

# **Saskatchewan Information Technology Sector Partnership**

## **Education and Training Needs Assessment**

June, 2001



**EXECUTIVE SUMMARY**

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### **Introduction**

Trimension Group together with the Canadian Information Processing Society of Saskatchewan (CIPS Saskatchewan), the provincial society which is associated with CIPS National, on behalf of individuals in the industry, submitted a proposal to Saskatchewan Post-Secondary Education and Skills Training for funding under the Sector Partnerships program. Funding provided the opportunity for industry and key stakeholders to work together with a primary objective to address training needs and human resource planning in the industry.

A Steering Committee comprised of industry representatives, key industry stakeholders and education and training providers was formed to work with and direct Trimension Group in carrying out the research components, analysis, and preparation of the final report.

To develop and implement appropriate strategies for a proactive human resource plan for the industry, the Steering Committee undertook a needs assessment of the Information Technology (IT) industry. The objective was to identify current human resource and training needs and also look at future requirements in the industry. This report presents the results of the research.

### **Methodology**

Trimension Group carried out both qualitative and quantitative primary and secondary research as part of the study. Primary research results were validated through focus groups conducted with participants involved in the industry.

The following provides a brief description of the steps taken to complete the study and produce the final report:

#### **Literature Review**

A literature review was completed with the objective of providing the Steering Committee with background information necessary to establish a base for the human resource and training needs assessment. The information for the literature review was obtained from various sources including published and unpublished reports.

#### **Education and Training Database**

Research was conducted to develop and compile a database of education and training programs for the Saskatchewan information technology industry. The database outlines education and training programs that are applicable to the information technology industry. The database includes programs offered across Saskatchewan and identifies the institution and contact information. The results indicate a more comprehensive database should be developed in order to promote awareness of all the training programs and courses that are already available.

#### **Industry Survey**

Trimension Group developed two survey instruments in consultation with the Steering Committee. The first survey was conducted by e-mail or fax between August and December, 2000. Sixty completed surveys were received. A second survey was administered by telephone

during the month of March, 2001, and 284 interviews were completed. As well, two completed surveys were received by fax. A total of 346 e-mail, fax and telephone interviews were completed between August, 2000 and March, 2001. All the interviews were completed in-house by Trimension Group.

### **Industry Validation**

In April, 2001 two focus groups were completed as part of the qualitative research to validate the survey results. The focus groups were made up of employers and were held in Saskatoon, and Regina.

## **Key Findings**

Key findings gathered from the research provide an overview of the industry and summarizes the results of the human resource and training needs of the Information Technology industry organizations. The key findings from the Literature Review and the Needs Assessment study are as follows:

### **Literature Review**

The Literature Review is consistent of a review of various reports that have been published both provincially and nationally on the Information Technology Sector.

#### **Components of the Information Technology Sector**

- The sector is divided into two main components: manufacturing and service.
- In Saskatchewan it is estimated that there are 247 Information Technology companies employing over 10,000 people.
- There are an undetermined number of companies who have IT departments and/or employees performing support to the main core of the business.
- Previous studies in Saskatchewan indicate there were shortages of graduates and qualified graduates.
- The IT industry in Saskatchewan has been one of the fastest growing sectors in the provincial economy over the past number of years.

#### **Education and Certification**

- There is a perception within the industry that post-secondary education and training does not fully prepare students for jobs in the industry.
- The Canadian Information Processing Society (CIPS) is the largest Canadian association that represents Information Technology professionals. CIPS has developed the Information Systems Professional (I.S.P.) designation.
- The Software Human Resource Council (SHRC) in co-operation with CIPS and the industry developed the Occupational Skills Profile Model (OSPM) to describe the skills and responsibilities associated with 24 occupational streams in the software industry.

## **Needs Assessment**

The following summarizes the key results from the telephone survey and the focus groups.

### **Employment Trends**

- Fifty companies indicated they currently have vacant IT positions. These occur in the areas of programming, software development, network engineers, web-based application development, computer support and business analysis and design.
- Respondents indicated the major difficulties in recruiting IT employees are the lack of applicants with relevant experience, a lack of applicants with required skills, and the inability to offer competitive wages.
- The three most common difficulties experienced by the industry in recruiting are location, salary and training.
- Companies that were surveyed still recruit the majority of their employees from within the province.
- Due to the economic downturn in the high tech sector there has been a softening in the employment growth projections. In spite of this, there appears to be opportunities of growth as multi-task resource persons and sales personnel. These two occupations reflect a shift away from the more technical/programming type positions.

### **Recruitment and Retention**

- Employee retention does not appear to be an issue for the majority of companies surveyed.
- Those companies who stated retention was an issue in their organization were mainly businesses and organizations that employ IT workers to support their operation, not IT companies.
- The main reason given as to why employees leave a company is voluntary leave.
- Of those who leave voluntarily, better opportunities elsewhere in Saskatchewan was the main reason given.
- The 25-34 age group has, by far, the most number of full-time and part-time employees.
- By and large, the lack of a skilled workforce is not compromising business growth of the companies that were surveyed in the Information Technology industry.
- Employers tend to recruit the majority of their employees from within the province.

### **Skill Requirements and Training**

- Just over one-third of the companies surveyed indicated having difficulties in providing ongoing training to their employees.
- The three most common reasons for this difficulty were lack of time, lack of resources (both human and/or monetary) and lack of training available in the province.
- A combination of in-house and external training was identified as the best way to provide employees with ongoing skill development.
- Over two-thirds (67%) of the companies surveyed indicated the education and training programs offered in Saskatchewan meet their hiring needs.
- Fifty-six percent (56%) of the companies surveyed indicated that existing education and training programs offered in Saskatchewan meet their ongoing training needs for existing employees.

### **Equity Participation**

- Of the companies surveyed, men predominantly occupy Information Technology positions.
- Based on the survey results, 1.75% of the Information Technology workforce are aboriginal, 1.2% are persons with disabilities, 4.4% are visible minority persons, and approximately 20% are women.
- The industry is under represented in all categories, other than men, against the provincial workforce participation average.

### **Certification and Professionalism**

- Almost 75% of those surveyed were not familiar with the CIPS I.S.P. designation.
- Over 80% of those companies surveyed do not seek I.S.P. designation when recruiting.
- Forty-five percent (45%) of those who responded look for other types of certification when recruiting new employees.
- Fifty-five percent (55%) of those same respondents encourage employees to obtain other types of certification.

### **Recommendations**

The following recommendations were developed by the Steering Committee. Implementation of these recommendations will be the responsibility of the Steering Committee in partnership with their stakeholders.

1. The Steering Committee investigate the possibility of establishing a permanent body to implement and co-ordinate the needs identified in this study.

#### *Strategies*

- **Develop a mechanism to bring industry and stakeholders together to discuss common issues and needs.**
  - **Develop ways to co-ordinate the training that is needed by industry so training is more accessible and affordable through sharing costs.**
2. The Steering Committee review its membership to enhance the representation on the Steering Committee.

#### *Strategies*

- **Identify potential new members on the Steering Committee.**
- **Saskatchewan Advanced Technology Association (SATA) be approached to become a partner.**

3. Develop a communication strategy to promote the results of this study and the on-going work of the Steering Committee.

*Strategies*

- **The Steering Committee will meet to discuss and develop a communication plan to promote the Sector Partnership.**
  - **Present members of the Steering Committee will distribute copies of the Executive Summary to their stakeholders.**
  - **The full report will be distributed to all Steering Committee members.**
  - **CIPS Saskatchewan will present the results of the study nationally within CIPS.**
4. The Steering Committee identified there is a need to promote an awareness of the Information Technology education and training programs/courses available in the province for employers and IT managers.

*Strategies*

- **Create a comprehensive education and training database.**
  - **Determine a method for upgrading, maintaining and distribution of this database.**
  - **Promote and raise awareness of IT Conferences and Workshops that are available for the industry.**
  - **The Steering Committee in partnership with key employers co-ordinate the organizing of relevant conferences.**
5. The Steering Committee recognizes there is a need to market and promote the career options available. Also, to encourage and increase participation of women, visible minorities, persons with disabilities, youth and aboriginal peoples in the workforce.

*Strategies*

- **Create an awareness of career options by working with the K-12 school system to promote the industry.**
- **Identify other stakeholders that should be included and work with them.**
- **Promote the value of Science fairs and participate in them.**
- **Offer mentorship and on-the-job training to students to address the increased competition there is for them.**
- **In partnership with other stakeholders, SIAST, the Universities, the Aboriginal institutions, regional colleges and the industry, develop opportunities to increase the participation of aboriginal people, women, youth, visible minorities and person with disabilities in the IT industry workforce.**

6. The Steering Committee in partnership with CIPS Saskatchewan will work to raise the awareness of the accreditation and certification options available.

*Strategies*

- **CIPS Saskatchewan as a member of the Steering Committee will develop a strategy to promote the benefits of accreditation and certification.**
- **Create and make available a comprehensive database of options for employers..**

7. The Steering Committee needs to facilitate and conduct follow-up survey and research work to ensure trends and changes that are occurring are captured and addressed.

*Strategies*

- **Research what's happening in other provinces and internationally.**
- **Monitor the current market demand to anticipate and prepare for change.**

8. The Steering Committee and industry establish a mechanism with the education and training providers in the province on ways to promote the manner in which programs and courses are offered, what programs are already available and the skill sets graduates of these programs and courses leave with.

*Strategies*

- **The education and training providers work with the Steering Committee to develop the process.**
- **A more effective communication and promotion plan is needed in order for employers to become better informed.**
- **Education and training providers need to be participants in the discussions that take place in order to be better prepared to provide graduates with the skill sets to meet industry needs.**

9. The Steering Committee in partnership with industry and other stakeholders need to work together to develop strategies to address recruitment and retention, professional development and business growth.

*Strategies*

- **Set up separate task teams to focus on each area separately.**
- **Bring in experts who can assist in addressing these issues through their experiences in what was done elsewhere or for other sectors.**
- **Hold focus groups to garner input and feedback.**

## **Next Steps**

Over the next six months, the Steering Committee, in partnership with CIPS Saskatchewan, industry, training providers and other key stakeholders will:

1. Develop a communication strategy to ensure communication of the results of the needs study is distributed to as wide an audience as possible.
2. The Steering Committee needs to explore potential funding and resource sources as well as partnership contributions to sustain themselves in order to carry on and implement the recommendations and next steps.
3. Research the education and training database and the most appropriate manner in which to maintain and up-date it regularly.
4. Review the existing membership of the Steering Committee.
5. Develop a marketing strategy that will promote the industry.
6. Develop a marketing strategy that will aid in increasing the participation rate in the workforce for women, aboriginal people, visible minority people and persons with disabilities.

The process to address these next steps is as follows:

- The Steering Committee will arrange a meeting of the Steering Committee to discuss these next steps and how they will be addressed.
- The Steering Committee will identify who should be approached to join as a member of the Steering Committee. A potential new member is the Saskatchewan Advanced Technology Association (SATA).
- The Partnership will discuss ways of continuing the Steering Committee through sharing the costs of meetings, chairing the meetings, developing proposals for financial support and identifying who should assume a greater leadership role.
- The Steering Committee will finalize the details of an effective communication plan.