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INFORMING FUTURE DECISIONS

Developing a Skills and Technology Roadmap

January 2008

Canadian Printing Industries Sector Council

Canada

Funded by the Government of Canada's Sector Council Program
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ABOUT CPISC

The Canadian Printing Industries Sector Council (CPISC) provides a national forum for collaboration on human resource and workforce development issues within the printing and graphic communications industry. Incorporated in April 2006, CPISC's mission is to identify and implement strategies to address skills development and learning within the sector. Our overall goal is to improve the quality of the sector's labour force.

The guiding principle within CPISC is partnership. We bring together employers, employees, unions, education and government to develop innovative approaches to skills development for the current and future workforce of this technology-based industry. The intent of CPISC is not to duplicate what exists but to build on what is currently being done and to develop on a national basis the programs and services that will meet the human resource development needs of the industry as a whole.

INTRODUCTION

It is no exaggeration to say that the printing and graphic communications industry has embraced technology. The past two decades have been characterized by rapid changes in technology, increasing global competitiveness and the restructuring of business practices. Despite this, the Canadian printing and graphic communications industry has continued to grow and flourish.

Rapid changes in technology continue to drive all aspects of the industry but particularly human resource and workforce development. The Canadian printing and graphic communications industry is not alone in facing issues such as changing technology, economic restructuring and global competitiveness. Nor is it alone in recognizing the need for improved training and retraining. But all of these changes have resulted in a constant need to upgrade and retrain the current workforce while ensuring that bright, motivated young people are attracted to this vibrant industry. All workers – current, new and potential – need to have opportunities to acquire the high level of skills they will need to succeed in the future.

Jobs within the printing and graphic communications industry fall into the following production process areas.

Pre-press – Pre-press includes preparing digital and traditional material for the press, according to customer's specifications. Traditionally, pre-press occupations included scanner and camera operators and film strippers – we used to talk about proofing the blues, going to film and preparing a camera-ready version. However, digital technologies

and increased customer participation in pre-press activities have blurred previous traditional classifications. Responsibilities now include revisions and corrections of customer files, digital creation of type, page layout, scanning, imposition, colour separation, film and plate preparation and digital asset management. The majority of the work performed during the pre-press process requires highly sophisticated software.

Press – Press involves the actual printing of the document on a sheet-fed or web offset press. A sheet-fed press is just what the name implies – sheets of paper being fed into a printing press. Web presses operate with rolls of paper rather than single sheets – for example, newspapers are usually printed on web presses. During the press process, employees install and adjust plates, prepare blankets and cylinders, select and mix inks, run the press, monitor print quality and press performance, troubleshoot problems, ensure a safe operating environment and perform preventive maintenance on presses. As well, two other press systems – flexographic printing and digital printing – are rapidly growing areas that warrant particular attention.

Finishing and bindery – Finishing, bindery and distribution are the final steps in the production process. They include the assembly of finished products for the customer or consumer. Employees collate and bind printed sheets, perform finishing operations such as drilling, embossing and laminating, and prepare the final product for mailing and distribution. This process area now frequently includes the creation of a website that can host catalogues, databases and even e-commerce. As such, aside from the traditional occupations involved in finishing and binding a document together, this area now also includes a rapidly growing graphic communications component.

In addition, there are a number of jobs that support the production processes. **Production support** occupations include customer service and sales representatives, estimators, production managers and schedulers, and plant supervisors, as well as accounting and office staff, mechanics, electricians and material handlers.

The three production process areas and the production support area are each highly complex and integrated, and vary widely with the size of the company, types of presses, range of job titles and production output.

SKILLS AND TECHNOLOGY ROADMAP

Like many industries, the printing and graphic communications industry faces a number of challenges. The reality of the printing sector today includes:

- rapid technological change
- a geographically dispersed, varied workforce
- a lack of skill standards
- training programs that meet only some of the needs of the industry
- changing demographics of the workforce as employees near retirement and recruitment efforts that target – along with all the other sectors – a dwindling cohort of young people

Printing has virtually re-invented itself, as state-of-the-art technologies have become standard throughout the production process. The industry has responded to the challenge by restructuring, investing in new equipment and training and re-training workers. As technological advances continue to impact the printing and graphic communications industries, the processes and functions involved in printing will become increasingly inter-related.

As well, the negative result of the advance of the “service economy”, the “information technology”, and the “knowledge economy” has been to create the impression among young people and many policy makers that manufacturing is no longer important. However, manufacturing in general – and printing and graphic communications in particular – has been and is being constantly barraged by the effects of rapidly, ever-changing requirements and technological advancements. New costumer needs, global competitiveness and emerging technologies are forcing and unprecedented level of change in the process, equipment and systems that are used in printing. Given increasing global competition, for the printing and graphic communications sector, the fundamental question is how much of the production will continue to take place in Canada?

Rapid changes in technology continue to drive all aspects of the industry but particularly human resources and workforce development. Technology is one of the key factors having an impact on skills development needs within the industry. Given the current and future context, how can the printing and graphic communications sector successfully negotiate the maze and chart a strategic direction?

The CPISC Board of Directors recognized the need to identify and evaluate key technological trends for the sector, and to provide a sound base for the future. At the end of September 2007, the Council obtained funding from both Human Resources and Social Development Canada and Industry Canada to develop a skills and technology roadmap for the printing and graphic communications sector.

What is a skills and technology roadmap? It is a planning tool that will give people in the printing and graphic communications sector a context for identifying and assessing the technological and workforce development trends and challenges, and for choosing the strategies that best meet their needs. It focuses on four questions:

- Where are we today?
- What are the trends and drivers of change?
- Where do we want to go?
- What will it take to get us there?

A key characteristic of a technology roadmap is that it is developed by the industry, for the industry. In answering these questions, the sector will:

- Develop a consensus on new market opportunities and critical technologies
- Identify major barriers and constraints to future development.
- Develop a plan to inform strategic technology investment decisions, helping the sector avoid risky, unproductive technology investments.
- Identify the critical skills needed for the future, using the skill standards for the sector as a basis.

PROJECT OBJECTIVES

During the course of this project, CPISC will develop a skills and technology roadmap for the printing and graphic communications industry that includes recommendations for the technologies to be pursued that will help the sector to fulfill the market demands and identifies the skills needed to use these technologies effectively.

PROJECT ACTIVITIES AND TIMELINES

The project will run from October 1, 2007 to September 30, 2008. The project is being led by a Steering Committee comprising industry leaders and key stakeholders.

Developing and implementing a Skills and Technology Roadmap will involve three phases.

Phase I is the preliminary phase, during which CPISC will set up the Steering Committee and conduct a state-of-the-field review to identify market trends and technologies, document

the challenges and opportunities, inventory R&D activities and capacity, and identify public and private sources of funding.The information gathered through this review will serve as a baseline for confirming the vision and for identifying technology drivers and alternatives in Phase II.

During Phase II, a draft skills and technology roadmap will be developed by the Steering Committee in consultation with the sector. The purpose and goals of the skills and technology roadmap will be identified by defining what technologies and products are needed to attain the agreed-upon vision. We will identify what future customers are likely to demand and how printing processes have to be adapted to meet those demands. We will define the skills and knowledge the future workforce will need to implement the new technologies.

During the final phase of the project, the industry will review and validate the skills and technology roadmap. The sector's skills and technology roadmap will be a major focus of discussions at CPISC's Annual Forum in June 2008, in Montreal.

AND THIS PROJECT WILL LEAD TO...

The technology roadmap and the skills requirements that it details will provide a comprehensive framework to help shape a strategic plan to address our industry's needs. We will be able to compare our identified skill standards with the skills that will be needed to address new technological developments as well as identify and address gaps in training programs. It will also be a critical tool for small and medium companies that make up the majority of Canada's printing establishments.