But firms are hiring fewer people, and internship positions are scarce. Where it used to take about three years to accumulate the required experience, today it is not uncommon for architects-in-training to take five years to meet the requirements.

- Graduates in architecture are experiencing difficulty meeting the registration requirements because fewer positions are available for new graduates. In addition, because architectural firms are pursuing a broader range of market opportunities, some of which are outside the traditional boundaries of architecture, it is becoming more difficult for graduates to meet registration requirements.[6]
- Overseas opportunities for architecture students are becoming more common. At TUNS, one-third to one-half of placements are outside of Canada. Many students go to Germany, especially to Berlin, where reunification has led to major construction activity. But students who go to Italy or Spain often work in non-traditional areas of architecture, for example in exposition-event design.

Graduates are having to become more innovative to find opportunities.

- A recent architectural graduate started his own firm, Unloonet Inc. in Halifax, to pursue a market niche he had identified. Because he is not yet registered, he cannot call himself an architect. Legally, he is a special agent. He bids on projects and uses his associates, who are architects, to satisfy the legal and regulatory requirements. Once he is registered, he will be able to be the primary designer on the project. By that time, he will have developed his market niche.

Other examples of innovative initiatives to assist new designers in making the transition from school to work include:

- The Institute of Design Montréal has initiated an apprenticeship program to encourage firms to hire new design graduates. The program was developed to promote the creation of paid apprenticeship opportunities, lasting from six to 12 months. The intent is that the program will create permanent jobs in the design sector while offering graduates the chance to acquire employment experience. The institute will contribute up to $9,000 towards the salary of a design graduate, for one year. The program is being managed by the institute in collaboration with Human Resources Development Canada.
- Circle Design, a communications design firm in Winnipeg, offers a one-year internship program for recent graduates in communications design. Typically, these individuals are exposed to a wide range of projects, supported by a high level of direction and supervision. At the end of the internship program, the firm may choose to hire the intern full-time. Both the graduate and the firm benefit. The graduate receives valuable work experience that can be used to obtain a full-time position; the firm receives an infusion of new ideas without risking a long-term commitment to someone who may prove unsuitable.

Challenges Facing Design Programs

Design educators face a number of challenges that inhibit their ability to offer students the design education they require.

While the design sector is concerned with the currency of design programs and the lack of opportunity for input into those programs, the institutions themselves have other worries.

- **Providing a practical education** — Educators face the challenge of providing a practical education that meets the needs of the sector, given the usual timeframe for design programs. Meanwhile, graduates are expected to have an ever-increasing body of knowledge and skills.

  Education programs should concentrate on design that is relevant to the Canadian market. There is a need for designers to design snowmobiles, for example, but car styling is not a priority here. However, few design schools concentrate on design that adds value to a portfolio in terms of enabling the student to get a job. One reason is that teachers may be genuinely unaware of changes in demand. Another is that many faculty members teach what they were taught.

- **Funding** — Design education is expensive, particularly the studio component with its relatively low teacher–student ratio. Tighter educational budgets mean design programs are often a prime target for cutbacks.

- **Keeping up with and affording technology** — Acquiring new technology is expensive, and most schools cannot afford to keep pace with advances in technology. Administrators commented that it is often difficult to forecast where the sector may be headed in this area.

  With funding cuts at educational institutions, and given the lack of standardization across the design sector in the type of software used, schools as well as individual students cannot afford the plethora of software products in general use. The most they can hope to accomplish is to keep fairly current with software from which skills are transferrable to similar packages used in the workplace.

- **Aging faculty** — Many design programs are faced with aging faculty. Decreased funding means fewer resources available to replace retiring faculty. This situation may lead to greater use of part-time and contract faculty, who are generally design practitioners. The lack of research capability in design programs will thus be perpetuated.

  Another issue is where new faculty will be found. Traditionally, new recruits have come from outside Canada, especially from the United States and Europe. As long as there is a continued supply from outside Canada, there is little incentive to develop the kind of advanced programs here that would incorporate research into the curricula.

- **Pedagogy** — The perception that a competent practitioner is, by extension, a competent teacher is common in many design schools. The reality is that design education will improve only if design educators are better trained.

A large number of faculty members and administrators agreed that the most severe challenge they face is a decline in education funding, which directly affects their ability to deal with other challenges. Most study participants expect the trend of reduced funding to continue. This prospect reinforces the need for the sector to work with the educational institutions to determine educational priorities.

6.2

CONTINUOUS LEARNING AND PROFESSIONAL DEVELOPMENT

Simply graduating from school does not make someone a designer. Education provides a solid foundation of theory and technical skills in a particular design discipline, but becoming a designer is a never-ending process of research, practice, and experimentation. It is not an isolated process. Rather, it is an interactive process involving colleagues from a variety of professions.

Continuous learning takes many forms. It may include the more organized programs, such as continuing education programs that result in credits (for example, continuing education units, or CEUs), or it may involve conferences, seminars, and site visits where designers can learn about innovations in their fields. It also includes the less formal kind of learning that takes place each time a designer accepts a new project. All these opportunities have an important part to play in the development of designers and in the advancement of the profession.

Role of Continuous Learning

Continuous learning is a critical component in the development of a designer

Changes in technology, demographics, markets, and client expectations affect the skills and knowledge required by designers, as well as the ways in which designers work. Competition is increasing, and clients have more choice and are more sophisticated. They are also more aware of the capacity and capabilities of technologies, and they expect designers to bring a greater range of knowledge and skills to a design solution. Designers who are not at the forefront will not be in a position to provide value to their clients. While it has always been important for designers to keep up-to-date, the nature of these changes and the pace at which they are occurring make it critical for designers to continue their learning throughout their careers.

Professional development is important for other reasons; most notably, it is in the public interest to ensure that professional competency is maintained.

New learning needs require innovative approaches to continuing education. Today, with some of the provinces looking towards mandatory continuing education for some disciplines, the professions must take a proactive stance on this matter.

Opportunities in Continuing Education

Although a wide range of formal learning opportunities is available, the opportunities often do not match the needs of designers.

More formal continuing education for designers is available from a number of sources, including professional associations, promotional organizations, private industry, and educational institutions. Some of the design promotion organizations offer lectures and exhibits, which are also available to the general public. Trade shows and manufacturers' seminars are venues for learning about new technology.

The majority of continuing education programs are planned and run by the provincial associations, with no coordination across the country. Although this approach provides programs geared to the needs of the specific regions, it has resulted in the preparation of similar types of programs with few economies of effort in the transfer of concepts and course ideas across regions. This is a major concern given the lack of available funding.

Programs are offered in only the large centres, and individuals who live outside these centres incur further costs for travel and accommodation. Another consideration is that since designers must take time from work to attend continuing education programs, firms tend to limit these opportunities to principals or partners.

A national approach would reduce the resources required, at least for design development and promotion, while assisting the smaller associations, which often must rely on volunteers. Distance education, Internet, CD ROM, and video or audio conferences might be explored as ways of reaching more people, especially those in remote areas.

Numerous interviewees reported that the programs offered by their professional associations do not meet their needs. Although the professional associations generally do a good job of providing technical types of programs, designers still require management and other skills. Basic finance and accounting skills are often learned on the job. Many designers noted a need for training in marketing and exporting: identifying markets, conducting market research, and determining how to access and service the market. Others noted training needs in communication skills, information management, project management, and environmentally responsible design. Designers also confessed to an inability to manage staff. While many general courses are available through the continuing education departments of local community colleges and universities, designers want courses that are tailored more to the design sector. In addition, designers noted, many of the university courses are expensive. Some designers commented that the conferences and seminars offered by other professional associations, such as the engineering and planning associations, are more valuable than those offered by their own.

A national approach would reduce the resources required, at least for design development and promotion, while assisting the smaller associations, which often must rely on volunteers.

To better meet the needs of their members, and to be able to provide a broader range of programs, some associations, for example, the Interior Designers of Canada, have forged alliances with their U.S. counterparts. Not only do they encourage participants to attend courses in the United States, but, if interest seems high, the associations will sponsor a speaker to appear locally. Cooperative ventures between the design associations and other associations should be encouraged both to reduce costs and to expose designers to other disciplines and professions.

Table 6-1 summarizes the state of continuing education by design discipline:

In the United States, legislation in some states requires members of industrial design and interior design associations to complete a predetermined number of hours of professional development over a particular period to retain their professional qualifications. Although no such legislation exists in Canada, consideration is being given to this approach by some associations, including the Interior Designers of Canada and some provincial architecture associations, to ensure minimum standards among designers. But designers in more remote parts of the country, where access to educational institutions offering acceptable programs is limited, have concerns about such a requirement.

Generally speaking, designers embrace the idea of continuous learning, but several factors inhibit their efforts to participate in organized events. Some of the most significant of these include:

- the number and types of courses available;
- the time needed to participate;
- the location of courses; and
- the cost of participating in professional development programs.

As a result, designers place greater emphasis on more informal means of continuous learning.

Development Through Practice

An important aspect of a designer's development is the learning that takes place on the job.

Most of a designer's learning is likely to result from practical experience, including research, on a variety of projects. Suppliers also play a significant role in the ongoing education of designers by providing information, seminars, and on-site demonstrations. Many design firms have bulletin boards on which suppliers leave information about new products. Finally, although reading journals has long been the favoured means of keeping up-to-date, it is fast being replaced by "surfing the Internet."

The approach by Canadian designers to professional development does not differ significantly in other countries. For example:

- The interviewee from *Design World* magazine noted that in Australia continuing education in design "amounts to reading a lot"; it is not a structured activity. One of the biggest issues is centred on software and keeping up with new developments. Most continuing education is on-the-job learning.
- In Denmark, designers keep up-to-date with changes in the field through the practice of design itself. As well, the Danish Design Centre offers designers training courses and literature on specific topics.
- In the United Kingdom, the Design Business Association (DBA) offers ongoing courses and seminars "to keep members informed of all design-related issues." The DBA also runs a series of professional practice training courses throughout the year.

Table 6-1: Summary of the State of Continuing Education in Design

	Architecture	Landscape Architecture	Interior Design	Industrial Design	Communications Design
Associations	Local meetings include speakers, and/or hands-on practice on new applications, e.g., software/hardware Symposia and exhibitions through the RAIC and provincial associations RAIC Industry Technology Advisors organize technical seminars through the Building Envelope Councils	A national conference is held in cooperation with a provincial association approximately every 18 months Seminars are provided on the day before the conference Have held joint programs with deans of architecture	IDC offers courses in cooperation with U.S. professional associations Highly structured CEU program: courses and instructors must meet quality standards Participants given CEU credit registered in U.S.	Larger associations have programs Association of Canadian Industrial Designers (ACID) organizes conference every two years or so	National conference held every few years Courses offered at a chapter level
Other Sources	Lectures by peers at the local level Site visits: provincial associations organize visits to view the work of architects Courses offered at architecture schools across the country Provincial associations offer a variety of continuing education opportunities to their members. These may vary from sparse in less populated provinces to well developed in the most populous provinces	Lectures by peers at the local level Journals (U.S. journals are well respected) Trade shows in Canada and the U.S. U of Guelph just beginning distance education programs	Lectures by peers at the local level Suppliers and manufacturers provide training and demos for practitioners Regional markets offer seminar programs, e.g., IIDEX, Designers' Weekend	Suppliers and manufacturers provide training and demos for practitioners Journals (mostly from Europe and the U.S., but some Canadian)	Suppliers and manufacturers provide training and demos for practitioners

Table 6-1: Summary of the State of Continuing Education in Design *cont'd.*

	Architecture	Landscape Architecture	Interior Design	Industrial Design	Communications Design
Topics in Demand	Advances in technology Practice development skills New forms of project delivery (design-build, project management, construction management) Environmentally responsible design and building science methods	Advances in technology Marketing, business skills and practices	Advances in technology Marketing, business skills and practices Advanced courses in design Professional matters, e.g., building codes	Advances in technology Business skills and practices	Advances in technology Professional matters, e.g., copyright regulations, producing film for printing (and the related liability issues) Marketing
General Issues	Many architects concentrated in large centres where numbers allow programs; however, needs of those in remote locations not addressed Only the AIBC has an active professional development program at this time	Programs hit and miss Small associations with few resources	IDC looking to form liaison with American Institute of Architects on some common topics	Lack of record (no list or transcripts kept of conferences) Little scholarly research done or documented so that practitioners can learn from each other No central list of recommended courses exists	Few resources at the local level to organize events
Drive Towards Mandatory Continuing Education	In Manitoba, a policy regarding mandatory continuing education was adopted in 1994 and is being implemented; members will be required to take three seminars per year	No requirement; at national level, trying to push concept of "self-regulation" Practitioners in Alberta may be affected by Omnibus bill proposed by architects	Recommend each practitioner take at least .5 CEUs a year (5 hours of courses)	Most associations too fragile to impose requirements (would lose members)	No requirement

Improving Opportunities for Professional Development

Professional development can be advanced through a number of initiatives:

- provincial associations at the sub-sectoral level working together to provide a comprehensive professional development program;
- design associations working together at a national level to provide cross-disciplinary professional development opportunities, such as conferences and symposia;
- design associations working with other professional bodies, such as engineering and planning associations, to provide opportunities for designers to develop multidisciplinary team skills;
- design associations publishing conference proceedings;
- design associations using technology to make professional development more accessible to designers.

6.3

CONCLUSIONS

1 There is a proliferation of post-secondary design programs, with little focus on the needs of the marketplace.

- Design educators commented that while they are aware of the needs of the sector, making changes to curricula to accommodate changing demands can take time and money that are not always available. Educators are also struggling to provide a solid education in the timeframe available. Within this context, there is a need to refocus design programs. The sector needs to work with the educational institutions to determine what they can best provide, in light of their resources.

2 The structure of design education impedes communication between design disciplines, and with other professions.

- Students from one design discipline are not exposed to students from other disciplines or other professions. As a result, they do not readily develop either an understanding of the roles of all the disciplines, or the capacity to work in multidisciplinary teams. Designers today are being asked more often than ever to work as part of a multidisciplinary team. To date, few design programs encourage and foster such links.

3 Links between design schools and the design community are weak.

- Consequently, there is a growing gap between the needs of the design sector and the competency of the graduates of design programs. Accreditation, advisory boards, and mentorship programs can strengthen the links between school and community. There are a few innovative initiatives to involve the design sector and business in education, especially in architecture. On the whole, more initiatives need to be established to bring together the educational institutions and the design sector.

4 Making the transition from school to work is becoming more challenging for design graduates.

- Access to co-op and work placements is declining. Students require opportunities to hone their skills in the sector, or they will continue to be ill-prepared to transfer their skills to the workplace upon graduation.

  Internship opportunities are also declining. The design sector must make a commitment to providing students and graduates with opportunities to hone their skills and learn about working in design firms. There are some innovative examples that could serve as models.

  The design sector needs additional resources to strengthen existing mentorship programs and to introduce new ones.

5 There is little coordination of professional development activities across the country.

- In Canada, most continuing education programs are planned and run at the provincial-association level. This approach is costly overall, since associations often end up "reinventing the wheel." Partnering with other design associations and with associations for other professions could be more cost-effective. Such coordination would also make a broader range of professional development activities available to all designers.

6 Access to professional development opportunities Is a major issue facing designers.

Several issues relate to access, including:

- the number and types of courses available;
- the time needed to participate;
- location of courses;
- the cost of participating.

Most professional development activities are offered in major urban centres and by traditional modes of delivery. More convenient, flexible methods for delivery — for example, videos, video conferencing, computer-based training, and the Internet — are required to provide professional development for all designers, particularly those in remote areas.

- The proceedings of conferences and symposia should be documented. Published proceedings would contribute to a body of information about the design sector while providing an important source of material for professional development.

Footnotes

1 Design programs are often difficult to identify because they tend to try to distinguish themselves from one another by adopting unique program titles. A number of the diploma-granting programs included in Appendix G are technology or technician programs.

2 The RAIC syllabus offers an alternative to university education in architecture. Through a directed, self-paced program of academic studies, design studios, and practical experience, a candidate can obtain a diploma in architecture. Academic studies are completed through home study.

3 Working Group members defined a broad design education to include research, form-giving, materials/processes/structures, design history, design theory and philosophy, computer technology, business principles and marketing, professional practice, communications, and conceptual and problem-solving skills.

4 The programs selected for analysis reflect a broad range of design programs in community colleges, Cegeps, art schools, and universities.

5 The Canadian Experience Record Book was recently revised to provide a more flexible system to record eligible experience.

6 Once the candidate has met the requirements specified in the Canadian Experience Record Book, with approval by the provincial association, the candidate is eligible to write the licensing examination. Many provinces have put into place registration courses to assist their interns in preparing for their licensing exams.

CHAPTER 7

Design is not in my judgement, something special, fragile,…something which demands aesthetic judgements from panels of learned outsiders. Neither is design an activity which can be picked up and put down, added on at the last minute…Design is a significant, potentially powerful management resource, susceptible like every other management resource to intelligent direction and control.

Wally Olin, "Design Management in Practice"

CHAPTER 7

ISSUES AND ACTIONS

Tremendous opportunities are available to Canadian designers, both in Canada and abroad,to leverage their strengths in the design of leisure, household, environmental, communications, and health-care products; new-media and wayfinding systems; and multi-use facilities, including malls and tourism facilities. Opportunities are rich for Canadian designers to contribute to the economic development of numerous industries. But to take advantage of these opportunities, and to achieve its vision of 2006, the design sector must address a number of human resource challenges that it is facing. Meeting these challenges is complicated by several factors.

- The sector is composed primarily of small design firms and independent design consultants.
- Traditionally, the design sector has educated practitioners according to individual disciplines. The sector's track record of interdisciplinary communication is limited.
- Membership in the associations varies widely. The majority of architects are represented by their associations, while only a small proportion of communications designers belong to equivalent bodies. Communication with non-members will be difficult.

The design sector has, however, taken steps to become more unified. The last few years have seen the emergence of a number of new design promotion organizations, from British Columbia to Atlantic Canada, whose activities complement those of the existing professional bodies. These organizations, whose focus is multidisciplinary, serve as an integrating force in the sector. In most provinces and regions, they are already working closely with provincial educational and research institutes; in British Columbia, Ontario and Atlantic Canada, they have spearheaded the development of provincial design strategies, attracting the attention and support of their provincial governments.

The formation of the National Design Alliance (NDA) has provided Canada with the cross-country link for both the promotional and the professional design organizations. For the first time, there is a national mechanism for cooperative action by the sector. While the NDA's member organizations involve architects at the provincial level, at the national level the Royal Architectural Institute of Canada (RAIC) and the NDA also have begun to explore mechanisms for cooperation. A national network of design organizations exists that can provide effective leadership for change. In fact, the first steps towards development of an implementation plan for the study's recommendations have been taken jointly by the NDA and the RAIC.

In this final chapter of the report, the Working Groups present their recommendations for addressing the human resource challenges as the sector advances towards its vision. The recommendations put forth by the Working Groups provide direction for the development of a human resource strategy for the design sector. The overall goal of these recommendations is to improve the demand for design. More specifically, the actions strive:

- To increase design utilization by Canadian business through promoting design, developing policies to encourage use of design, developing awareness of design in Canada's current and future managers, and developing the skills of designers in demonstrating the economic value of their talents to potential clients.
- To develop the skills of designers to manage their design firms, and to market their competencies both in the domestic and the international marketplace.

A summary of the key issues and the recommended actions is presented in Table 7-1.

Table 7-1: Summary of Issues and Actions

Issues	Objectives	Actions
Design Utilization	• To develop a design-literate market	• Undertake a national promotional campaign • Encourage design champions • Include design management in the curricula of graduate business schools and management development programs • Include design management in the curricula of design education and professional development programs
	• To sustain a design-literate market	• Include design in public school programming
Design Education and Continuous Learning	• To develop the links to facilitate change	• Strengthen the links between design education and practice
	• To create a solid foundation for design education	• Refine and communicate the objectives of design education
	• To foster a multidisciplinary approach to the design development process	• Increase the extent of multidisciplinary learning in design programs
	• To facilitate the transition to the workplace	• Develop/strengthen internship programs for new graduates
	• To encourage continuous learning	• Improve access to professional development
	• To encourage design research	• Document the results of design • Develop graduate programs in design
Managing and Developing Design Firms	• To develop the business skills of Canada's future and present designers	• Include business management principles in the education of designers • Provide professional development in business management and in domestic and international marketing • Develop business management models and tools for design firms
Policy and Legislation	• To create a legislative environment that supports design	• Create consistent, relevant, and progressive policies and mechanisms to enhance market development • Ensure that Canadian design is an important element in government-sponsored design competitions and in commissions for the procurement of products and services
	• To develop the professional regulatory framework for the design professions	• Evaluate the costs and benefits of professional regulation

7.1 DESIGN UTILIZATION

Although Canada has numerous successful designers and design firms, the design sector, with the exception of architecture, remains virtually unknown among Canadian business, members of the general public, and governments. Relatively few Canadian companies see innovative design as a key to differentiate themselves from their competitors. Designers lament the fact that many products come to market, buildings are constructed, and communications are published with virtually no professional design input. The opportunity for the design sector to play a critical role in Canada's competitiveness is tremendous. The challenge is for designers to stimulate Canadian business to treat design as a core element of business strategy.

Developing a Design-Literate Market

Undertake a national promotional campaign.

To create awareness and understanding of the role that design can play in business across Canada, the sector should undertake a national promotional "campaign." This campaign should be flexible so that regions and municipalities can focus on particular market niches. It will be necessary to identify and develop different messages that address the needs of different audiences, such as large corporations, small and medium-sized businesses, and educators. Using the "language" of the audience will be an essential part of delivering the messages. The campaign can include a variety of actions, depending on the audience. These actions must focus on the value of design and on the results that can be achieved through design.

- **Case studies of success stories** — The sector should develop case studies that describe how design has contributed to the improved performance of clients, and how design has benefited their user groups. Case situations need to be specific to the particular design firm and client. The cases could be used in the media and at trade shows to promote the value of design to businesses and governments. They could also be used in graduate-level business programs. As well, the case studies could be published and distributed through mainstream book stores for availability to businesspeople and the general public.
- **Coverage of design in non-design-focused media** — Getting the business media to take an interest in the design sector has been a struggle. A major gain was made when *The Globe and Mail* decided to provide regular coverage of design activities. The sector needs to broaden such coverage to other publications that target the audience for design services, such as industry-specific journals, and it should provide articles and case studies for consideration. As examples, the director of the architecture program at the University of British Columbia was instrumental in the hiring of an architecture critic at the *Vancouver Sun;* in Quebec, IDM initiated the creation of a design page in Le Devoir. A design champion from each of the other provinces or regions needs to take on this initiative.
- **Travelling design exhibitions** — The sector, in cooperation with Canada's public museums and design promotion organizations, should organize touring design exhibits in Canada and to international destinations. Emphasis should be on exposing people across the country to the economic benefits

and business applications of design. Private-sector funding likely will be required. The Department of Foreign Affairs and International Trade (DFAIT) often contributes to such initiatives, and the sector could work with DFAIT to ensure that Canadian design is showcased in trade offices around the world.

Encourage design champions.

The sector needs more vocal design champions who will ensure design is on the agenda of business and governments, and in front of the public.

- The faculty members of the landscape architecture program at the University of British Columbia have been active in task forces and planning commissions, and, as a result, have raised the profile of landscape architecture with the city council. They are also in constant contact with the media.
- A faculty member of the architectural program at Carleton University has developed a following among the general public through the broadcast of his classes on local cable TV.

The sector needs to promote these types of activities and encourage the undertaking of similar initiatives. It would be particularly beneficial for design champions to be users of design and of designers.

Include design management in the curricula of graduate business schools and management development programs.

The lack of understanding that managers have of the design function as well as of the value of design is a problem perpetuated by Canadian graduate business schools. Generally speaking, design is not addressed in their curricula. Schools in the United States, such as Harvard University, recognized this gap some time ago and have now integrated design management principles into their curricula through the use of case studies. The design sector in Ontario has taken steps through the Design Exchange, as well as through the "Design for a Strong Ontario" report, to work with graduate business schools in introducing design management concepts into curricula.

The sector needs more vocal design champions who will ensure design is on the agenda of business and governments, and in front of the public.

The design sector should identify an appropriate model and assist Canadian graduate business schools in adopting it, perhaps working with the association of deans of business schools. One way to generate a high profile would be to focus on design issues in cases used for business-case competitions. Setting up joint projects between business and students could be another way of introducing management concepts.

In addition, several business schools in Canada, for example the University of Western Ontario and Queen's University, as well as other institutions such as the Banff School of Management, offer intensive management development programs for mid-level and senior-level managers. The sector should work with the directors of those programs to introduce design management concepts into the curricula so that existing managers are sensitized to the role design can play in corporate strategy.

Include design management in the curricula of design education and professional development programs.

An evolving role for designers is in design management, either as advisors or consultants to senior management of client organizations, or as in-house design managers. These are valuable opportunities for getting design on the agenda of corporations, with potential for increasing the demand for design. Greater emphasis, therefore, should be placed on developing design management skills. These skills need to be included in post-secondary design educational programs and in professional development programs.

Sustaining a Design-Literate Market

Include design in public school programming.

To build and sustain awareness of the value of design, design needs to be included in the curricula of elementary and secondary schools. The design sector should work with schools to determine ways through which design can be integrated into the existing curricula. The intent is not to expand an already full curriculum, but to incorporate into a curriculum the skills used in the design process — for example, investigative, problem-solving, lateral-thinking, and creative skills.

The Design BC program discussed in Chapter 4 is a model that designers should encourage other jurisdictions to adopt. Other examples include the "Architects in Schools" program of the Architectural Institute of British Columbia, and the "Architecture Goes to School" program of the Saskatchewan Association of Architects. Again, design champions in each province or region need to take responsibility for instituting the projects.

7.2

DESIGN EDUCATION AND CONTINUOUS LEARNING

Design is about discovery, creation, and innovation. In this context, the career of a designer inevitably includes continuous learning. A vibrant design community needs an integrated, yet flexible, system of life-long learning, extending from the initial degree and diploma programs through graduate programs and ongoing professional development. The goal is that Canadian designers will have a more rigorous design education, will continue to develop their own design competence, and will contribute to a growing body of knowledge of design.

Many but not all of the components of such life-long learning are in place, with numerous institutions offering entry-level programs in design disciplines. The extent to which these programs meet the needs of the design sector is questionable, however. In fact, the design sector is generally critical about the responsiveness of the educational system to its needs.

Developing the Links to Facilitate Change

Strengthen the links between design education and practice.

To ensure that graduates have the skills and knowledge required to contribute to the success of the design sector, the sector needs to develop strong, effective links with the post-secondary educational system. Although most community colleges have a mechanism for sector input, namely advisory committees made up of representatives from the sector, the extent of their involvement in decisions about curricula varies widely. Universities do not have a similar mechanism, and traditionally have been less responsive to input by industry to their curricula; however, accreditation programs necessitate these links.

Successful models exist for communication between design practitioners and educational institutions; the initiatives undertaken by the faculties of Architecture at the universities of Manitoba and British Columbia (Chapter 6) offer one example. The sector needs to develop more of these types of partnerships. The involvement of faculty in the delivery of professional development can build and reinforce such links. The sector should approach the educational institutions to discuss its ideas for participating in the education of designers.

Creating a Solid Foundation for Design Education

Debate and confusion abound over the roles of universities, art schools, community colleges, and Cegeps in supplying designers to the design sector.[1] Community college/Cegep programs vary considerably in length and quality, although these institutions all tend to hold out their graduates as designers. The Working Groups concluded that design education programs have to be strengthened, both in the theory and in the practice of design.

Refine and communicate the objectives of design education.

Before the post-secondary educational institutions can reconfigure design programs, they need a clear and succinct definition of the outcomes expected by the design community. This definition should be outlined in terms of the competencies required for entry to practice (see the discussion in Chapter 6). The requirements for design technologist roles should be distinguished from those for the design professional.

Once quality standards and learning expectations are defined, programs that meet the standards can be accredited.[2] The accreditation process should differentiate between community college/Cegep and university programs, with community college programs geared to design technology occupations (as they are in architecture, for example), and with a minimum four-year university program for professional designers. The accreditation should also look at the practical learning built into programs, and at the strengths of the programs' links to the sector.

Fostering a Multidisciplinary Approach to the Design Development Process

There is a strong trend towards multidisciplinary teams consisting not only of designers from the various disciplines, but also of specialists from engineering, business, anthropology, psychology, and other fields. Yet design education has tended to be single-disciplinary. Within educational institutions, the design disciplines tend to be isolated from one another, not only by physical location, but also through attitude. Links among the design programs within an educational institution are limited, if they exist at all. Students from one discipline do not develop an understanding for the other disciplines or the capacity to work in multidisciplinary teams.

In addition, links between design and other faculties generally are weak. It is difficult for practising designers to work effectively with designers from other design disciplines and with people from other educational backgrounds when their entire education program has, essentially, geared them to talk only to their immediate peers.

Increase the extent of multidisciplinary learning in design programs.

Both structural and programming changes are needed to respond to this issue. Design disciplines within an institution should have formal structural connections, and preferably be within one faculty. The programs should encourage and support cross-discipline studies so that students develop team skills, preferably through practical, project-oriented activities in which they *learn to work* with the other disciplines rather than just *learning about* them. Links between design faculties and other faculties, such as engineering, business, and psychology, must be reinforced to provide significant interdisciplinary educational opportunities.

There are a number of possible models. Single-discipline programs should have interdisciplinary studio courses and projects that include students from other design disciplines. A more thorough approach is

to offer an interdisciplinary first degree. Although some institutions, such as the University of Manitoba, have interdisciplinary first degrees, none includes all design disciplines.[3] Design programs must also include projects that incorporate students from other faculties, such as psychology, business, and engineering.

Facilitating the Transition to the Workplace

Many designers commented that their first full-time job after graduating was an unsatisfying experience. They were plunged into an unfamiliar environment, with little direction. These same designers recognize that they have perpetuated the situation. Few design firms have an orientation program for new designers, and even fewer have a structured on-the-job training program. The typical approach is "sink or swim."

Develop/strengthen internship programs for new graduates.

Some of the disciplines in the built environment sub-sector have internship systems to facilitate the school-to-work transition. In some cases, programs need to be strengthened. For example, only some landscape architecture associations have structured internships for new landscape designers. In the case of architecture, the role of the mentor should be reinforced (or introduced) in each province, as part of the experience-reporting requirement.

The other two sub-sectors do not have formal internships as part of the development process, although in interior design the process is emerging: the National Council for Interior Design Qualification is launching a three-year North American-wide internship program in the fall of 1996. The two sub-sectors should adopt (or adapt) the approach taken by architects. This initiative could entail developing a standard training approach that employers could use to ensure that new graduates acquire, as quickly as possible, the skills and knowledge required to:

- contribute to the success of their employers' firms;
- set a sufficiently broad foundation for their careers.

Components might include a training guideline with learning expectations and performance standards to guide the on-the-job training process, as well as guidelines for mentors.

Encouraging Continuous Learning

Professional development for designers takes place largely in the course of the research and experimentation demanded by a variety of actual projects. Still, these activities are not enough to keep designers up-to-date with the changes affecting their work, especially technological changes. Although designers acknowledge their need to develop particular skills and knowledge, they reported several barriers to professional development, including:

- **Location** — Programs tend to be offered in major urban centres. Designers outside those locations face additional costs.
- **Cost** — Some programs are expensive. Small firms often cannot afford to send participants, especially when the programs require travel.
- **Time** — Designers commented that they do not have time to attend too many courses and seminars.

Many look at the time spent away from their work as an opportunity cost. Comments from the president of the Association of Professional Design Firms in the United States strongly confirmed this view. Paraphrasing his words, it is not a lack of will on the part of designers that prevents them from pursuing further education; it is a question of opportunity cost, or opportunities lost.

Improve access to professional development.

Better coordination of professional development activities among the design associations, at both a subsectoral and a sectoral level, and with other professional associations (engineering and planning, for example) would enable designers to take advantage of a wider range of professional development activities more economically. Professional development events that include all design disciplines as well as related disciplines would help to build an understanding of other disciplines and professions while encouraging multidisciplinary opportunities.

Technology, including videos, video conferencing, CD ROM, and the Internet, may make professional development opportunities more accessible to people in remote areas. A web site could be developed to disseminate information. In fact, some design organizations, including Design Now in British Columbia, have created web sites already. These technologies make location irrelevant and reduce the time and cost of professional development. The sector is urged to use these technologies to improve access for all designers to professional development.

Encouraging Design Research

Design research is fundamental to the development of the design profession. It enables learning and evolution of the practice of design. Designers by nature are innovative, but without rigorous research the standards of practice will evolve more slowly. If each designer has to figure out what works and why, or what does not work and why not, there will be a tendency to stick with an existing range of solutions. Without published research, the knowledge of evolving best practice will not be shared across the community.

Design research should be collaborative and multidisciplinary, reaching beyond the design disciplines to include researchers in business, engineering, psychology, and anthropology. Design research also requires a blend of applied and "pure" research, with an emphasis on the practical aspects and the practice of design.

Document the results of design.

Designers must be encouraged to document the impact that their design solutions have on their clients' organizations. The sector should develop refereed journals that publish the results of research, and should publish case studies and conference proceedings.

Develop graduate programs in design.

Although it is clear that graduates of design programs continue to develop their design capabilities through practice, the absence of graduate design programs is a definite gap in the design education system. For designers who wish to pursue graduate degrees, few opportunities in Canada are found at the master's level, and none at the doctoral level; and only one of the master's-level programs is multidisciplinary in its approach. Since graduate schools require faculty to have advanced degrees and require research to be undertaken, the availability of local graduate programs would contribute significantly to the development of a body of knowledge on design.

7.3

MANAGING AND DEVELOPING DESIGN FIRMS

Designers need to develop the skills to manage and develop their firms. Design firms typically are small businesses, founded and managed by designers who, for the most part, do not have any education or training in managing a business. Typically, designers rise through the ranks of design firms to become partners, or they open their own firms after having developed their design expertise. They learn how to manage their firms simply by doing it, an approach that lengthens the learning curve and can result in ineffective management practices. Marketing practices generally are reactive and passive. Few designers have the capacity to uncover new market opportunities, or to engage in international marketing research and market development.

Although it is unrealistic to expect students to graduate with all the competencies required to manage and market a business, some appreciation of these skills is essential. The educational system for designers, especially at the university level, seems to have underestimated, and in some cases ignored, the importance of business management and market development skills. Furthermore, little attention is paid to project management. Consequently, students and graduates have an unrealistic perception of the work in a design firm. Many express surprise and dismay that design firms focus so strongly on completing projects on time and within budget, assuming that means sacrificing quality. Design firm owners and partners are frustrated at the lack of concern new designers have for the bottom line.

The actions involved in addressing this issue lie in the education and professional development of designers. Because management is so important to a designer's capacity to take advantage of the many opportunities facing the sector, the issue is addressed separately.

Developing the Business Skills of Canada's Future and Present Designers

Include business management principles in the education of designers.

Post-secondary design education programs must address the areas of business management and market development. The sector should identify the specific knowledge and skills required of graduates in this area (as part of the development of quality standards and learning expectations outlined in section 7.2), and should work with educational institutions to incorporate these principles into curricula.

Provide professional development in business management and in domestic and international marketing.

The sector should identify existing courses and seminars in these areas, and adapt them for the design sector. The approach should be multidisciplinary, with examples and cases that span the disciplines.

Develop business management models and tools for design firms.

So that designers are not "reinventing the wheel," the sector should examine existing business management models and tools, such as succession-planning tools, time-reporting systems, financial management and reporting systems, and career development models, that can be adopted or adapted by design firms. Many of these models and tools are available in other professional firms, such as accounting, law, and management consulting. Useful management tools have already been developed for the architecture, engineering, and construction industries; these could be adapted for the other design disciplines.

In addition to providing management models, professional and promotional design organizations could establish a diagnostics program to identify areas for improvement, and a counselling service to help designers use the models and tools.

7.4

POLICY AND LEGISLATION

Creating a Legislative Environment That Supports Design

The design sector requires progressive policies and legislation that encourage the use of design. Specific policies related to the design sector are lacking.

- Design per se is not a criterion for consideration in government procurement policies (the exception is for architecture, although the importance has been eroding over the past 10 years). Moreover, procurement processes fail to comprehend the design development process.
- There is little in the way of funding for research in design. Design research is not recognized adequately by either the Social Sciences and Humanities Research Council or the Natural Sciences and Engineering Research Council. Research and development tax credits do not explicitly recognize design expenditures, except in Quebec. The overall result is that the sector lacks a body of knowledge about design.
- Design protection is difficult and costly to obtain, and copyright legislation has not kept pace with technological advances that affect the production and distribution of designs.

Create consistent, relevant, and progressive policies and mechanisms to enhance market development.

The sector, through the associations, must work with government representatives to develop awareness of design and of the value in developing policies, such as support for research, that will enhance the sector. To avoid the proliferation of ad hoc solutions, the design sector must take steps to improve communications among all levels of government. Part of this process might include establishing a network of people involved in design policy throughout governments to achieve a more integrated approach to policy development.

Ensure that Canadian design is an important element in government-sponsored design competitions and in commissions for the procurement of products and services.

The sector should work with governments to develop consistent guidelines for governments and design associations to use in design competitions. These guidelines should include a clear definition of the design criteria to be used in larger projects. For example, guidelines might state that architects cannot participate in government-sponsored design competitions unless the competition has been approved by the provincial association(s). The results of such competitions should be documented, publicized, and marketed as a way of promoting the benefits of design.

Developing the Professional Regulatory Framework for the Design Professions

Regardless, professional regulation is a means of developing an identity, and could benefit those disciplines that are not covered.

All the design disciplines are regulated to some extent, but architecture is the only design profession governed by a licensing regime. Other disciplines have title acts, although not all disciplines have them in all provinces. For example, only in Ontario are communications and industrial designers covered by title act. Practitioners cite the primary benefits of professional regulation as standards of practice and public recognition of those standards. They note that the costs to maintain and administer the regulatory regime can be high, however, if it is self-governing. Regardless, professional regulation is a means of developing an identity, and could benefit those disciplines that are not covered.

Evaluate the costs and benefits of professional regulation.

The design disciplines need to examine the benefits of professional regulation. For those disciplines covered already, the question is whether to reform the regulations in order to enhance the benefits that accrue to the profession. For example, an agreement on interprovincial reciprocity for landscape architects, similar to the one that exists for architects, would increase mobility and range of practice. (It is important to note that even with a reciprocal agreement, the costs to a firm wishing to work in another province can be high.)

Those disciplines examining the prospect of professional regulation need to assess the benefits as well as the costs. For some disciplines, certification would suffice, allowing them to achieve the status they seek. For others, licensing might be more appropriate.

7.5

IMPLEMENTING CHANGE

The Steering Committee for this study recognizes that many of the issues raised and conclusions reached will not come as news to designers.

The sector has been the focus of several previous studies, of lesser scope, at the national and provincial levels. Unfortunately, few of the recommendations contained in these earlier studies have been implemented. Although there are various reasons for the resulting inaction, a key factor has traditionally been the lack of strong national sector leadership to rally the sector efficiently as a whole in support of change.

Today, the National Design Alliance (NDA) provides a cross-country link for both promotional and professional design organizations and is currently collaborating with the Royal Architectural Institute of Canada (RAIC) to explore mechanisms for long-term cooperative endeavours.

Prior to developing a national human resource strategy for the sector, these study findings and recommendations must be broadly communicated throughout the sector and its sub-sectors. In conjunction with the study's findings and the objectives of a strategy, a thorough assessment of existing design sector activities and programs must be made and evaluated for their relevance to the study recommendations. Furthermore, the partnerships necessary for developing and implementing an effective strategy must be established.

With the study now completed, the specific objectives of this subsequent phase in the process will focus on:

- extending awareness of the study findings;
- mobilizing the sector organizations as partners in the development of an effective sector-wide implementation strategy;
- motivating sub-sector stakeholders to initiate sub-sectoral strategies;
- creating an inventory of existing programs and resources within the sector to be used to conduct a detailed assessment of study recommendations; and
- identifying resources and action priorities for collaborative implementation by sectoral groups, including professional, promotional, entrepreneurial, and educational organizations.

The NDA and the RAIC have already laid the groundwork for a plan to undertake these next steps. They recognize that all designers have a role to play in the development of the sector. Anyone interested in participating in any of these initiatives is urged to contact the NDA or the RAIC for information on follow-up activities.

Footnotes

1 This issue is more apparent in communications design, interior design, and industrial design. In the disciplines of architecture and landscape architecture, a clear distinction is made between community college and university programs and of the requirements regulating practice.

2 Accreditation standards exist already for educational programs in the built environment sub-sector.

3 It may not be feasible to develop an interdisciplinary program that includes all design disciplines. At a minimum, schools could, for example, offer programs that combine the built environment disciplines in one first degree and programs that combine industrial and communications design in another.

APPENDIX A
WORKING GROUPS

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APPENDIX B
METHODOLOGY

The sector study process aimed to ensure that the findings reflected the views of the people in the sector and built the commitment necessary for further action. It also enabled sector representatives to develop a common understanding of the key human resource issues facing the sector. The study involved in-depth interviews and discussions with more than 560 designers, buyers of design, technology researchers, educators, students, and representatives of government and of sector organizations both in Canada and abroad. In addition, the study involved a brief survey of graduate business schools in Canada. Please refer to Table 1 for a brief description of the specific research techniques employed, and Tables 2 and 3 for a breakdown of contact organizations by sub-sector and region, respectively.[1]

Table 1: Research Methodologies

Methodology	Description
Document review	• a search of published documents from a variety of countries, including the U.S., the U.K., Australia, Singapore, Italy, Denmark, France, Belgium, and Switzerland. The search was conducted by the Technical University of Nova Scotia and the University of Quebec in Montreal. The detailed bibliography is available under separate cover through the National Design Alliance and the Royal Architectural Institute of Canada. The information obtained through the literature search was supplemented with reports and documents secured through members of the Working Groups and the Price Waterhouse National Library. • an analysis of selected reports and documents from the literature search, focusing on the socioeconomic environment, technology, design management, and design education and training.
Data analysis	• analysis of occupational, demographic, and educational data, primarily from Statistics Canada and Human Resources Development Canada.
Interviews and group discussions	• about 85 interviews with key representatives, both in Canada and abroad, to discuss the pressures and trends facing the sector, including technological changes. • 15 interviews with buyers of design services to discuss the impact of design in their organizations, the criteria used in their buying decisions, and their relationships with designers. • interviews with about 140 designers and managers in design firms and in-house design departments about the pressures they face and their strategies for dealing with these pressures, marketing and promotion strategies, changes in skill requirements, career opportunities, and professional development. • group discussions and interviews involving 215 students, faculty, and administrators in design educational programs, about links with the design sector, changing educational requirements, challenges facing educational institutions, links to other faculties, and career opportunities. • about 20 interviews with administrators of professional development and continuing education programs in design about directions in professional development and barriers to professional development.

Table 1: Research Methodologies *cont'd.*

Methodology	Description
Survey	• a survey of Canadian graduate business schools on the extent to which design management is covered in their curricula.
Workshops	• regional workshops involving more than 90 people from design firms and in-house design departments to validate the findings of the research and to obtain their input on strategies to resolve the human resource issues facing the sector. • six meetings with the Working Groups to review progress, to provide direction, to vet ideas, and to develop the direction for a human resource strategy.

Table 2: Breakdown of Contact Organizations by Sub-sector

	SUB-SECTOR			
Design[2]	Built Environment			Communications Design	Industrial Design
45	117			54	63
	Arch	LArch	Interior		
	49	32	34		

Table 3: Breakdown of Contact Organizations by Region

		REGION				
International	National	Atlantic	Quebec	Ontario	Prairies	B.C.
28	15	23	70	53	41	49

Footnotes

1 Interviews with buyer organizations and technology experts are not included in the breakdown, as they were not necessarily specific to a sub-sector.

2 Contact organizations that represent more than one discipline are classified as "design."

APPENDIX C
LIST OF CONTACT ORGANIZATIONS

Adamson Design
Advancement for Design in Business – Nova Scotia
Aird et Gélinas
Aitken Wregelsworth Associates
Alberta College of Art, Design Division
Allsorts Design Group – Lloyd Alter, Architect
American Center for Design (U.S.)
American Institute for Graphic Arts (U.S.)
Angle Design
APCI (France)
Arato Design
Architectural Institute of British Columbia
Arnon Development
Arpeco Engineering
Ashley-Pryce Design Associates
Association des architectes paysagistes du Québec
Association des designers industriels du Québec
Association of Canadian Industrial Designers
Association of Chartered Industrial Designers of Ontario
Association of Professional Design Firms (U.S.)
Atelier d'architecture imagine Ltée
Automated Design Systems Ltd.
Avon Canada

Baker McGarva Hart
Barcelona Design Centre (Spain)
Basarab Associates Architecture Inc.
BBC Design
BBDO Toronto
BC Employment & Investment
BC Gas Inc., Administrative Services
Belbin Associates
Bell Canada Nortel Technology (formerly BNR), Corporate Design Group
BCID British Columbia Industrial Designers Association
BFE Group
Blue Sky
Bombardier Inc.
Bouvry Bienvenu Castonguay et Associés
British Columbia Manufacturers' Association
British Design Council (UK)
Bureau fédéral de développement régional – Québec
BVL Industrial Design Ltd.
Byrne Architects

Canadian Mortgage and Housing Corporation
Canadian Society of Landscape Architects
Carleton University, School of Architecture
Carleton University, School of Industrial Design
CCL Artworks
Cecconi Simone
Cheung Design Group
CIBC Development Corporation
CIDEM
Circle Design Incorporated
City Interiors
City of Vancouver
Clearly Canadian Beverage
Cohlmeyer Associates
Collège Ahuntsic, Institut des Communications graphiques
Committee of Architecture Councils
Commutron Engineering
Concordia University, Centre for Building Studies
Cormier St-Denis Associés
Corporate Design Foundation (U.S.)
Couture Tremblay
Culham Pedersen Valentine

Chris Dahl Art & Design
Michel Dallaire et associés architectes
Michel Dallaire Designers Inc.
Danish Design Centre (Denmark)
Dawson College, Graphic Design Program
Dawson College, Industrial Design Program
D'arcy Dennehy (independent interior designer)
Deshaies Raymond
Design & Graphics
Design British Columbia
Design Business Association (UK)
Designers Centre Singapore
Design Exchange
Design Forum Finland (Finland)
Design Link
Design Management Institute
Design Matters Consultants
Design Profile Ltd.
Design Promotion Center/CETRA (Taiwan)
Design World Magazine (Australia)
Designworks Inc.
Diefenbach, Elkins and Vandenberg
Distribution Ninaf Rgd.
Doowah Design Inc.
André DuBois & Associés Designers Inc.
Dufferin Aggregates
Duffus Romans Kundzins Rounsefell Architects Ltd.
Dupuis et Le Tourneux Architectes
Durante and Partners
Douglas Cardinal Architect Ltd.

Ebco Industries
EDI
EDM Environmental Design and Management Ltd.
Emily Carr Institute of Art and Design, Design Division: Communications Design
Emily Carr Institute of Art and Design, Design Division: Industrial Design

Emmarge Design
European Design Centre (The Netherlands)
Russell Everett Design Services, Unloonet Inc.

Ference Weicker & Co.
Foreign Affairs and International Trade, Interior Design Program
Forum Design
Forrec Ltd./Moorhead Associates
Fowler Bauld & Mitchell Ltd.

Thomas Garvey (independent industrial designer)
GID Design
Wim Gilles (founder of the School of Industrial Design, Carleton University)
Gittens Mason Inc.
Gouvernement du Québec, Ministère de l'industrie, du commerce et de la technologie
Graphic Design and Electronic Graphics Research Laboratory (U.S.)
Graphic Design Associates
Groupe Conseil TP
Guzzi Perry and Associates

Halifax Developments Ltd.
Hamilton Beach/Proctor Silex Canada
Hetherington Welch Design Inc.
Hickey Canada Inc.
Hilderman Witty Crosby Hanna Associates
Hippo Design Inc.
Howlett Pettipas Inc.
Humber College, Architecture Design Program
Humber College, Industrial Design Program
Humber College, Interior Design Program
Humber College, Landscape Design Program

Industrial Design Society of America (U.S.)
Inglis
Innova Design
Institut de Design Montréal
Interior Design Council
Interior Designers of America (U.S.)
Interior Designers of Canada
International Council of Graphic Design Associations (ICOGRADA) (UK)
International Council of Societies of Industrial Design (ICSID) (Finland)
International Federation of Interior Architects and Designers (IFI) (The Netherlands)
Ion Design Inc.
Irwin Group

Jacob
Jodoin Lamarre Pratte et Associés

Karo Design Resources
Patrick Kennedy Interior Design
Kerr Keller Design Inc.
Korean Institute of Technology (Korea)
Kromar Printing
Kruger International (KI)
Kuwabara Payne McKenna Blumberg

Philippe Lalande Designers Inc.
Landscape Architects Inc.
Le Groupe DBSF
Louis-Paul Lemieux (independent architect)
Liaison Design Inc.
Lombard North Group

Manitoba Association of Architects
Manitoba Parks Branch
Manitoba Telephone Systems, Real Estate Department
Marsh & McLennan Limited
Marshall Cummings & Associates
Thomas McBroom & Associates
Patricia McClintock & Associés Inc.
McClelland & Stewart
Salli McSweeney Interior Design Group Inc.
Mercer-Clark Environments
MGM Design
Minto Developments Inc.
Morelli Designers Inc.
Motorola, Wireless Data Group
Mount Royal College, Interior Design Department
Keith Muller & Associates

Nagaoka Institute of Design (Japan)
Natale Scott Brown Architects
National Design Alliance
Noma Inc.
North York Hydro
Northwestern University, J.L. Kellogg Graduate School of Management
Norwegian Design Council (Norway)
Nova Corporation
Nova Scotia Centre for Craft and Design
Nova Scotia College of Art and Design, Design Division
Number Ten Architectural Groups

Ontario Association of Architects
Ontario College of Art, Communication and Design
Ontario College of Art, Industrial Design
Open Learning Agency
Ordre des architectes du Québec

Parallel Designs
Parent Latreille et Associés
Partners By Design
R.L. Petersmann Landscape Architects Ltd.
Tom Powell Design Studio
Precision Manufacturing Inc.
Price Club
Price Waterhouse
Product Ability
Provencher Roy et associés architectes
Public Works and Government Services Canada, Architecture and Engineering Services
Public Works Canada

Quatuor International

Rat für Formgebung (Germany)
RBL Rice Brydone Limited
Red River College, Advertising Art
Frank Reimer Designs
Relief Achitecture de Paysage
Rogers Cantel Inc.
Ron Engineering
Royal Architectural Institute of Canada
Ryerson Polytechnical University, School of Interior Design

W.M. Salter & Associates
Scatliff & Associates Landscape Architects Inc.
Norman Schmidt (independent communications designer)
Seagull Pewter
Rita-Sue Segal Resources
SémioDesign
Gad Shaanan Design
Sharp and Diamond
Sheridan College, Graphic Design Program
Greg Silver (independent communications designer)
Simon Fraser University, Faculty of Arts
Smith Carter
Société des designers graphiques du Québec
Society of Graphic Designers of Canada
Société micro-industrielle de Sherbrooke
Spencer Francey Peters
Patricia Stanton Designs
Stinson Interior Design
James S. Stirton Architect
Studio Innova Inc.
Sutton Javelin Communications

J. Tang and Associates
Taubensee Interior Design Ltd.
Technical University of Nova Scotia,
Faculty of Architecture
Teknion Furniture Systems
Teleglobe Canada
Telmet Design Associates
The Arnott Design Group
The Axis Group
The Bay
The Design Centre Singapore (Singapore)
The Document Company Xerox
The Institution of Swedish Industrial Design (Sweden)
The Kirkland Group
Tielker Sim Harrison Weller Architects
Treasury Board Secretariat of Canad

UMA Engineering
Université de Montréal, École d'architecture de paysage
Université de Montréal, École de design industriel
Université du Québec à Montréal, Centre du design
Université du Québec à Montréal, Département des communications
Université du Québec à Montréal, Module de design graphique
University of British Columbia, Landscape Architecture Program
University of British Columbia, School of Architecture
University of Calgary, Industrial Design
University of Guelph, School of Landscape Architecture
University of Manitoba, Faculty of Architecture
University of Manitoba, Faculty of Fine Art
University of Toronto, School of Architecture
Urban Art Management

Ville de Montréal, Services des loisirs et du développement communautaire
Ville de Montréal, Aménagement des parcs

Westland Eby Consultants
Williams Asselin Ackaoui Associés
Wilmar Heights United Church
Wilson Furniture
Winnipeg Parks & Recreation Department
Workers' Compensation Board

Yabu Pushelberg
Catherine Youngren Designers Inc.

Peter Zimmer Associates

APPENDIX D
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APPENDIX E
GLOSSARY OF TERMS AND CONDITIONS

Real Gross Domestic Product (GDP) by Industry at Factor Cost

A measure of the economic production that takes place within the geographical boundaries of Canada. As the name suggests, it is designed to display the industrial distribution of total output. GDP for a single industry is also referred to as net output, or value added. Conceptually it is equal to total sales by the industry (gross output) less inputs of goods and services that were provided by sources other than the industry itself (intermediate outputs).

National Occupations Code (NOC) 1991 Occupation Definitions

2151 ARCHITECTS

Architects conceptualize, plan, and develop designs for the construction and renovation of commercial, institutional, and residential buildings. Architects are employed by architectural firms, private corporations, and governments, or they may be self-employed.

Examples of titles classified in this group
Architect
Consulting Architect
Architectural Standards Specialist
Industrial and Commercial Building Architect
Chief Architect
Residential Architect

Main duties
Architects perform some or all of the following duties:

- Consult with clients to determine type, style, and purpose of renovations or new building construction being considered.
- Conceptualize and design buildings and develop plans describing design specifications, building materials, costs, and construction schedules.
- Prepare sketches and models for clients.
- Prepare or supervise the preparation of blueprints for use by contractors and tradespersons.
- Hire and supervise contractors and other personnel involved with the construction.
- Supervise activities on construction sites to ensure compliance with specifications.
- Conduct feasibility studies and financial analyses of building projects.

Architects usually specialize in a particular type of construction such as residential, commercial, industrial, or institutional.

Employment requirements

- A bachelor's degree from a recognized school of architecture and two years of experience under the supervision of a registered architect, or completion of the syllabus of studies from the Royal Architectural Institute of Canada (RAIC) and eight years of on-the-job training under supervision of a registered architect is required.
- Completion of examinations set by provincial associations of architects is required.
- Registration with the provincial association of architects in the province of work is required.
- In Quebec, membership in the professional corporation for architects is mandatory.

Additional information

- Progression to senior positions, such as Chief Architect, is possible with experience.

2152 LANDSCAPE ARCHITECTS

Landscape Architects conceptualize landscape designs, develop contract documents, and oversee the construction of landscape development for commercial projects, office complexes, parks, golf courses, and residential development. They are employed by architectural and engineering firms, landscape consulting firms, landscape contractors, and by government environmental and development agencies, or they may be self-employed.

Examples of titles classified in this unit group
Architect, Landscape
Landscape Architect

Main duties
Landscape Architects perform some or all of the following duties:

- Confer with clients to determine design needs.
- Survey and assess designated sites and develop designs taking into consideration landscape features, buildings, climate, future usage, and other aspects.
- Prepare or oversee the preparation of detailed drawings for sites, including features such as trees, shrubs, gardens, lighting, walkways, patios, decks, benches, fences, retaining walls, and fountains.

- Prepare or oversee preparation of site plans, reports, sketches, models, photographs, maps, land use studies, and design plans.
- Estimate costs, prepare specifications, and evaluate tenders for landscape construction projects.
- Conduct environmental design studies, including environmental assessment, planning, and the preservation and recreation of historical sites.
- May manage and supervise landscape construction work.

Employment requirements

- A bachelor's degree in landscape architecture is required.
- A master's degree in landscape architecture may be required.
- In Ontario and British Columbia, landscape architects require some landscape design experience and the successful completion of a provincial registration exam.
- In the remaining provinces and the territories, landscape architects require some landscape design experience and an interview by their provincial associations to receive association certification.

2251 ARCHITECTURAL TECHNICIANS AND TECHNOLOGISTS

Architectural Technicians and Technologists may work independently or provide technical assistance to professional architects and civil design engineers in conducting research; in preparing drawings, architectural models, specifications, and contracts; and in supervising construction projects. Architectural Technicians and Technologists are employed by architectural and construction firms, governments, and other industries.

Examples of titles classified in this unit group

Architectural Design Technician
Architectural Technologist
Architectural Design Technologist
Building Technologist, Residential
Architectural Technician

Main duties

Architectural Technicians and Technologists perform some or all of the following duties:

- Assist in the development of architectural designs.
- Analyze building codes, by-laws, space requirements, site requirements, and other technical documents and reports.
- Prepare drawings, specifications, cost estimates, and listings of quantities of material from conceptual drawings and instructions.
- Construct architectural and display models.
- Prepare contract and bidding documents.
- May supervise drafters, technicians, and technologists on the architectural team.
- May supervise construction projects and coordinate, monitor, and inspect work done by others.

Employment requirements

- Completion of a one- to three-year college program in architectural technology or a related subject is usually required.
- Certification in architectural technology or in a related field through provincial associations of engineering/applied science technicians and technologists may be required by employers.
- In Quebec, membership in the professional corporations for technologists in applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional Information

- There is mobility to other related occupations such as drafters, civil engineering technologists and technicians, construction estimators, and construction inspectors.
- Progression to supervisory positions is possible with experience.

2252 INDUSTRIAL DESIGNERS

Industrial Designers conceptualize and produce designs for manufactured products. They are employed by manufacturing industries and private design firms, or they may be self-employed.

Examples of titles classified in this unit group

Furniture Designer
Industrial Products Designer
Industrial Design Consultant
Package Designer
Industrial Designer
Product Designer

Main duties

Industrial Designers perform some or all of the following duties:

- Consult with client, engineers, or production specialists to establish product requirements.
- Analyze the intended use of product and user preferences.
- Conduct research into cost, properties of production materials, and methods of production.
- Prepare design concepts, sketches, or models for approval.
- Prepare specifications and guidelines for production and construct prototype of design.
- Consult with engineers and production staff during manufacturing stage.

Employment requirements

- A university degree in industrial design, architecture, or engineering; or a college diploma in industrial design is required.
- Creative ability, as demonstrated by a portfolio of work, is required.

Additional information

- There is mobility between positions in this group.
- Mobility is possible to other design occupations.

5241 GRAPHIC DESIGNERS AND ILLUSTRATING ARTISTS

Graphic Designers and Illustrating Artists conceptualize and produce designs, illustrations, layouts, and visual images to effectively communicate information for publications, advertising, films, posters, and signs. They are employed by advertising and graphic design firms and by other establishments with advertising departments. Graphic Designers and Illustrating Artists who are also supervisors, project managers, or consultants are included in this unit group.

Examples of titles classified in this unit group

Advertising Designer
Animator
Art Director
Commercial Artist\Graphic Artist
Graphic Designer
Illustrator
Scientific Illustrator
Layout Designer
Medical Illustrator
Page Designer
Title Artist

Main duties

Graphic Designers and Illustrating Artists perform some or all of the following duties:

- Consult with clients to establish the nature and content of designs and illustrations for reproduction.
- Determine medium best suited to produce desired visual effect and method of reproduction.
- Prepare sketches, photographs, or illustrations of subjects to be rendered.
- Estimate cost of materials and time to complete graphic design and illustration.
- Prepare specifications for design.
- Produce final designs or illustrations, or supervise the production of design by other graphic designers or graphic arts technicians.

Employment requirements

- Completion of secondary school is required.
- A university degree in visual arts with specialization in graphic arts, commercial art, or photography

or

- Completion of a college or other program in graphic arts or commercial art is usually required.
- Experience as a graphic arts technician may be required and may substitute for post-secondary training.
- Creative ability, as demonstrated by a portfolio of work, is required.

Additional Information

- Progression to management positions, such as advertising manager, is possible with experience.

5242 INTERIOR DESIGNERS

Interior Designers conceptualize and produce aesthetic and functional designs for interior spaces in residential, commercial, institutional, and industrial buildings. They are employed by architectural firms, interior design firms, retail establishments, construction companies, and other establishments, or they may be self-employed.

Examples of titles classified in this unit group

Building Space Planner
Office Space Planner
Interior Design Technician
Project Manager, Interior Design
Interior Design
Retail Space Planner
Kitchen Designer

Main duties

Interior Designers perform some or all of the following duties:

- Consult with clients to determine needs, preferences, and purpose of space.
- Develop detailed plans and models showing arrangement of walls, dividers, displays, lighting, and other fixtures.
- Develop decorating plans and advise on selection of colour schemes, floor and wall coverings, furniture, and other items.
- Estimate costs and materials required.
- Prepare specifications for the final interior designs.
- May direct site work crews.

Interior designers may specialize in designing interiors for residences, offices, hotels, restaurants, or retail establishments.

Employment requirements

- A university degree or college diploma in interior design or architectural design is usually required.
- Candidates must possess creative ability, as demonstrated by a portfolio of work.
- Registration with the Interior Design Association in the province of employment may be required.

Additional information

- Specialization in a particular field of interior design is possible through specific university or college training, or through experience.

1980 Standard Industrial Classifications

281 COMMERCIAL PRINTING INDUSTRIES

Establishments primarily engaged in the production of commercial and/or job printing regardless of the printing method or process used (letterpress, including flexographic, photographic, or lithographic; intaglio or gravure; stencil printing or silk-screen, etc.).

284 COMBINED PUBLISHING AND PRINTING INDUSTRIES

Establishments primarily engaged in combined publishing and printing of newspapers, magazines, periodicals, and other articles.

421 SITE WORK

Establishments primarily engaged in wrecking and demolition, water well drilling, septic systems installations, excavating and grading, equipment rental (with operation), asphalt paving, fencing, and other site work.

427 INTERIOR AND FINISHING WORK

Establishments primarily engaged in plastering, drywall, acoustical, finish carpentry, painting and decorating, terrazzo and tile, flooring and carpeting, and other interior and finishing work.

774 ADVERTISING SERVICES

Establishments primarily engaged in operating advertising agencies; acting as media representatives; renting space on outdoor displays and billboards; and providing other advertising services.

775 ARCHITECTURAL, ENGINEERING, AND OTHER SCIENTIFIC AND TECHNICAL SERVICES

Establishments primarily engaged in providing architectural, consulting engineering, and other scientific and technical services.

779 OTHER BUSINESS SERVICES

Establishments primarily engaged in providing security and investigation, credit bureau, collection agency, customs broker, telephone answering, duplicating, and business services not elsewhere classified.

Proposed Standard Industrial Classification Structure

XX[1] Professional, Scientific, and Technical Services

- XXX Architectural, Engineering, and Related Services
  - XXXX Architectural Services
  - XXXX Engineering Services
  - XXXX Drafting Services
  - XXXX Landscape Architectural Services
  - XXXX Surveying and Mapping Services
  - XXXX Geophysical Surveying Services
- XXX Other Design Services
  - XXXX Interior Design Services
  - XXXX Industrial Design Services (including furniture design)
  - XXXX Graphic Design Services
  - XXXX Miscellaneous Design Services (fashion, fur, footwear, urban planning)

Footnote

1 "X" indicates the code: XX is the two-digit code; XXX the three-digit code; and XXXX the four-digit code.

APPENDIX F
SURVEY OF MBA SCHOOLS

Introduction

Questionnaires were distributed to 34 graduate-level business programs across the country. Twenty-two questionnaires were returned, for a response rate of 62 percent. Questionnaires were received from:

Wilfrid Laurier University
University of Manitoba
Université Laval
Carleton University
University of British Columbia
University of Moncton
University of Victoria
Concordia University
Université de Montréal
University of Windsor
Dalhousie University
University of Saskatchewan
McGill University
St. Mary's University
University of Regina
University of Guelph
Simon Fraser University
Queen's University
University of Alberta
McMaster University
University of Calgary

Summary of Responses

PROGRAM INFORMATION

1. How many students (both full-time and part-time) are currently registered in the MBA program?

Average number of students:	280
Total number of students in programs responding:	5,044
Range:	50 - 800

2. In what fields can a student specialize?

a) finance	74%
b) marketing	74%
c) international business	68%
d) management information systems	63%
e) organizational behaviour/development/ change	63%
f) human resources	68%
g) operations management	63%
h) organizational strategy	58%
I) other (please specify):	53%

Management of Technology
Science and Technology
Management of Innovation
Entrepreneurship
New Venture
Small Business
Tourism
Environmental Management
Public Administration
Banking
Economics
Agribusiness
Health Services Management
Industrial Relations
Hospitality Management
Accounting
Health Services

3. How would you describe the dominant pedagogy used by your faculty? (Please check ✓ no more than two.)

a) lecture	5%
b) lecture/discussion	26%
c) case	26%
d) lecture/case	11%
e) lecture/case/discussion	89%

4. What proportion of your faculty are *(respond in percentages):*

a) full-time	85%
b) part-time (including contract)	15%

5. What is the average length of service of the full-time faculty?

Average:	10.6 years
Range:	1.5 - 15 years

CURRICULUM INFORMATION

6. Do you offer a course(s) on design management?

a) Yes	9% (2 programs)
b) No	91%

7. If you answered YES in Question 6, please list the name(s) of course(s) and please attach an outline(s) for the course(s).

Innovation and New Product Management

8. How often is/are the course(s) offered?

a) Once a semester	-
b) Once a year	100%
c) Every other year	-

9. If an individual course is not offered concerning design management, is the topic covered within existing courses in the MBA curriculum?

a) Yes	25%
b) No	75%

10. If you answered YES to Question 9, please list the name(s) of course(s) addressing the topic.

Marketing
Organizational Design
Organizational Structure
Advanced Topics in Operations and Technology
Seminar in the Management of Research and Development
Current Topics in Research and Development and Innovation

11. If design management is not included in your curriculum, either as a separate course or within other courses, does your school intend to include the topic in the near future?

a) Yes	19%
b) No	62%
c) Don't know	19%

12. Given what you know about the topic of design management, to what extent do you agree that business students should be exposed to these issues?

a) strongly agree	18%
b) agree	11%
c) neither agree nor disagree	44%
d) disagree	28%
e) strongly disagree	-

13. To what extent do you think your colleagues would be supportive of efforts to include the topic of design management within the curriculum?

a) to a great extent	11%
b) to some extent	21%
c) not at all	37%
d) don't know	32%

14. If you answered NOT AT ALL to Question 13, what do you think is the major barrier to including design management in the curriculum? (Please check ✓only one.)

a) lack of understanding of the topic	-
b) unwillingness to make changes to course content/curriculum	-
c) not enough time in curriculum	71%
d) lack of availability of resources (i.e., financial and human)	29%
e) other (please specify):	-

15. What could be done to make your colleagues more supportive?

"Provide model curriculum, texts etc."

Proximity to design expertise

16. Is there a design school or department on your campus, within your system, or nearby that you could draw on for assistance in planning a course in design management?

a) Yes	41%
b) No	47%
c) Don't know	12%

17. If you answered YES to Question 16, can your students take courses in this school or department?

a) Yes	86%
b) No	14%

18. If you answered YES to Question 17, do they?

a) Yes	29%
b) No	71%

19. Is there an engineering school or department on your campus, within your system, or nearby?

a) Yes	94%
b) No	6%

20. If you answered YES to Question 19, can your students take courses in this school or department?

a) Yes	82%
b) No	18%

21. If you answered YES to Question 20, do they?

a) Yes	21%
b) No	79%

Additional comments

22. Please feel free to add any remarks that you believe will make your responses to the questionnaire more helpful.

"At a loss for any reason why a business program would want to specialize in design management."

"Barrier to design management course — the issues involved for the three sub-sectors are very different and a single course may not hold together too well."

"While interesting, I do not see this as priority area for our students."

"Presently, we are discussing the possibility of a Management of Technology Program with the Faculty of Engineering. Hence, our students may be taking more courses in that faculty in the future."

"Faculty in the marketing area will stress the importance of good design, but none have the expertise to teach design."

"...because of my own interest in the area and the fact that your survey is being undertaken has made me realise that now may be the time to raise the issue with my colleagues on the need and appropriateness of moving in this direction."

"We are working hard to increase the MBA design management content."

"A collaborative venture is being worked on for graduate students at three universities"

APPENDIX G
DESIGN PROGRAMS AT POST-SECONDARY SCHOOL LEVEL

ARCHITECTURE

Architecture
- BC, University of British Columbia
- AB, University of Calgary
- MB, University of Manitoba
- ON, Carleton University
- ON, University of Waterloo
- ON, University of Toronto
- QC, McGill University
- QC, Université de Montréal
- QC, Université Laval
- NS, Technical University of Nova Scotia

Environmental Design
- MB, University of Manitoba
- ON, Ontario College of Art

ARCHITECTURAL TECHNICIAN/ TECHNOLOGY

Architectural Design, Technical Graphical Communication
- BC, British Columbia Institute of Technology

Architectural Design Technician
- ON, Humber College

Architectural Design Technology
- ON, Humber College

Architectural Engineering Technology
- SK, S.I.A.S.T. Palliser
- NF, Cabot College
- NF, Westviking College

Architectural Science
- ON, Ryerson Polytechnic University

Architectural Technician
- ON, Algonquin College
- ON, Fanshawe College
- ON, George Brown College
- ON, Loyalist College
- ON, Northern College
- ON, Sheridan College

Architectural Technician — Drafting
- ON, Centennial College
- ON, Sault College

Architectural Technician (Mechanical Systems)
- ON, Algonquin College

Architectural Technologies
- AB, Southern Alberta Institute of Technology

Architectural Technology
- ON, Algonquin College
- ON, Fanshawe College
- ON, George Brown College
- ON, Loyalist College
- ON, Northern College
- ON, Saint Clair College
- ON, Sault College
- ON, Sheridan College
- QC, Vanier College
- PEI, Holland College

Architectural Technology (Architecture)
- AB, Northern Alberta Institute of Technology

Architectural Technology (Design)
- ON, Confederation College

Design (Environmental Planning)
- NS, Nova Scotia College of Art and Design

Drafting
- BC, North Island College
- ON, Cambrian College
- ON, Sheridan College
- ON, Mohawk College
- PEI, Holland College
- NS, N.S.C.C. Strait Campus

Drafting (Architectural)
- NS, N.S.C.C. Annapolic
- NS, N.S.C.C. Halifax
- NS, N.S.C.C. Hants
- NS, N.S.C.C. Pictou

Drafting (Architectural, Civil, Structural, CAD)
- BC, Vancouver Community College

Drafting (General)
- NB, N.B.C.C. Moncton

Computer Aided Drafting Technician
- AB, Medicine Hat College
- NF, Central Regional College

Computer Aided Drafting and Design
BC, Kwantlen College
BC, University College Cariboo

Computer Aided Drafting
NF, Westviking College

Computer-Aided Design and Drafting Technology
SK, S.I.A.S.T. Palliser

Drafting (Computer Aided Drafting and Design)
BC, Vancouver Community College

Drafting (Basic)
NF, Central Regional College

Techniques d'architecture
ON, La Cité Collègiale

Techniques de l'architecture
ON, Northern College
QC, Collège Montmorency
QC, Collège de Rimouski

Technologies de l'architecture
ON, Northern College
ON, La Cité collègiale
QC, Collège André-Laurendeau
QC, Collège de Chicoutimi
QC, Collège de Lévis-Lauzon
QC, Collège de Saint-Laurent
QC, Collège de Trois-Rivières
QC, Collège du Vieux Montréal
QC, Collège Marie-Victorin

Drafting Technician
BC, College of New Caledonia
BC, University College Fraser Valley
SK, S.I.A.S.T. Wascana
ON, Canadore College

LANDSCAPE ARCHITECTURE

Landscape Architecture
BC, University of British Columbia
MB, University of Manitoba
ON, University of Guelph
ON, University of Toronto

Architecture de Paysage
QC, Université de Montréal

Environmental Design
MB, University of Manitoba
ON, Ontario College of Art

LANDSCAPE ARCHITECTURAL TECHNICIAN/TECHNOLOGIST

Architectural Technology (Landscape Architecture)
AB, Northern Alberta Institute of Technology

Design (Landscape)
ON, Fanshawe College

Landscape Architectural Technology
ON, Ryerson Polytechnic University

INTERIOR DESIGN

Architectural Technology (Interior Design)
AB, Northern Alberta Institute of Technology

Bachelor of Interior Design
BC, Open Learning Agency

Design (Interior)
ON, Fanshawe College

Interior Design
BC, Kwantlen College
AB, Lakeland College
AB, Mount Royal College
MB, University of Manitoba
ON, Algonquin College
ON, Durham College
ON, Georgian College
ON, Humber College
ON, Niagara College
ON, Ryerson Polytechnic University
ON, Saint Clair College
ON, Sheridan College
QC, Dawson College

Design d'Intérieur
QC, Collège de l'Assomption
QC, Collège de Rivière-du-Loup
QC, Collège de Trois-Rivières
QC, Collège du Vieux Montréal
QC, Collège F.X.-Garneau
QC, Collège Marie-Victorin
QC, Université de Montréal
QC, l'Académie (Place Bonaventure)
QC, Collège LaSalle
NB, N.B.C.C. Dieppe

Design D'Intérieur (Avancé)
ON, La Cité collègiale

COMMUNICATIONS DESIGN

Advertising — Creative
ON, Algonquin College
ON, Centennial College

Advertising and Graphic Arts
ON, Humber College
ON, Sault College

Advertising Art
MB, Red River College
ON, Fanshawe College

Commercial Design
PEI, Holland College

Communication Graphique
QC, Université Laval

Communication and Design
AB, University of Alberta
ON, Ontario College of Art
ON, York University

Computer Graphics
BC, Vancouver Community College
ON, Sheridan College
QC, Collège de Jonquière
QC, ICARI

Computer Graphics (Imagery)
ON, Seneca College

Computer Graphics (Technical)
ON, Seneca College

Conception Graphique
ON, La Cité collègiale

Creative Graphics Studio
NB, New Brunswick Craft and Design

Deisgn Graphique
QC, Université du Québec à Montréal

Design Foundation
ON, Humber College

Design Art(s)
ON, Seneca College
QC, Concordia University

Design de Présentation
QC, Collège de Rivière-du-Loup
QC, Collège de Sainte-Foy
QC, Collège du Vieux Montréal

Design (Communication Design)
NS, Nova Scotia College of Art and Design

Design and Illustration
QC, Dawson College

Graphic Design Fundamentals
ON, Lambton College

Graphic and Visual Design
BC, Kwantlen College

Graphic Communications
ON, Canadore College

Graphic Communications Management
ON, Ryerson Polytechnic University

Graphic Design
BC, Emily Carr Institute
MB, University of Manitoba
ON, Algonquin College
ON, Durham College
ON, Saint Lawrence College
ON, Sheridan College
ON, George Brown College
ON, Georgian College
ON, Mohawk College
NS, Nova Scotia College of Art and Design
NS, N.S.C.C. Annapolis

Graphic Design and Advertising
ON, Conestoga College

Graphic Design and Communication
BC, University College Fraser Valley

Graphic Design and Illustration
BC, Capilano College

Graphisme
QC, Collège Ahuntsic
QC, Collège de Rivière-du-Loup
QC, Collège de Sainte-Foy
QC, Collège de Sherbrooke
QC, Collège du Vieux Montréal
QC, Collège Marie-Victorin
QC, Collège Sallette

Techniques de Conception Graphique
NB, N.B.C.C. Dieppe

INDUSTRIAL DESIGN

Design de l'environnement
- QC, Université du Québec à Montréal

Design Industriel
- QC, Université de Montréal

Industrial Design
- BC, Emily Carr Institute of Art and Design
- AB, University of Calgary
- AB, University of Alberta
- ON, Carleton University
- ON, Ontario College of Art

Techniques de design industriel
- QC, Cegep de Sainte-Foy
- QC, Cegep Dawson
- QC, Cegep du Vieux-Montréal
- ON, La Cité collégiale

Industrial Design Techniques
- ON, Fanshawe College
- ON, Georgian College
- ON, Humber College

Photo Acknowledgements

The Design Sector Steering Committee wishes to thank those who provided the photographic material used in this report. Best efforts have been made to balance this material by design discipline and region, within the limitations imposed by photo availability.


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