Information Communication Technology Studies

Labour Shortages in the ICT Sector

June 2011

The Blue Sky Region
Nipissing & Parry Sound Districts

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Contents

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"The Industry is expected to experience continued growth and an average of 17,000 new hires is projected over the next 5 years." *– ICTC*

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"Levels of educational attainment for the area are much lower than the rest of Ontario. Those aged 25-64 were reported having almost half the university graduates compared to the provincial average."– *CENSUS 2006*

"Only 2.8% of those surveyed reported their major field of study as mathematics, computers and information sciences in the entire Muskoka, Nipissing, Parry Sound and Timiskaming districts."– *THE ONTARIO TRILLIUM FOUNDATION 2008*

Executive Summary

The following research was collected to investigate the ICT industry in the Blue Sky Region and to forecast its future labour needs. After reviewing the articles "*Canadore slashes programs, cuts staff"* in the North Bay Nugget and "*Study Shows Vast Skills, Labour Shortages Looming for Canada's Tech Sector"* by the Information and Communication Technology Council, it was necessary to investigate the implications of these claims on the Blue Sky Region.

One of the hot topic issues of March 2011, was the projected alarming human resource shortages expected to hit the ICT industry in all of Canada in the near term. It's expected that the industry will need to hire an estimated 106,000 workers over the next five years. The study by the Information Communication Technology Council declared that enrollment levels are flat or falling, all while the demand for such workers is increasing. That being said, Canadore College has suspended a dozen programs following a review of its operations. Computer programmer analyst; computer systems technician/technology-networking; Internet applications and web development, have all been a part of the dozens of programs suspensions at Canadore College.[1]

It was estimated in Canada during 2008, that the industry would need approximately 90,000 employees over the next 3 to 5 years. Industry growth and labour shortage concerns for the area are not new. According to the 2005 labour needs study, local area ICT firms expected to grow and would require a need for new staff. The Information Communication Technology Council states, the main recruitment challenge for ICT businesses is attracting individuals with integrated skills from other fields like business and finance with substantial experience in the industry.

Despite the cuts, the following report recognizes that there is an adequate resource of computer related training in Nipissing and Parry Sound districts. Also, the regions proximity to the third largest North American ICT market, the GTA, makes it possible for ICT firms and skilled individuals to migrate to the area. What remains to be discussed is the response from local ICT firms to the labour issues that are expected to affect the entire Canadian ICT industry and what strategies are needed to ensure that the necessary skills are in place to lead our local ICT industry into the future.

The ICT industry is of great importance for the economic growth and prosperity of the country. Its impacts are felt across all levels of industry, government and the Canadian society. The industry is largely made up of sales and services related to computers and software development. Therefore, in a region that's dominated by sales and services, the ICT industry will continue to directly play an important economic role in the Blue Sky Region.

Resolving these issues will require input from local employers. This document has identified all of the external factors that play intricate roles in helping or hindering the development of the area's ICT industry. It is recommended that in addition to these findings that a survey be conducted to obtain input from the local ICT employers in order to better address their concerns and to help develop a regional strategy. Some important questions up for discussion are as follows:

- How to increase enrolment levels in post secondary institutions?
- What incentives can be provided to local businesses to hire interns or co-op students?
- How will the area continue to focus on attracting and retaining skilled individuals to meet additional demand?
- What is the regional strategy to market the Blue Sky economy as an ideal environment for ICT businesses to establish, expand and prosper?

Introduction

How will local ICT firms and small businesses in the Blue Sky Region battle the disadvantages of downward trending enrollment levels of Information Technology post-secondary programs, program cut backs and alarming national forecasted ICT labour shortages? Computer technology program cuts at Canadore College and nationally forecasted labour shortages may be the double edge sword that leaves local ICT firms and small business at a disadvantage. The importance of the ICT industry and its significance to the Canadian Economy has been known. Post-secondary enrollment levels in computer related fields has been trending downwards, all while the industry has grown significantly since the tech-bust in 2002. Industry gurus like Bill Gates have been talking about the need for more students to take up computer science for many years now. The industry has had more demand than supply, even when factoring in immigration.[2] This report is intended to open discussion on trending topics and begin the process of building a local strategy to combat the disadvantages of the labour supply shortages and lack of skilled individuals. The ICT industry in the Blue Sky Region need not only look at the national trends but must assure that there is the adequate infrastructure to train individuals locally with the necessary skills demanded by local employers and to identify what the region is doing to attract or retain highly skilled individuals in technology related fields.

Methodology

Insight will be gathered by analyzing data from Industry Canada's sector profile, statistics from the Information and Communication Technology Council and various local resources. By comparing both national and local industry trends over the last decade, inferences can be pulled to outline and forecast the fate of the industry and its labour needs in the Blue Sky region. A general industry overview will be conducted in the first section of the report in order to introduce the Information Communication Technology industry to those less familiar. In section 2, an external environmental analysis will be conducted to introduce general trends in the districts of Nipissing and Parry Sound that may impact the local industry. The industry environment will also be analyzed to inform readers about relevant issues that affect ICT business directly such as labour force demographics in the Blue Sky Region. Section 3, will discuss current trends like the demand for labour in the industry and the unique issues it faces, such as the attraction and retention of a skilled workforce and examine whether necessary training infrastructure is in place to prepare prospective students/employees. Lastly, section 4 will serve as an approach to determining the labour requirements of local firms through either formal interviews or a round table discussion in order to estimate the labour requirements that would meet employers' future demands. Afterwards, the information provided should open discussion on the fate of our ICT industry and possibly develop strategies to redirect that fate.

Data Considerations

Statistical differences are present with data collected prior to 2002. The industry classifications have since been revised and any direct comparison to the industry prior to 2002 should take into account these discrepancies. The industry is complex in terms of defining its boundaries. ICT components cross over into many other industries operations. For this reason, the North American Industry Classification System (NAICS) will be assumed when determining the nature of the industry and comparing the different sub-sectors within it. The decision to replace the 2011 long-form census with a voluntary format may cause issues when comparing between this report's predictions and findings of the new census data.

Section 1: Industry Overview

1.1 The Canadian ICT Industry

The Information Communication and Technologies (ICT) industry contributes about 5% to the Canadian GDP, a total of approximately 60 billion dollars as of 2008. Imports almost double the industries exports due to the fact that there was continued outsourcing of the ICT manufacturing segment. ICT employs nearly 678,000 Canadians and makes up approximately 4% of total employment across the country.[3] Approximately, 60% of employees work in companies that produce products or services and the remaining 40% in public institutions and organizations that use ICT in their business functions.[4] In 2008, 82% of ICT employers had between 1-9 employees. Likewise, there was a 10.4% increase of employment from 2002-2008, despite the moderate decline felt throughout the industry in 2007.[5]

There is substantial evidence that the ICT industry has been successful in helping the Canadian economy. The rate of adoption and the utilization of ICT in businesses are linked to increased innovation, new business opportunities/market access, and higher economic growth and employment.[6] While it is still a relatively new industry and despite the tech crash of 2000, the ICT industry as a whole has rebounded and has continued to grow.[7] The industry has maintained an annual growth rate of 4.1% and has increased its GDP by 32% between 2002 and 2009.[8] The Industry is expected to experience continued growth according to the ICT Council and an average of 17,000 new hires is projected over the next 5 years.[9]

1.2 Market Segmentation

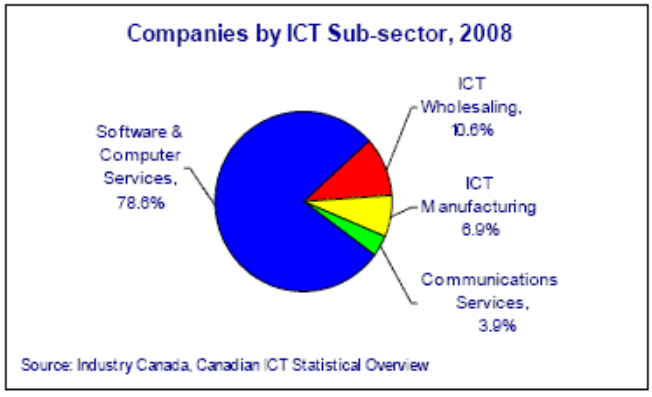
Based on the North American Industry Classification System (NAICS), the industry is broken into the following 3 categories, ICT manufacturing which accounts for only 7% of the entire industry, ICT sales and services make up just over 80% and wholesaling is in part 10% of the industry.[10] In 2009, the industry's capital expenditures were much lower than its previous high in 2002, but have since increased due to rising demand for telecom services, ISP's and data processing services. Total capital expenditures were $764 million, in 2009. On the other hand, R&D expenditures have steadily increased since 2002 and have risen 17.7% for a total of $6.2 billion. ICT has the best private sector R&D investment in Canada.[11] Sub-sectors are broken down as follows:

ICT Manufacturing – 7%

- Computer and Peripheral Equipment Mfg
- Communications Equipment Mfg (including wired and wireless)
- Electronic Component Mfg
- Audio and Video Equipment Mfg
- Instruments Mfg
- Communication Wire and Cable Mfg
- Commercial Industry Machinery Mfg

ICT Services –

- Software and Computer Services – 78.6% (software publishers, computer systems design, and data processing)
- Communications Services – 4% (telecommunications services, ISPs, Cable and Other Program Distribution).



ICT Wholesaling – 10.4%

- Computer and Communications Equipment and Supplies Wholesaler-Distributors.
- Office and Store Machinery and Equipment and Wholesaler-Distributors.

1.3 Community and Environment

Canada is continuing to pursue the advantages of ICT's by making it part of its economic, political and social strategy. By offering government services, tax preparation and online filing, it is facilitating administrative time and cost savings for the government, businesses and individuals.[12] Likewise, ICT is playing a more significant role in regional planning and economic development through the use of social media applications available.[13] It is also known that Canadians spend more time on the Internet than any other country in the world. In 2010, Canadians spent an average of 43.5 hours per month on the internet, which was nearly double the worldwide average. Canadian growth of online activity over the last year has been credited to a 12% hike in the number of users 55 years and over.[14] Both provincial and Federal governments have recognized the importance of connectivity and have made considerable investments in network deployment and application development over the years.

The Greater Toronto Area (GTA) is the third largest cluster of ICT in all of North America. It hosts 3,362 ICT related corporations and employs approximately 150,000.[15] The GTA prides itself on having renowned post-secondary institutions and expert talent in the industry. However, they have not been immune to the downward trending enrolment levels of ICT related post-graduate fields. British Colombia has the fastest expanding ICT labour force, an increase of 14.6% (10,226 employed) from the first to second quarter of 2010 alone. Consequently, the Prairies have lost nearly 15.2% of its ICT labour force.[16]

Section 2: External Analysis

2.1 General Environment – Nipissing/Parry Sound

- **Demographics -** Population growth in the district of Nipissing and Parry Sound has been significantly slower than the rest of Ontario. That is the case because much of Ontario's growth is attributed to immigration, which tends to settle in the urban areas of southern Ontario. Both districts, Nipissing and Parry Sound, vary substantially demographically.[17] Age demographics show significant out migration of young people and increasing numbers of seniors for the combined area. There is a net out-migration of the age category of 18-44 for the area of Nipissing. This group has tendencies to seek education opportunities and career advancements outside the area. A net-immigration pattern is the case in the Parry Sound district because of the increase numbers of seasonal homes and seniors settling in the area for retirement. Parry Sound had both the largest proportion of seniors (21.1%) and the smallest proportion of working age people (64.6%) between the two districts.[18] The overall area has a 60% labour participation rate, 8% lower than provincial levels.

- **Economic** –The Districts of Parry Sound and Nipissing have the two lowest unemployment rates in all of Northern Ontario. There is also a significantly higher rate of self-employment than any other area in the north, a rate of 14%.[19] The occupational structure is significantly different than the rest of Northern Ontario. Nipissing and Parry Sound is reliant on small business and has a generally diversified economic base. The majority of its economy is fueled by jobs in sales & services, management and professional services. Both districts have few major industry or manufacturing related jobs, especially when compared to Sudbury and Timmins. Resource based industry is also becoming less predominant in the area as illustrated in the case of Mattawa who at one time relied heavily on the pulp and paper industry. In 2006, the town of Mattawa suffered the greatest spike in unemployment rates in the area reaching highs of approximately 22% and 24% youth unemployment respectively.[20] Another economic

factor that may influence the area in the future is the retirement of the baby boomers and the subsequent supply of many occupational opportunities.

- **Technological –** Technology plays a big role in the facilitation of research and innovation that would have not been possible before. As technology advances in all developed nations, new product innovations create the capacity to reinvent and to further innovate in what seems to be at an exponential rate. Technology represents a considerable minority as the main field of study for those who possess post secondary education in the Districts. In a community profile study by the Ontario Trillium Foundation, only 2.8% of those surveyed reported their major field of study as mathematics, computers and information sciences in the entire Muskoka, Nipissing, Parry Sound and Timiskaming districts.[21] This example could indicate the lack of internal skills in, not only the Nipissing and Parry Sound Districts, but the surrounding areas as well. There have been considerable efforts in the area to build and develop ICT infrastructure not only in the urban centers of northern Ontario but the rural and remote areas as well. The expansion of high-speed networks is helping to make possible small business in remote areas. Access has made possible the success of the self employed and has helped retain, grow and expand business in these areas.

- **Socio-cultural -** Internet is becoming as valuable to Canadians as traditional utilities like electricity.[22] The recent growth in the industry has been helped by the adoption of ICT services by the senior population. Users are becoming aware of the benefits of accessing government services and other important information online. This segment will play a substantial role for the technology industry as end users. Levels of educational attainment for the area are much lower than the rest of Ontario. Of those aged 25-64, the largest portion had college certificates or diplomas. The category also reported having almost half the university graduates compared to the provincial average.[23] Lower incomes are correlated with levels of educational attainment. These factors signify that the Blue Sky Region has a more selective pool of talent available to the ICT labour force, lower disposable incomes and less affluent consumers to support the industry.[24/25]

- **Global –** In a country that is continuing to rely on immigration to support economic and population growth, the Blue Sky Region needs to continue to make efforts to encourage and attract skilled individuals from outside the region. Good ICT infrastructure plays an integral role in making this area a more attractive market to newcomers.

2.2 Industry Environment – Nipissing/Parry Sound

- **Likeliness of new entrants**

The Nipissing and Parry Sound districts have several attributes that may appeal to new entrants of the local ICT Industry. The relative proximity to Toronto might make the area more appealing to large urban firms looking to expand or relocate their business. This market represents 20% lower real estate and human resource cost, not to mention the lower employee turnover rates.[26] Also, the ICT industry benefits from its ability to deliver its services and products globally without having geographical constraints. The two districts being in relative proximity to highly reputable post-secondary institutions and the largest Canadian ICT cluster makes it a highly attractive environment for industry firms to realize cost savings. The marketability of the Blue Sky Region as a natural living environment may appeal to firms seeking to offer employees a better quality of life.

- **Bargaining power of suppliers**
  Suppliers in the industry are the distributors of manufactured products and the distributors of associated sales and services. In Parry Sound and Nipissing the majority of the ICT sector is comprised of sales and services. Suppliers of services such as telecommunications have high bargaining power because of market entry barriers. The high cost associated in building the networks creates high barriers for firms entering the telecommunications sectors. The complex rural topography also makes it less appealing for large network builders to deploy high-speed internet in these areas. High-speed internet therefore becomes available to rural areas through means of government subsidies to leverage returns on investment for the private sector. Consequently, the industry environment in the north has a low number of big players in the telecommunications and network industry.

- **Bargaining power of Buyers**
  The buyers of ICT's are the end users, the individuals or businesses that consume related products and services. In the case of software and web design, the bargaining power of buyers is relatively high due to the logistics of product distribution. Of the majority of products sold in the ICT sector, area buyers have the liberty to shop around and obtain products from other markets at next to no cost for delivery. Therefore, local market ICT firms have significantly lower prices for products and services compared to the average in Toronto. Web-development is an ideal example for this case. Web design services in the Parry Sound and Nipissing cost approximately half of services offered in Toronto.

- **Threat of substitute Products**
  A substitute product is a good or service from outside a given industry that performs the same or similar functions as a product within the industry.[27] The uniqueness of the ICT industry is that its boundaries have far exceeded that of any given industry. ICT has played an intricate role across vast industries and will continue to do so. Subjective observation could suggest that the industry is a threat to itself. By the rate of product innovation or integration of smaller more multi tasking devices the industry can make sub-sectors obsolete. Theorists have suggested that the industry has facilitated planned obsolescence and suggests that ICT is being treated much like consumer durables.[28] After the economic turmoil in 2008 the industry leaders have indicated the importance of engaging in sustainable business practices. The way the Internet is delivered to end consumers has become a threat to itself. Each technology has some unique benefits, but the apparent overlap is significant. DSL, Fibre, Cable, Wireless Point to point, Satellite broadband, cellular HSPA networks are all competing technologies. It is expected that the industry technologies will continue to converge with services such as Voice over IP, VoIP and TV over IP.

- **Intensity of Rivalry among competitors**
  The competitive rivalry is very intense in the ICT industry. Competitors try to improve their position in the marketplace by means of price competition, acquisitions, advertising battles and new product introductions.[29] Industry firms not only compete nationally but must compete on a global scale in order to remain competitive. Canada is in a significantly advantageous position in the global ICT sector as it is renowned for its brain power and world class R&D.[30] This industry has numerous competitors, which can intensify the rivalry. There has been considerable growth in this industry and competitors are constantly trying to fight for better product innovations and push products to launch ahead to assure favorable brand positioning in consumers' minds. Met by competition around the globe, area competitors find it a difficult environment to navigate. There are extremely high exit barriers for some sub-sectors of the industry. The amount of money put into a company's assets such as manufacturing, R&D and government restrictions alone, become too costly to give up. For example, the telecommunication networks are valuable assets and make it difficult to abandon.

Section 3: Internal Analysis

3.1 Current Trends & Key Industry Issues

One of the hot topic issues of March 2011 was the projected human resource shortages expected to hit the ICT industry in all of Canada in the near term. It's expected that the industry will need to hire an estimated 106,000 workers over the next five years.[31] The study by the Information Communication Technology Council declared that enrollment levels are falling or are almost constant and immigration with related qualifications is declining, all while the demand for such workers is increasing.[32] The main recruitment challenge for ICT businesses is attracting individuals with integrated skills from other fields like business and finance with substantial experience in the industry.[33] Training for the ICT labour force is a major barrier. In an industry based strongly on innovation, research and development, it's difficult to predict the type of skills training needed in the future. The way information is being transmitted is constantly changing. Consumers and businesses are demanding better infrastructure and more compatibility among devices. For example, casual media users have an inclination to replace computers with integrated mobile devices and tablets. Currently there is a convergence of consumer products and it is expected to converge further. Televisions have integrated internet services to access music videos and TV shows. Mobile phones, web casting radio and TV programs on the Internet, are a few examples of how information and communication technology is converging.[34]

"The main recruitment challenge for ICT businesses is attracting individuals with integrated skills from other fields like business and finance with substantial experience in the industry" - ICTC

3.2 Previous Demand for Labour

It was estimated in Canada during 2008, that the industry would need approximately 90,000 employees over the next 3 to 5 years.[35] Therefore, industry growth and labour shortage concerns for the area are not new. According to a 2005 labour needs study, local area ICT firms expected to grow and would require a need for new staff.[36] On the other hand, 2005 figures show that the region had a lower ICT sector turnover rate compared the Canadian average.[37] From a training perspective, almost half of respondents to the 2005 labour requirements study determined that there were no gaps between their staff requirements and the training available locally. One fifth of the firms send staff to Toronto for training, others use either online or internal training to bring staff up to speed.[38]

3.3 Training available for the Labour force

There have been major computer technology program cuts at colleges throughout the north. For example, computer programmer analyst; computer systems technician/technology-networking; Internet applications and web development, have all been a part of the dozens of program suspensions at Canadore College.[39] Despite the cuts, related training in the area is offered through the University and Colleges as computer science degrees/diplomas and through private vocational schools which offer very specific certifications and courses that are more flexible and begin almost monthly. Canadore College has specified a new program to be offered in the fall 2011. The mobile-application development program is in demand and has been developed with the future of the industry in mind. Offering higher learning through University and the acquisitions of Computer Science Degrees is testament to the need to develop and retain a better skilled workforce in the area. Nipissing University has also done very well at integrating technology with other curriculums. The technology stream through the Business Administration degree is essential when business skills are required by the ICT industry. The flexibility of the Career College (CTS) means students can acquire certifications on a more perpetual basis and as needed. Certifications are forever required because of the demand for specified skills across the industry

sub-sectors. The following is a list of programs offered in the area in computer and technology related fields.

- **Canadore College**

Mobile Application Development

The Mobile application development program builds skills in the fastest growing segment in the industry. It shares many similar applications to web-pages design programs. Ultimately, the skills acquired through this program would allow these graduates to advance and to pursue different work streams afterwards.

Curriculum

SEMESTER ONE:

- Mobile Technology
- Web Development for Mobile Devices
- Rich Media Development
- Project Management
- Media Development
- AIR Development
- Java Development
- RIM Project Development
- Game Development

SEMESTER TWO:

- Android Development
- 3D Graphics and Animation Rich Media and Online Services for Android Devices
- Android Project Development
- iOS Development
- Marketplace Promotion
- Apple OS
- iOS Project Development

Civil Engineering Technician

Civil engineer technicians are highly sought after in a number of industries including construction, forestry, mining, telecommunications, and road construction.

Information Technology Technician

Apprenticeship - Available via the Internet Only

- ITT 112 Introduction to Microcomputers
- ITA 114 Microcomputer Applications
- ITA 116 Operating Systems
- ITA 118 Basic Electronics
- ITT 120 Desktop Platforms
- ITT 121 Mobile Platforms
- ITT 122 Basic Network Systems
- ITT 124 Health and Safety Practices
- ITA 126 Documentation for ITSA
- ITT 128 Customer Service and Professionalism in the Workplace
- ITT 130 Troubleshooting

And offers specializations in:

- Hardware, Help Desk, and Networking.

- **Nipissing University**
  - **BBA - Technology Management Stream** offers The following Course:
    - ORGS 3837 Organizational Development and Change
    - TMGT 2106 Systems Analysis and Design
    - TMGT 2807 Project Management
    - TMGT 3006 Technology, Business and Society
    - TMGT 4006 Management of Innovation and Technology
    - ACCT 3127 Accounting Information Systems
    - COSC 1557 Introduction to Computer Science

- COSC 1567 Programming in C++
- COSC 2767 Object Oriented Programming
- COSC 3606 Database Maintenance
- TMGT 2011 Fundamentals of GIS and Computer Mapping
- TMGT 3017 Programming for Business
- TMGT 3096 Field Placement in Technology Management
- TMGT 3236 Networking in a Business Environment
- TMGT 4126 E-Business
- TMGT 4417 Current Trends in Technology Management

- **Bachelor of Science (Honours) -** Single Major Computer Science
- **Bachelor of Science (Honours) -** Bachelor of Education (Concurrent)
- **Bachelor of Science (Honours) -** Combined Major Computer Science and Mathematics
- **Bachelor of Science (3-Year General) -** Single Major Computer Science
- **Bachelor of Science (3-Year General) -** Combined Major Computer Science and Mathematics
- **Bachelor of Arts (3-Year General) -** Single Major
- **Certificate in Game Design and Development**

Minor - A minor in Computer Science is available to students pursuing a major in another discipline.

o CTS Canadian Career College - Network Engineering Technologist

The 44 Week Diploma Program from CTS prepares the student to become certified through Microsoft (MCP, MCSA, MCSE), CompTIA (A+, Network+), Cisco CCNA (Certified Cisco Network Associate) enabling employment internationally. This program offers all the necessary training to be successful in computer service and engineering fields. Upon successful completion of the program, an optional 4-6 weeks full-time placement can be arranged at the student's request.

Courses Include:

- Computer Mathematics
- Cabling Infrastructure Design
- A+ by Comptia & Network Fundamentals
- Windows Vista Configuration
- Windows Server 2008 Active Directory Configuration
- Windows Server 2008 Network Infrastructure Configuration
- Windows Server 2008 Applications Infrastructure Configuration
- Windows Server 2008 Enterprise Administrator
- Microsoft SQL Server 2005 Implementation and Maintenance
- Configuring Microsoft Exchange Server 2007
- Introduction to Linux
- Cisco Certified Network Associate
- Technical Project
- Education Success
- Interpersonal Workplace Skills
- Business Communication
- Job Search

Source: CTS Career College www.ctscc.com

o CTS Corporate Training

CTS Computer Products Corporation has a wide range of courses in many of today's popular software applications and operating systems with training options to suit individual needs. They have a Skills & Competency Assessment program that will determine what skills employees already possess and what skills are required to meet organizations requirements. CTS acts as a consultant and through the Corporate Training Program, they offer high quality training for organizations. They customize and design courses to fit a businesses' technology and training needs.

CTS' private group sessions may be held at either a client's site, in a rented classroom facility, or in a CTS classroom environment. For training at client sites or in rented classroom facilities, CTS provides a complete classroom set-up with computers, power bars, LCD projector, etc.[40]

- **Athabasca**

  Athabasca is an accredited research institution in Athabasca, Alberta, which also offers distance education courses and programs. The following are some technology related programs offered through distance education. The programs at Athabasca University are included as an example of several other on-line options.

  Bachelor of Science: Computing and Information Systems (4-Year)

  - Programming languages
  - Algorithms
  - Data structures
  - Architecture
  - Data communications
  - Database and information retrieval
  - Systems development

  Master of Science, Information Systems (MScIS)

- **Contact North**

  Contact North allows students seeking college training in the computer fields to obtain degrees, diplomas and certifications in programs from colleges and universities all over the province. Programs such as, Information System Management from Ryerson University, Advanced Computer Programming or Network Engineering from Humber, Conestoga and many more. http://www.contactnorth.ca/

Section 4: Concluding Remarks

The information gathered in this report identifies that there is adequate resources to support the training and skill development needs of area ICT workers. The nationally forecasted trends have brought the burden facing the industry to the front burner. This report has identified some external factors that play important roles in helping develop the area ICT industry. Naturally, the review of these issues will be ineffective without the direct input from local firms, in order to determine the correlation between these findings and the actual internal industry needs. Ultimately, the ICT industry is in need of highly educated individuals capable of adapting to the unstable industry environments and to increasing innovations. It can be determined that the industry will grow because of increasing demand for related products and services. As the industry remains a major player in the national economy, it will continue to positively influence the Nipissing and Parry Sound districts. In an economy based on multitudes of small businesses that are primarily composed of sales and services, it is expected that technology will continue to play an important role across all industry sectors and become a driver of this economy's future. There are the necessary infrastructures in place to locally train the skilled individuals to fill the labour gaps of tomorrow. Both Nipissing and Canadore College are equipped to attract prospective individuals. The most important issue to be addressed for the area would be the downward trending enrollment levels and the out-migration of the working age population. How could the Nipissing and Parry Sound area retain skilled individuals within the area to help meet the areas future technology labour needs?

Opening Discussions

Logically the next step would be to conduct a survey, one that will include direct input from local employers that can be matched with the external factors to provide a strategy for the area. Therefore the following questions are intended to be answered through the process of a survey (on-going).

1. What are the human resource needs from a local ICT firm's perspective?
2. What are their current strategies for recruitment and training?
3. What is their assumption about the Industry's future?
4. What are their future objectives?
5. How can enrolment levels in technology-related post secondary programs increase?
6. What incentives are there in place for local businesses to hire interns or co-ops?
7. How can the area attract and retain skilled newcomers to meet additional labour needs?
8. How can Blue Sky Region be marketed as an ideal environment for ICT businesses to establish, expand and prosper in the area?

Endnotes

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