

Shuswap Technology Labour Pool Assessment

Prepared for: The Salmon Arm Economic Development Corporation

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COMMUNICATIONS

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Table of Contents

EXECUTIVE SUMMARY	2
RECOMMENDATIONS	3
1. FORM AN INDUSTRY ASSOCIATION FOR TECHNOLOGY PROFESSIONALS.....	3
2. EDUCATE INDIVIDUALS ON THE OPTION OF SELF-EMPLOYMENT	6
3. FEASIBILITY OF BUILDING ACTIVE DATABASES OF EMPLOYABLE LABOUR	8
4. ADDITIONAL SUPPORT FOR EXISTING BUSINESSES.....	10
OVERVIEW	11
METHODOLOGY.....	12
DATA COLLECTION	13
RELIABILITY OF FINDINGS.....	15
STUDY FOCUS	15
RESEARCH FINDINGS.....	16
TECHNOLOGY COMPANIES IN THE SHUSWAP.....	16
EMPLOYMENT DYNAMICS AND JOB CLASSIFICATIONS	17
METHODS OF RECRUITMENT AND RELATED OBSERVATIONS.....	19
INWARD AND OUTWARD FLOW OF TECHNOLOGY WORKERS.....	21
CHALLENGES ENCOUNTERED WHEN RECRUITING ADDITIONAL LABOUR	24
RESEARCH & DEVELOPMENT.....	25
TRAINING AND INVESTMENT IN EDUCATION.....	26
THE BASE SKILL-SET REQUIRED BY TECHNOLOGY COMPANIES	27
SKILL-SETS OF THE AVAILABLE TECHNOLOGY LABOUR POOL.....	28
RESEARCH CONDUCTED IN SIMILAR COMMUNITIES.....	30
<i>Courtenay-Comox</i>	<i>30</i>
<i>Cowichan Valley</i>	<i>30</i>
<i>Nelson</i>	<i>31</i>
<i>East Kootenays –.....</i>	<i>31</i>
<i>Marketing the Technology Skills of the Region to the World.....</i>	<i>31</i>
<i>Williams Lake -.....</i>	<i>32</i>
<i>Bringing Technology Professionals Together With Business</i>	<i>32</i>
APPENDIX 1 - FACTORS CITED BY TECHNOLOGY WORKERS AS CHALLENGES IN FINDING EMPLOYMENT.....	34
APPENDIX 2 – SUPPORT AND ASSISTANCE REQUESTED BY TECHNOLOGY WORKERS.....	35

Executive Summary

In October 2001, Think Tank Communications was commissioned by the Salmon Arm Economic Development Corporation to conduct an assessment of the available technology labour pool in the Shuswap. The primary purpose of the research was to identify and make sense of the employment dynamics regarding the technology sector in the region.

The high tech sector that presently exists in the Shuswap Region is in an early stage of development. There are, however, several dynamic technology companies that are well established and highly recognized throughout the province. These companies have found it necessary to bring in highly skilled labour to the region over the years in order to meet their employment needs. There have been tangible economic benefits for the Shuswap as a result of this process. Several of the recently established technology companies were started by individuals who were at one point recruited by the larger firms and - for one reason or another - left their previous employer and subsequently decided to form their own company. The overwhelming response of these companies as to why they chose the Shuswap to establish their business was due to the fact that they had previous roots in the community and treasured the quality of life that the region offered.

In the course of the project, 35 companies that met the criteria of the study were identified, interviewed and queried as to their recruitment processes and employment needs. The majority of the companies interviewed expressed little or no concern regarding the difficulty of recruiting new employees, although they were required to look outside the region on occasion in order to successfully fill some of the more technologically advanced positions.

The project also identified and catalogued the skill-sets of 23 technology workers that were displaced, unemployed or underemployed. Individuals that move to the Shuswap will do almost anything to stay in the area, although limited employment opportunities in their field is a serious concern. Many of the workers interviewed expressed that the shortage of available work meant that they were actively searching for jobs in other communities.

It is the desire of the Salmon Arm Economic Development Corporation, and its economic partners, that this research be used as some of the core demographics of the area. This paper will provide an overview of the findings documented during this study. From these findings, the list of recommendations has been developed and will accompany this report.

Recommendations

These recommendations are written from the vantage point that rather than lose displaced technology workers to other sectors of the economy, or other geographical areas, there is work in the technology field for individuals that are able to assess market demand and navigate within it.

1. Form an Industry Association for Technology Professionals

It is important for individuals of like backgrounds to come together collectively for networking opportunities, to share information and to explore possible synergies. The region has such an organization in the Shuswap Construction Industry Professionals. It is the recommendation of the researchers of this project that the technology sector create a similar group within the community. This organization could model the British Columbia Interior Technology Association in Kamloops. This association has a paid membership that meets collectively through weekly and monthly activities. Many times in technology, companies work very independently and, as a result, rarely have the opportunity to come together to talk about issues relating to the industry.

It is our suggestion that the Economic Development Corporation, along with stakeholders in the community, form a temporary planning group to assist in this associations implementation. This organization would be membership driven and would form the following support system for its members:

- Provide opportunities for members to network with one another
- Act as a collective voice for technology in the region
- Bring in speakers, resources, and activities that benefit the membership as a whole
- Act as a middle ground for employers to find unemployed or underemployed individuals and use them as temporary labour
- Offer the membership the ability to work with one another on collective projects, or act as a sounding board for ideas
- Promote strategic alliances within the membership

We see the role of the Economic Development Corporation one of a very short time frame. It is important to bring community stakeholders into the activities at the beginning, but this association must be industry driven. Other organizations in the Interior have experienced damaging events by the public sector staying within the associations' management too long. As such, the

public sector should only lead this associations' direction until which time a board has been constructed and moves forward with their mandate.

What we must stress is that this association, although driven by the industry, should not be exclusive. If a member of the community wishes to join the association, they should not be prevented from doing so. Whether it is bankers, lawyers, those in professional service, or just an individual interested in technology, the membership should be open to everyone. Within the board, 75% should be represented by industry, representatives from the public service should occupy no more than two seats and those individuals should be considered ex-officio.

To further take advantage of the creation of this association, its board could explore the possibility of becoming regional members of the British Columbia Technology Industry Association (www.bctia.org), the Canadian Information Processing Society (www.cips.ca), and the Information Technology Association of Canada (www.itac.ca).

This association should be registered as a non-profit, file its constitution and by-laws with the provincial government and in turn begin looking for funding to promote its association and membership through an active marketing plan and the hiring of a facilitator/executive director, if only part time at first.

The association could seek out some free or inexpensive office space and look for donations to furnish it. The office could be the 'hub' of activities for the association and would include a resource library of information for current technology professionals, as well for individuals interested in gaining access into the field. In the beginning stage of this association's life, volunteers could take the place of a paid workforce. Students from the local high school are surely in need of volunteer hours. Working with the association would provide these hours, as well as offering those interested in pursuing a career in technology a valuable opportunity to network with potential employers.

This association could go one step further and create an online presence representing the technology sector in the Shuswap. Our recommendation is that a website be created that coincides with the Economic Development Corporations' attraction/retention/expansion initiative. This website would not only promote the existing industry located in the Shuswap, but would also offer a local 'flavour' to viewers considering a move to the region.

This would act as the association's directory until which time a hard copy (potentially in CD format) could be created. As well, we would assume this site to have 'hot links' to member pages, the Economic Development

Corporation's website as well as that of the district. The individual members' descriptions may be password protected to ensure management capabilities. Those wishing to see the profiles should either be a member, whom would have a password to enter, or an individual outside who requested a temporary password through registration. This way the association would be able to track interest electronically. We would hope that the Okanagan Science Council would take an active interest in this project, as it will not only promote overall technology development in the Okanagan corridor, but will become an association that may offer assistance to the Okanagan Science & Technology Council future events and strategic planning. We see the Okanagan Science Council promoting activities in the Shuswap such as a speakers series, corridor networking events that are periodically held in Salmon Arm, support for funding applications, inclusion in lobbying efforts, and an overall 'big brother' support position for the new association.

Action Plan

- ❑ Invite stakeholders to the table to begin the planning of the new association. A suggested list of attendees could include: representation from the Industry (large employer), representative from the Economic Development Corporation, representative from OUC/Educational Facility, a member of the Science Council, and an individual from a small technology company.
- ❑ Go through a strategic planning session to identify clear objectives to the first phase of the association.
- ❑ Invite additional stakeholders from industry to form an interim board for the association.
- ❑ The interim board creates a constitution, bylaws, and begins overseeing the legal development of the organization.
- ❑ The interim board makes an official call for memberships.
- ❑ An inaugural mixer is held for the membership. First AGM is called.
- ❑ AGM is held and interim board is replaced with the official board elected from the membership.
- ❑ Activities begin officially under the new board.

2. Educate Individuals on the Option of Self-Employment

From our research, we identified that many individuals who were underemployed or unemployed were not aware of the opportunities that self-employment provides. Many took on other jobs waiting for work in their field to become available, but this does not, in our opinion, constitute the necessary understanding of the basic business model. This research focused on technology workers in the Shuswap. These workers use the Internet for their work, but have not yet grasped the power that the Internet yields in remote work locations. Those that have small businesses rarely market outside of the local area and are, in turn, not tapping into 99.9% of their potential market. This recommendation is accompanied by three options that could be exercised depending on the needs and vision of the participants in this strategy.

Option 1. – Business Development Program

Recently, the Salmon Arm Economic Development Corporation developed and implemented the use of a Business Development Program in the community. This service allows would be entrepreneurs as well as those currently in business, to tap into a 'brain trust' of professionals under the direction of the Business Coach. For those that are not yet self-employed, the Business Development Program can be the gateway from which the individual can launch. This could be in the form of:

- Self financing
- A loan from a traditional banking facility
- The Self-employment Program at Community Futures.
- Other sources

Spreading the word about the Salmon Arm and area Business Development Program, whether through traditional marketing tools, or by use of free seminars, may assist individuals in the community debunk the myths around self-employment. The first part of this option is community education. This can be facilitated through the qualified board of the Salmon Arm and area Business Development Corporation and the Economic Development Corporation.

Option 2. – Private Capital

There are many individuals in the Shuswap that are financially successful and secure. These individuals may be interested in coming together and forming a type of business trust or venture capital pool. These individuals could form a corporation collectively and offer seed capital to start-ups and expanding businesses. This may be the step needed for an individual, or individuals to create a business plan that would attract this type of investment. There are incentives in place by the provincial government where investments can be sheltered under a self-directed RSP program. Capital is quite often the only obstacle in a business moving ahead. The investors could take an active role in the company either as a partner, or an advisor offering additional expertise.

Option 3. – Championship Group

Building on the option above, a collective of skilled business practitioners could come together in order to form a corporation. This corporation could offer services in exchange for percentages of companies. A collective professional coaching group comprising of a lawyer, an accountant, a manager, a Human Resources specialist, a sales professional, a public relations expert, etc. could be formed to act as a virtual incubator to the business. Many of the individuals displaced in the Shuswap are technicians, and would encounter considerable challenges outside their areas of expertise if they were to seek out self-employment. By forming this type of corporation, the entrepreneur benefits from knowledge of their 'board' and the board has the opportunity to invest time rather than money into a company.

3. Feasibility of Building Active Databases Of Employable Labour

Due to the relatively low number of high tech workers interviewed during the project, there are serious considerations concerning the feasibility of focusing exclusively on building a database of local employable labour at this time. The small sample of technology workers living in the region - and the fact that a relatively high proportion of these individuals (17.4%) have already left or are in the process of leaving due to a shortage of work - suggests that the formation of an active database would likely have a minimal effect on their ability to find employment.

This problem does not seem to be confined to the Shuswap. For example, *Okanagan High Tech Jobs* (www.okanaganhightechjobs.com), an initiative sponsored by the Okanagan High Tech community to help with the recruitment of staff, offers a resume depot for unemployed and displaced workers. The website also allows tech companies the opportunity to advertise potential positions online. Although there are approximately 270 high tech firms in the Okanagan, there are at the present time only 41 resumes of employment seekers online. Since September 2001, 6 different companies have advertised for 15 positions, 7 of which were for positions in sales, marketing and administration. In a recent survey of technology companies in the Okanagan, only 5.6% of respondents had used the Okanagan High Tech Jobs website to assist them in their recruitment.¹ The biggest stated challenge was that a lack of available resources has made the task of keeping the site up-to-date and relevant extremely difficult.

Rather than focus exclusively upon building such a database at the present time, it is the recommendation of the research team that such a resource be incorporated into the potential online presence of a local technology association as outlined in the previous section. Taking into account the challenges faced by *Okanagan High Tech Jobs*, such a database would have to be designed in a user-friendly manner as possible in order to make it quick and efficient for interested individuals to post their qualifications. Several of the unemployed workers interviewed during the course of this study indicated an interest in building such a database, and if some funding could be secured, the contract could be structured in such a way as to ensure that the developer either agrees to maintain the site for an extended period of time or will train volunteers on how to administer it. It is crucial that such a directory be designed in such a way as to make it easy to administer so that it is never dependent upon any one individual for its continued existence.

¹ Okanagan High Tech Study (May 2001)

Technology workers from within the region, as well as interested individuals living in other communities, would have the opportunity to build their own profile. We see this profile as being comprised of:

- Company they are working with (if applicable)
- Family, hobbies, interests
- Their individual expertise
- Their certifications, degrees, and other related training related to the technology field
- An online portfolio

4. Additional Support for Existing Businesses

Comments/Suggestions from High Tech Companies

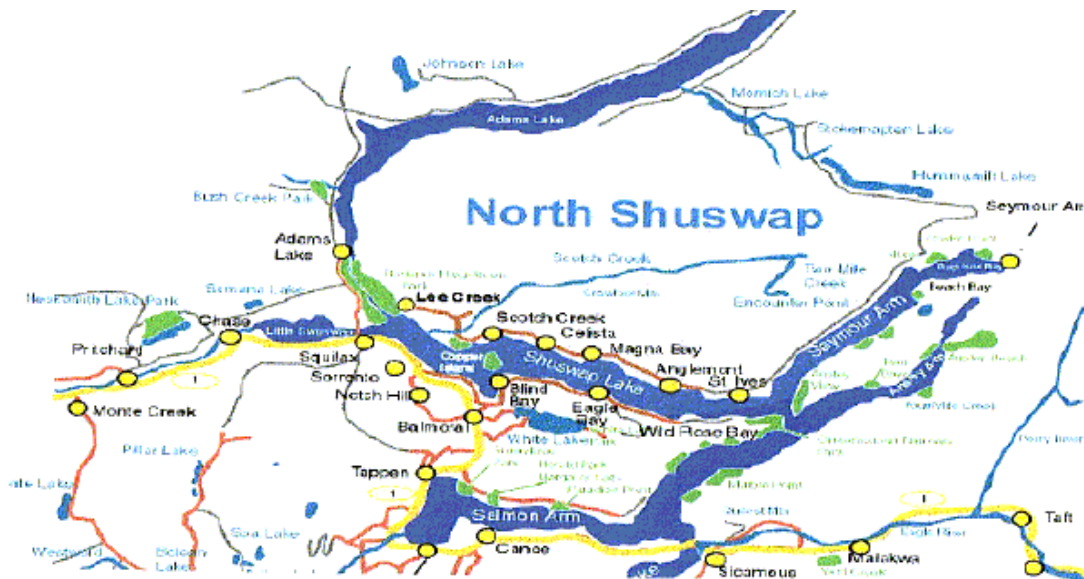
A representative of one of the area's successful technology firms reported that the ownership group is presently considering launching a new high tech start-up. As many BC communities are interested in attracting high tech companies, it was stated that the Shuswap must do more in terms of support. Ideas ranged from developing an attractive local business environment, making it easier for new companies to get established, and improved communication between industry and the public sector. For example, it was stated that few companies were aware of the 'Video Conferencing' technology that exists within the region and is available for their use.

Perspectives were also shared regarding the belief that the local government has not made an expansion of the technology sector in the Shuswap a priority. Rather, it is thought that the overriding focus continues to be on supporting and expanding secondary industries. Several company representatives expressed a concern that the Shuswap is not reaching its potential in terms of the establishment of a strong and vibrant high technology sector, pointing out that the infrastructure that already exists would be attractive for call-centers and data warehouses.

Companies in the 'Computer and Related Services' sector were frustrated with what they see as the loss of potential that results from many of the large companies in the region (banks, retail stores, large government agencies) having their servicing done by companies located outside of the region. This is seen to be a huge draining of potential and revenue that would otherwise stay in the region. It was suggested that agencies like the EDC could help by offering to develop a directory of service providers that meet a certain standard, are evaluated with regards to their price and service, and actively work to help local businesses obtain some of these contracts. A direct result of an initiative of this nature would be an increase in the number of local jobs. A focus on building the technology sector from within was seen to be the right approach for the community.

Overview

In October 2001, Think Tank Communications was commissioned by the Salmon Arm Economic Development Corporation to conduct an assessment of the technology labour pool that exists in the Shuswap. The primary purpose of the research was to identify and make sense of the employment dynamics regarding the technology sector in the region.



The objectives identified prior to this study commencing, and addressed in this research included the following:

- Identify the job classifications of high tech employees in the Shuswap
- Identify what the base skill set is of employees
- Identify and examine the inward and outward flow of technology workers
- Examine the amount of money spent on research and development as well as the investment in education
- Identify and provide information relating to various recruitment strategies that are utilized to attract and keep talented workers
- Determine the long-term value of the industry
- Identify and examine economic and employment trends
- Compare various factors to those found elsewhere in the province that have a similar economic makeup
- Qualify the size of industries including: size of companies, gross revenues, number of high tech companies per sub-sector and number of high tech companies overall

Methodology

Sampling Strategy

The research team began by compiling the database of high tech firms operating within the region from existing directories. This was followed by the implementation of two types of non-probability samples: the use of a *snowball sample*, and the use of *key informants*. Key informants, including representative of existing companies involved either directly in the high tech sector (as well as professionals that focus on the service of this sector) were identified within in the Shuswap region. To implement the snowball component of this sample, the research team asked the above-mentioned individuals, whom else they should talk to and were given the names of individuals and associations that had not previously been identified.

In order identify the relevant issues that lead to the completion and dissertation of the objectives, the research team approached the study through the following framework:

1. Cataloguing the relevant technology firms operating in the region and identifying their needs focusing on skill sets. Think Tank Communications identified, assessed and engaged in executive interviews with the relevant technology companies operating in the Shuswap. While most of these interviews were completed in person, at the specific request and individual preference of several companies, telephone interviews were also held to collect the necessary data.
2. Organizing a list of all the available skilled technology workers in the area. Technology workers that were unemployed or displaced, as well as those that work on a freelance basis, were identified utilizing local media (feature articles and classified ads), posters, word-of-mouth and referrals from workers that had been previously interviewed.
3. Conducting personal or telephone interviews with all of the related stakeholders of the project. This list included community support groups, educational institutions, members of regional technology associations and companies interested in providing services to the local technology sector.

Data Collection

The information in this study was collected in two main formats: primary data collection and secondary data collection.

Primary Data Collection

The primary data was collected by the research team and has provided the foundation for this study. The data collection included the conduction of executive interviews, observations and the recording of field notes.

The executive interview were targeted toward the individual in each firm that was identified as fulfilling the following requirements:

- Responsible for the hiring of new staff
- Has a willingness to provide detailed information, and
- Has been identified by others, either within the firm or from external sources, as being willing to participate in research components.

Executive Interviews

The executive interview was implemented in a 'loosely' structured format. Rather than focus strictly on a predetermined list of questions administered in sequential order, the research team prepared a list of questions, but allowed the respondent to set the tempo and direction of the questioning. In order to encourage the respondent's participation, the interviewer predominantly asked open-ended question. This left the respondent with considerable freedom to direct the discussion. Once the prepared questions were answered, the researcher allowed for clarification on the topics discussed and allowed the respondent to continue as long as they wished.

The Questions Administered During The Company Executive Interviews Surveyed The Following Topics:

1. Descriptions of products/services offered
2. Total number of employees, as well as per department
3. Recruitment procedures
4. The base skill-set required for the main jobs they offer
5. Transition of employees in and out of the company
6. Annual budget for training staff and types of training offered
7. Annual budget for Research and Development
8. Gross Revenues

The Questions Administered During The Executive Interviews With Technology Workers Surveyed The Following Topics:

1. Educational background
2. Skill-sets in regards to technology
3. Employment background
4. Periods of unemployment
5. How long they have been in the Shuswap and their reasons for staying
6. Whether or not they have considered self-employment, and what types of support they would like to start their business in the Shuswap
7. The largest factors influencing their challenges in finding gainful employment in their field
8. Types of activities and support that could be offered to them to assist them in finding a job that meets their needs

Field Notes

Field notes not directly related to the standardized measuring instruments yielded important information were used to give an additional perspective on the role of the existing technology sector operating in the region.

Secondary Data Collection

Secondary source of data were utilized to compare the primary data collected in the field with the data collected by other research groups. The secondary data was collected from several sources: government statistics, media coverage, business web sites, and previous research studies.

Reliability Of Findings

The nature of this study's approach has provided aggregate results based upon information collected from both high tech companies and unemployed/displaced technology workers in the Shuswap. The information contained within this report is put forth to provide a background for the recommendations and to provide a better understanding of the employment dynamics that exist in the region. All findings in this paper have gone through extensive gap analysis and examination to ensure that the recommendations are a fair representation of the current market.

Study Focus

Think Tank Communication focused its research on a high tech definition that was manageable and appropriate to the Shuswap region. As technology spans a variety of other industries, the scope of the project was defined through some basic assumptions. Companies and individuals had to meet these criteria in order to be considered to be "high tech" in the spectrum of the project. These assumptions are that the individual and company:

- Are involved in a sector where computers and related technologies are necessary in the conduction of work
- Are solely dependent on computers in order to do daily activities. To further qualify this point, they must not be able to operate with the use of a computer
- Has created something in relation to automation/programming/graphics or other related activities that is for use with some type of digital interface
- Has an Information Technology component to its enterprise or skill-set
- Has been involved with the transfer of information through a digital or analogue interface

Research Findings

Technology Companies In The Shuswap

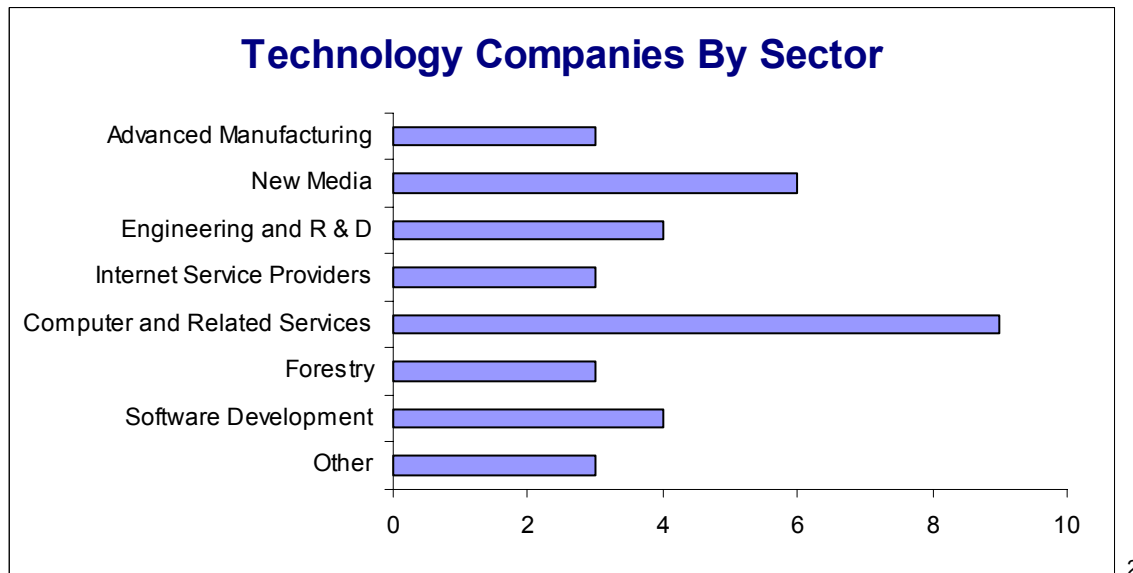
A total of 35 companies were interviewed during the course of this project, they included:

- Computer and Related Services (Network Design, Maintenance and Technical Support)
- Internet Service Providers
- Software Development
- New Media (Web Development, Graphic Design and Multimedia)
- Advanced Manufacturing
- Engineering
- Research and Development
- Forestry Management Consultants
- Drafting and Design
- Digital Mapping
- Printing Services

A total of 35 companies were interviewed during the course of this project.

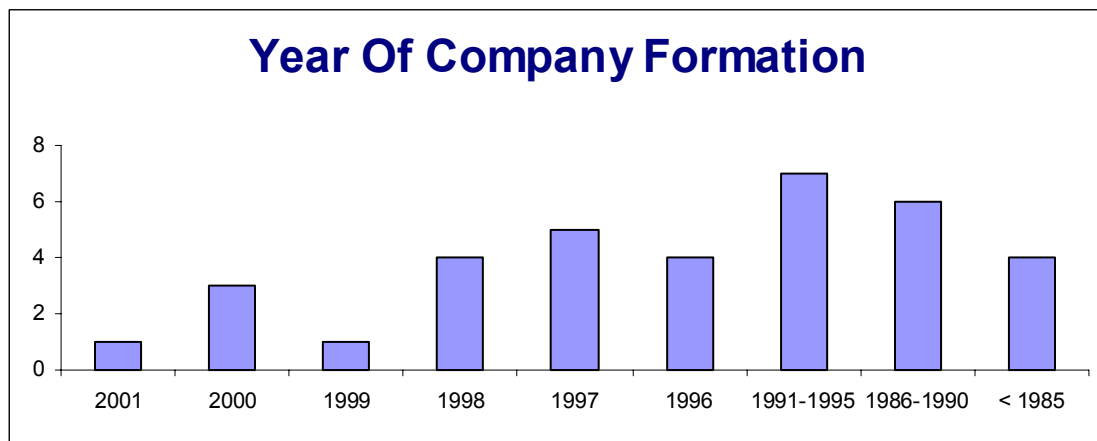
8 companies that were contacted did not wish to participate in the study.

16 companies listed in older directories were found to no longer be operating in the Shuswap Region.



² 14 potential companies that may have fallen within the scope of the project were contacted on repeated attempts without success. 38 companies that were contacted did not meet the criteria for inclusion in this study.

- Gross Revenues for the technology sector in the Shuswap was over **50 million** dollars for the fiscal year 2000.
- Of the 35 companies interviewed, 18 or more than one-half (51.4%) were formed between 1996 and 2001. 94.3% of the companies interviewed were originally established in the Shuswap Region.
- 33 of the 35 companies interviewed reported that the ownership group raised the initial investment needed for the establishment of the business, with occasional support from friends and families. The 2 remaining companies are publicly held.



Employment Dynamics and Job Classifications

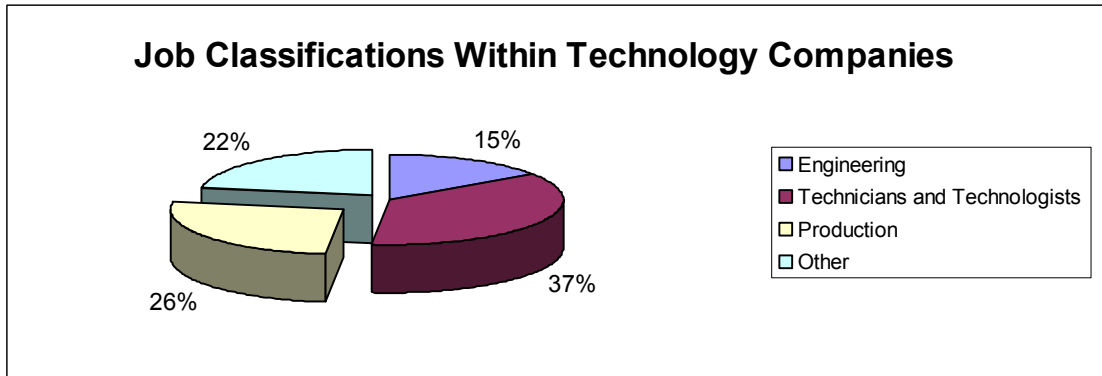
Of the 35 companies interviewed, 23 (65.7%) employed three or fewer employees. In total, the 35 companies interviewed employed 636 workers. Engineering and forestry resource management companies reported regularly hiring additional seasonal help.

Number of Employees	Number of Companies Responding	Percentage of Companies Responding
1-2	18	51.4
3-5	5	14.3
6-10	5	14.3
11-15	0	0
16-20	2	5.7
21-50	1	2.9
51-100	3	8.5
More than 100	1	2.9
Total	35	100

The Importance of ‘Low Tech’ Workers within High Tech Industry

Employment classified as ‘*production*’ comprises 26% of the total number of occupations in the Shuswap high tech sector – even though they are not considered to be ‘high tech’ jobs. This can be explained by the fact that high tech manufacturing companies require a large number of individuals with skill-sets related to trades and traditional manufacturing.

Taking into consideration that an additional 23% of all jobs (classified as ‘*other*’) are related to management, administration, clerical support and customer service, these findings are consistent with other studies that show that just over 50 per cent of employment in the high tech sector involves high tech occupations.³

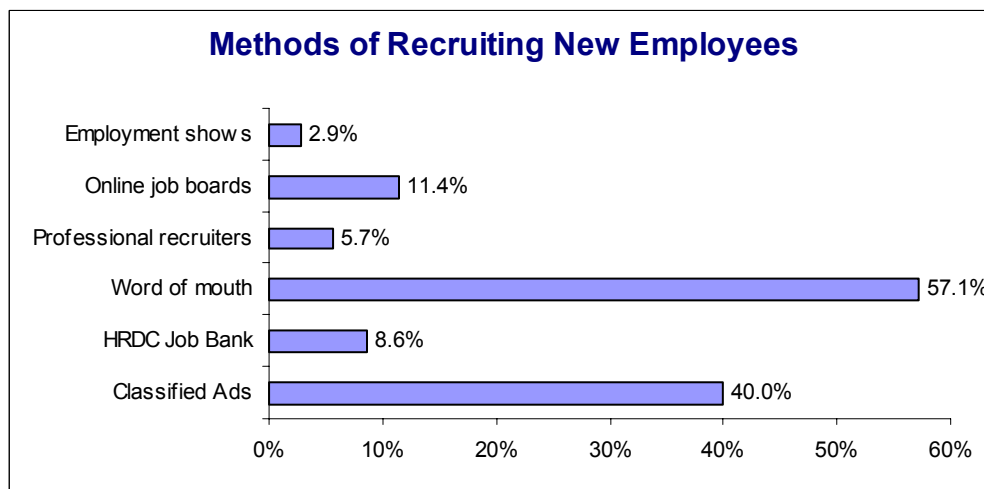


Job Classifications Within Technology Companies	
<p>Technologists and Technicians: (240 employees)</p> <ul style="list-style-type: none"> Software Developers, Web Developers, Programmers, Electronics, Graphic Artists/Multimedia Developers, Mapping/Photogrammetrists, Technical Writers, Service Technicians, Network/Systems Analysts, Drafting and Design, Environmental Science, Geomatics, Forestry Services 	<p>Production: (164 employees)</p> <ul style="list-style-type: none"> Welders, Machinists, Steel Fabricators, Assemblers, Labourers, Finish Carpenters, Wood Workers, Trades People
<p>Engineering: (88 employees)</p> <ul style="list-style-type: none"> Mechanical, Electrical, Software, PLC Control, Optimization 	<p>Other: (144 employees)</p> <ul style="list-style-type: none"> Administration/Clerical, Customer Support, Sales/Marketing, Management

³ BC STATS Business Indicators (August 1999)

Methods of Recruitment and Related Observations

The majority of companies interviewed stated that they encounter minimal difficulties when recruiting additional labour. However, the larger and most technologically advanced companies do at times experience problems when recruiting for specialized positions. None of the companies experienced a shortage of potential employees for jobs relating to administration, clerical and customer service. Advertising for these openings regularly garnered 50-100 applicants. The general consensus was that the local campus of the Okanagan University College and other training providers provided a steady pool of talented individuals for these positions.



Of the 35 companies interviewed, 10 (28.6%) relied on contract workers to fill the temporary needs of their company. This was most evident in small-scale graphic design and multimedia production companies that depend upon specialized labour in order to complete a particular project. In order to fill these positions, companies overwhelmingly relied on word-of-mouth advertising. Several companies also reported having partnered with each other on projects that they were unable to carry out themselves, thereby saving them the time consuming process of bringing in part-time help or contract workers all together.

All of the companies interviewed expressed their desire to hire people who have roots in the Shuswap and are likely to stay. As expected, all companies were very selective regarding the people they bring into their company. The appropriate skill-set, a positive attitude, real-world skills, common sense and the ability to respond quickly to a rapidly changing environment were cited by companies as the most important qualities they seek in prospective employees.

Surprisingly, companies involved in the 'Computer and Related Services' sector consistently stated that prospective employees who are able to prove hands-on-skill, a thorough understanding of computers and operating systems, and the ability to troubleshoot and reason logically are more valuable than individuals that have had only formal training. While employers stated that technical diplomas and certifications are important, they are not necessarily a prerequisite for employment. The majority of these companies were willing to bring in individuals at an entry-level position if they had the right attitude and technical ability.

Several of these same companies expressed a concern with what they see as the 'current fervour' of re-training unemployed and displaced individuals for careers in information technology. One company representative suggested that agencies exercise more caution when screening candidates for training:

“Although many individuals displaced from traditional industries are eager to be re-trained (and may eventually be certified) that is not the same as saying that they will be truly qualified. Aptitudes and expectations should be thoroughly examined beforehand. The consequence of not doing so is that expectations are often later shattered, with many of these individuals eventually returning to occupations outside of the technology industry.

Technology Company Representative

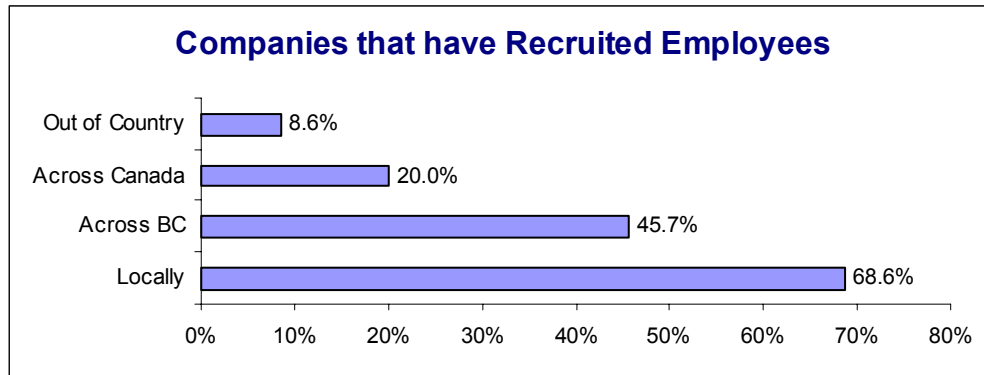
Technology companies that hire customer service representatives are seeking passionate computer hobbyists that have excellent customer service skills, and high levels of passion and integrity. Individuals with in-depth computer knowledge, technical ability, a willingness to learn and an exceptional ability to interact with the public are what these employers seek in a potential employee. A common observation that was noted was the belief that educational institutions do not give these 'soft skills' enough weight in their training programs.

All companies that recruit from outside of the region stated that they promote the Shuswap's quality of life and cost of living, as well as the future career opportunities that exist within the company. Many reported that they consistently receive a substantial amount of unsolicited resumes, particularly those who have a web presence, from individuals wishing to move to and live in the region.

Inward And Outward Flow Of Technology Workers

Of the 35 companies interviewed:

- 16 (45.7%) have recruited from across British Columbia
- 7 (20.0%) have recruited from across Canada
- 3 (8.6%) have recruited from outside of the country



Coop Students

Of the 35 companies interviewed, 7 (20%) regularly bring in co-op students from post-secondary institutions including the University College of the Cariboo, Okanagan University College, Camosun College, the University of Victoria, Simon Fraser University and the University of British Columbia.

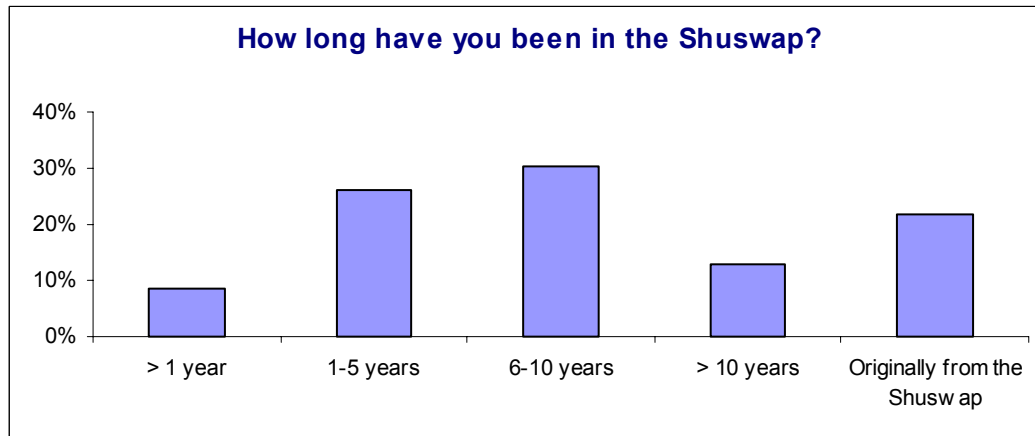
Hiring students for a 4 or 8-month co-op term provides the firm with additional labour to assist on the workload, as well as an opportunity to assess the

One of the largest technology firms in the Shuswap depends primarily on coop students to fill positions, working closely with educational institutions to ensure that graduates will have the necessary skill-sets.

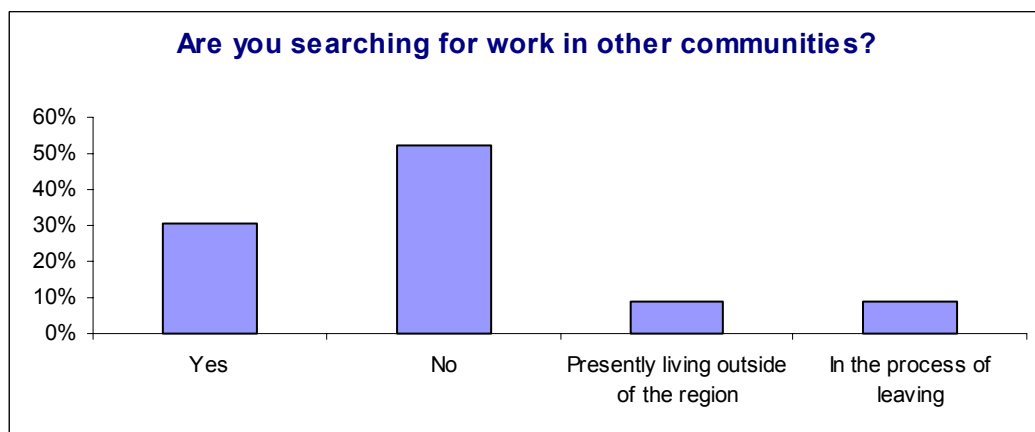
quality of potential employees. Once they complete their studies, those that are frequently offered full time employment if the company is hiring. As such, they represent one of the influxes of high tech labour to the region. While companies were generally happy with the quality of coop students that they have used in the past, it was stated that one of the drawbacks of using coop students is that post-secondary

institutions tend to oversell the value of their skills and education – leaving the company with the task of managing unrealistic expectations.

Of the 23 technology workers interviewed during the course of this study, 7 (30.4%) originally moved to the Shuswap in order to work for technology companies operating in the region. Quality of life and family commitments were cited as the primary consideration for remaining in the region once having left these companies.



Of the 23 technology workers interviewed, 2 (8.7%) were presently living in other communities but were hoping to return to the Shuswap, while 2 (8.7%) were in the process of leaving the region and 7 (30.4%) were exploring employment opportunities in other regions.



Individuals originally from the Shuswap have a strong desire to return to the region to live and work. Of the 23 high tech workers interviewed, 2 indicated that they would like to be listed in an online database of high tech labour although they were presently living and working in other parts of the province. The majority of the 35 companies interviewed reported receiving unsolicited resumes from individuals living in other regions seeking to move to the Shuswap.

In the course of interviewing unemployed and displaced technology workers presently living within the region (especially homeowners and those with 'roots' in the region), it was clear that many are willing to make sacrifices in order to stay and often attempt to secure employment in other fields while doing contract or freelance work when the opportunity arises.

“It seems very difficult for people that do graphic design work to find full-time employment in this area, therefore most of the people I know work at several part time jobs or like myself have a part time job for a company plus do work from my home”

Underemployed Graphic Artist

Reasons High Tech Employees Leave the Shuswap

Representatives from larger technology companies speak of an expected 3-4 year turnover for employees who join the company out of university. It was noted that younger talent often cite the lack of a cosmopolitan nature in the Shuswap as the reason for leaving the area.

Several companies reported that they have had employees leave for urban centers because wage levels are higher than what can be offered in the Shuswap. Pay scales are a factor insofar as these companies state that they are unable to offer the same remuneration packages as companies located in the lower mainland or in other Canadian cities.

The consensus among technology company representatives was that the majority of highly skilled technology workers originally brought into the region when companies were recruiting, often left the Shuswap to pursue other career opportunities if the company relocated, laid-off or restructured.

It should be noted that although there have been significant layoffs in high tech manufacturing and forestry services during the past year, many of these individuals did not have high-tech skill-sets (machinists, administration staff, labourers, fabricators) and would therefore not have fit into the scope of this project.

Challenges Encountered When Recruiting Additional Labour

The majority of the companies interviewed reported that they encounter minimal difficulties when recruiting additional labour. However, some of the companies that depend upon specialized technical labour (7 of the 35 companies interviewed or 20%) do at times experience problems when recruiting for these positions. A serious concern was expressed regarding the effort, time and cost involved when it was necessary to bring in additional workers from outside the region.

Some of the positions that were found difficult to fill included those requiring a solid foundation in electronics, Real Time Control Software and AutoCAD. Engineers, Programmers, Database Developers and experienced Technical Writers were also difficult to recruit for from within the region. This had the potential to occasionally slow the pace of production and output. Most employers cited the lack of opportunity and the absence of the necessary educational institutions located within the region.

The following observations were derived from interviews with some of the areas largest technology employers.

- The absence of a large and established technology sector in the Shuswap was stated to be a major challenge for companies when recruiting new talent from outside of the region. An important consideration for potential candidates, especially those with young families, when deciding whether or not to move to the region is what they perceive as limited opportunities – within both the technology sector and other traditional industries – in the possible event of lay-offs, restructuring or if things just do not work out as planned.
- The lack of opportunity that exists for spousal employment is a further obstacle for larger companies that look outside of the region to fill their needs. There are limited career opportunities for spouses within both the technology sector as well as other industries in the Shuswap. This remains a problem in the central Okanagan - where there is a much larger and highly developed technology industry. An additional concern raised by companies when attempting to recruit individuals with young families to the region is the quality of public education available in smaller communities in the Shuswap.

- Speaking from their experience, some employers expressed that the quality of life in Salmon Arm, while important and an important selling feature, tends to be overstated. It was pointed out that this is especially evident when taking into consideration that places like North Vancouver offer many of the same 'outdoors' qualities that might otherwise make the Shuswap an especially attractive place for individuals considering 'quality of life' factors in their decision.

“These are some of the challenges that you deal with when operating a business dependant upon specialized labour in a small community.”

Technology Company Representative

Research & Development

The absence of research facilities and a strong university presence in the Shuswap region limits the Research & Development (R&D) that is possible in a larger urban center. As a result, the companies that do conduct research and development do so in-house. The difficulty of raising additional funds from private financial institutions for expansion and development was a common problem. Companies were resigned to the fact that they had to raise their own capital if they wished to expand their facilities and develop new products.

- Of the 35 companies interviewed, 7 (20%) had a budget devoted to Research and Development, with the total spent being over \$1.5 million dollars. Although 7 additional firms did not have an R&D budget established, they did invest a significant amount of money depending on factors such as pending contracts and the general state of the forestry industry. That being the case, the actual amount spent by local companies on R&D is significantly higher than \$1.5 million. All of the companies conducted their R&D in-house without the support or partnership with universities or technology incubators.
- Smaller innovative companies noted the high risk in developing new technology products. Examples were provided regarding the cost of building a prototype and getting a new product certified (\$100,000), and the investment needed to finance and bring a new product to market (\$1.5 million) - which was seen to have a 1 in 5 chance of being successful.

Training and Investment in Education

Of the 35 companies interviewed, 5 (14.3%) had a regular budget for training staff and 12 (34.3%) reported that they regularly sent employees outside of the region in order to get additional training and upgrading that included professional and personal development programs. Most of the training took place in the lower mainland due to a lack of suitable training programs available locally.

All companies reported that the bulk of their training occurs on a day-to-day basis. Employees are cross-trained extensively in different departments and, when possible, senior and junior employees are teamed up with the subsequent passing of knowledge and skills. Several companies depend upon industry associations of which they are members for their training needs. It is common for company to pay bonuses once employees reach a new level of expertise or else pay for the cost of certification. A culture of continued learning was prevalent with employees being often encouraged to apprentice, upgrade or further their education.

The majority of the companies that work in multimedia and graphic design expressed a concern as to the lack of courses/workshops regarding the most recent software applications being offered in the Shuswap, and that they are frequently not aware of available training in the Local Interior. These businesses stated it is not practical to travel to Vancouver or Calgary for training and they would like to see more courses, workshops and seminars offered within the region.

Representatives from the training facilities that exist within the region, such as The Salmon Arm Campus of the Okanagan University College and the Salmon Arm and Sicamous Career Community Centres, have indicated a strong willingness to work together with the technology sector to offer training programs suited to industry. The availability of one-two day workshops on new applications and technology, particularly in graphic design and multimedia production, is highly desired by local companies.

Examples of cooperation between educational institutions and local industry already exist. One of the largest employers in the area has partnered with the Salmon Arm Campus of the Okanagan University College to offer introductory training in Programmable Logic Controls (PLC's). PLC's are used extensively in plant automation and robotics. The program is in its third year, and students, which include staff from other local companies, receive a Programmable Logic Controls Certificate upon successful completion.

The Base Skill-Set Required By Technology Companies

The companies that participated in this project were invited to share the base skill- set that is required for most positions in their companies. Most of the skills-sets required for the most demanding positions are not provided for within the region itself. As a result, many of these individuals are brought in from outside the region. This is one of the major challenges that the Shuswap has in terms of producing its own local talent. The most common skill-sets required by the local technology companies include:

Common Skill-Sets Required by Technology Companies	
Web Development	<ul style="list-style-type: none"> ▪ Ability to program in various languages (PHP, ASP, HTML, XML, SQL, Java, dynamic HTML) ▪ Experience using technologies such as Flash/Director, as well as 3D rendering software ▪ A keen eye for detail and the ability to design creatively
Programming	<ul style="list-style-type: none"> ▪ C++, Cobalt, VB, Oracle, Database Structures, SQL, XML, HTML
Graphic Design	<ul style="list-style-type: none"> ▪ Knowledge of professional software programs (Illustrator, PhotoShop, Corel, Quark, Page Maker) ▪ Experience/portfolio, technical diploma or post-secondary education desired
Software Engineers/Optimization	<ul style="list-style-type: none"> ▪ Bachelor of Computer Science ▪ Two-year diploma ▪ Relevant industry experience
Mechanical Engineer	<ul style="list-style-type: none"> ▪ Either a 5 year degree in Mechanical Engineering or a 2 year diploma, relevant and practical hands -on experience
Controls: Allen-Bradley PLC	<ul style="list-style-type: none"> ▪ Exposure to some sort of process; open and closing, sequences
Technical Writers	<ul style="list-style-type: none"> ▪ Post-secondary education ▪ Experience with the production of technical documentation as part of the developmental process
Electronics Specialists	<ul style="list-style-type: none"> ▪ Technical Diploma with 3-4 years of experience or a degree in Electrical Engineering and 2-3 years of experience
Individuals that have an 'Engineering 'Capability'	<ul style="list-style-type: none"> ▪ Including a strong knowledge of drafting and design ▪ AutoCAD; Solid Works
Service Technicians Systems Analysts	<ul style="list-style-type: none"> ▪ Relevant training; Industry Certification (MCSE, A+) ▪ Capable of building system tests, knowledge of power fundamentals, diagnostics, situational analysis
Geographic Information Management Forestry Technicians	<ul style="list-style-type: none"> ▪ Bachelor of Science or Technical Diploma/Certificate ▪ Experience in Land Information Management ▪ Training in GIS Applications

Skill-Sets of the Available Technology Labour Pool

A total of 23 individuals were interviewed in this study. A further seven expressed an interest in the project but were unable to arrange for the time to discuss their experiences. The technology workers interviewed included individuals that have the following skill-sets:

▪ Programmers	▪ Web Developers
▪ Network/Systems Analysts	▪ Project Managers
▪ Web Developers	▪ Software Engineers
▪ Graphic Artists	▪ Database Developers
▪ Electronics Technologists	▪ Trainers

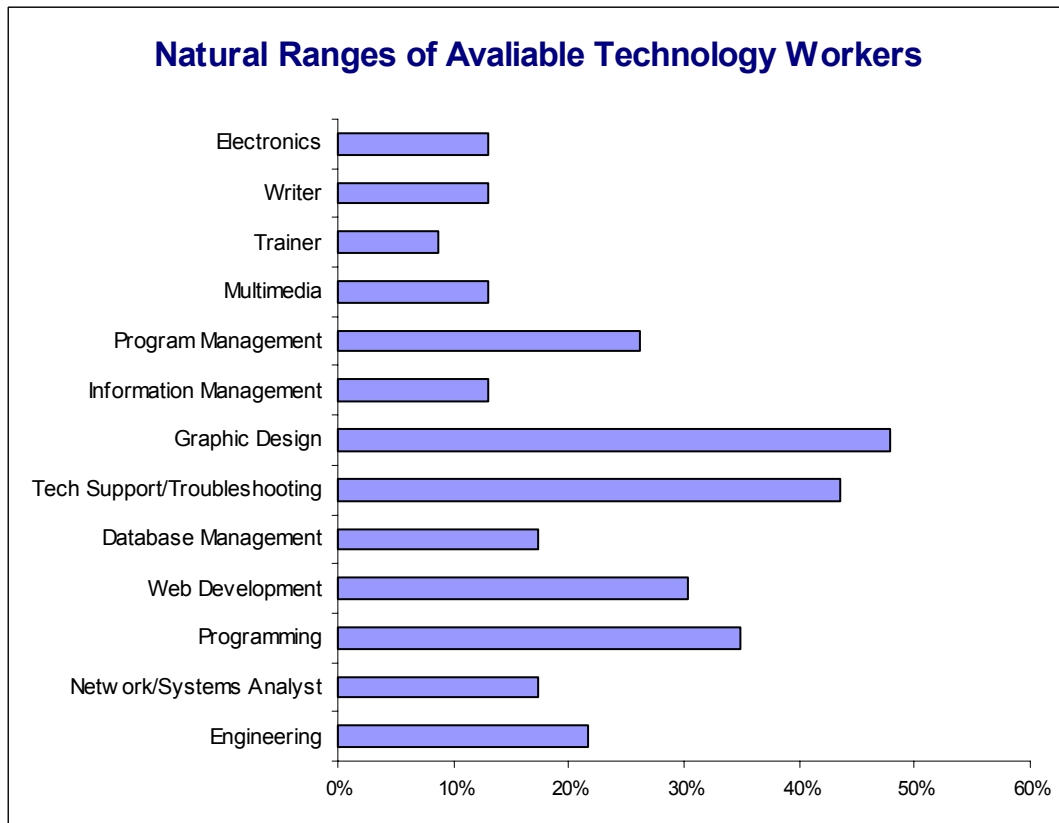
While surprised at the low response received from potential technology workers living in the Shuswap, some of the larger technology companies stated that they did not believe that there were a large amount of technology workers living in the area. The consensus was that individuals with highly developed technology skill-sets left the region for reasons including lay-offs, company relocation and better career opportunity/remuneration available in urban centers.

“I do not think there are a substantial number of hi-tech unemployed people in the region. The number of technology people displaced by the downturn in the sawmill industry, particularly engineering and manufacturing personnel is six and each person is active in their job search. In all likelihood they should locate employment before February.”

Technology Company Representative

Of the 23 technology workers interviewed, 16 (69.6%) worked on a contract or free-lance basis, with many of these workers depending on additional part-time jobs to support their livelihood. All of these individuals were interested in the establishment of a forum or association that could be used to highlight and market their skills locally and, to a lesser extent, outside the region. The development of a local directory of talent that was made available to non-tech companies looking to implement technology students within their own business was seen to be a valuable resource.

Individuals with skill sets relating to Graphic Design and multimedia production made up the largest number of interviewed workers. The majority of workers had skill-sets in a variety of fields. The natural ranges of these workers are illustrated below.



Research Conducted in Similar Communities

The communities that were chosen for the comparative analysis portion of the project included: Nelson, Cranbrook, Courtenay, Cowichan and Williams Lake. As well as having a similar economic make-up as the Shuswap Region, several of these communities were selected because they have demonstrated a desire to diversify their economic base by establishing and supporting a local high tech sector. At the same time, they are seeking to position themselves as attractive locations for prospective technology companies that are presently operating in other regions.

Preliminary research within these communities indicated that no previous studies have been undertaken with regards to the employment dynamics that exist within their respective technology sectors. The consensus, however, was that existing technology companies were relatively small and therefore experienced limited challenges when recruiting additional labour.

Courtenay-Comox

The community of Courtenay-Comox may serve as a model for the Shuswap in the initial stages of expanding its local high tech sector. While Courtenay-Comox considers itself to be the new kid on the block with regards to the establishment of a vibrant high tech community, meetings with stakeholders from the region through various 'High Tech Seminars' have been taking place for several years. A subsequent development of these seminars was the establishment of a privately funded business incubator that offers reduced rent and fibre optic connectivity to small technology start-ups. At the present time, all 14 offices in the incubation centre are occupied and there have been frequent inquiries by other interested individuals and companies. Overall, there are approximately 20 small high tech companies operating within the region, consisting primarily of a local Internet Service Provider, a handful of web development and new media companies. The interest in the incubation programs increased dramatically once the region had the funding and infrastructure in place.

Cowichan Valley

Representatives from the Cowichan Valley Economic Development Commission state that they are in the midst of developing a high tech strategy for the region. Situated between Victoria and Nanaimo, the Cowichan has had tremendous support and access to the resources of the Mid-Island Science and Technology Centre (MISTIC) and the Vancouver Island Advanced Technology Centre (VIATeC). The Economic Development Commission is in the process of creating networking opportunities in the high

tech sector to promote professionalism and encourage consumer awareness about this sector.

Nelson

The city of Nelson is aggressively seeking to expand the technology sector in the region. Since 1987, Nelson has been the home to Pacific Insight Electronics, a large manufacturer of electronic products and wiring harnesses designed for the automotive and marine industries. It is hoped that the success and continued presence of the company and its 230 employees will serve as an anchor for the community as they attempt to establish a strong and vibrant technology sector.

Representatives from Nelson feel that the city's quality of life factor will be among its most valuable assets in attracting both high tech companies and workers to the region. Companies report having recently received numerous requests for employment from high-tech employees living in urban centers. In one case, an employee new to the Nelson area gladly sacrificed a 33% reduction in salary as a trade-off for what he saw as an improvement in the quality of life available in a smaller community.

Williams Lake and the East Kootenay Region are in the process of undertaking strategic initiatives to improve the ability of individuals with technology skill-sets to find meaningful employment, while at the same improving the internal operations and technological efficiency of local businesses. The following highlights some of the innovative approaches being undertaken in these communities:

East Kootenays – Marketing the Technology Skills of the Region to the World

The New Media Marketing Group (NMMG) is a partnership of new media professionals preparing to do business in the East Kootenay region of British Columbia. It is an initiative spearheaded by the Rocky Mountain Innovation Centre – a regional incubator that provides support services and space to start-up innovative or high tech businesses in order to enable them to become viable enterprises within the local economy.

The goal of the New Media Marketing Group is to identify individuals and companies that are interested in sharing their technical skills and resources. By working cooperatively, the NMMG is striving to produce high-quality products on a partnership basis while still maintaining their individual identities and businesses. As a team, they hope to be able to provide a level of service that they cannot provide as individuals.

This strategic initiative involves the hiring of a marketer whose job will be to find contracts and manage the workload. The mandate of the NMMG will be to search out contracts from anywhere in the world that can be fulfilled by one or a group of its partners. In this way, the high tech skills available in the East Kootenays will be marketed to areas outside of the region. It is hoped that this will enhance these individuals' ability to find employment and help ensure that they remain within the community. Once having obtained a contract, NMMG plans to oversee its completion and take a percentage of the contract value in order to cover its expenses.

It is believed that this innovative approach will save those involved in New Media the time consuming task of writing proposals and searching for new contracts, thereby providing them with the opportunity to focus exclusively on their creative work. There are currently 12 individuals in the East Kootenay region in the process of issuing shares and becoming a for-profit business competing in the world marketplace, using digital media to provide services to clients wherever they may be located. This group consists of both small companies and freelance workers with technology skill sets that live in the region.

Members of the NMMG include web designers, web developers, programmers, database developers, video and sound producers, writers and graphic artists – which represent the majority of the technology workers living in the Shuswap region that were interviewed in the course of this study. Due to the ease of conducting business at any location, particularly work relating to New Media, there is no reason why such an initiative could not be successful in the Shuswap. The Salmon Arm Economic Development Corporation and its partners may wish to explore the feasibility of establishing a similar initiative in the Shuswap.

Williams Lake - Bringing Technology Professionals Together With Business

The overwhelming response of the unemployed, underemployed and displaced technology workers interviewed during in the course of this study was the need to develop innovative ways to market their technical skills to local industry. The majority of the workers interviewed stated that they believe that companies in the Shuswap have not embraced technology because they are not fully aware of how it can improve their business. These workers would like to see more local companies made aware of the advantages of implementing technology solutions.

Similar initiatives are underway in other communities across the province. Within the Cariboo Region, the Economic Development Corporation of Williams Lake has facilitated what is known as the “E-Biz Strategy” - an initiative designed to educate local industry as to the advantages of implementing technology solutions. Interested businesses are offered a diagnostic assessment of their resources and made aware as to the ways in which technology could benefit their operations. As a result, they are able to make an informed decision as to their particular needs, while at the same time being introduced to the high tech companies and individuals in the area that offer technology solutions. Into its eight-month, over 60 local businesses have participated and expressed an interest in exploring new technologies.

Of the 23 technology workers interviewed during the course of this study, 15 (65.2%) had skill-sets in the areas of web development, graphic design, multimedia, and database development. Research conducted as part of the Salmon Arm Business Expansion and Retention Program (BEaR) found that 41% of the 250 businesses interviewed expressed an interest about learning more about the Internet and how to set up or more effectively use a website.⁴ It would seem that these individuals have the potential to help local businesses use existing technologies to improve their efficiency and marketing capabilities, while at the same time generating additional employment opportunities for themselves.

⁴ Salmon Arm Business Expansion and Retention Program “BEaR” (December 2000)

Appendix 1 - Factors cited by technology workers as challenges in finding employment

- Companies are not aware of the advantages of implementing technology solutions and being online
- No real high tech industry in the region
- There is confusion of where to find technology workers - a lack of coordination and centralization
- There are few career opportunities in the region
- Not familiar enough with the area to know where to look for prospective companies
- Everyone is laying off – companies are not hiring
- Employers need to be willing to value the services they expect
- Age discrimination
- Mobility – jobs requiring your expertise might not be available in a smaller community
- Companies don't consider me after seeing my resume because they conclude that they probably won't be able to afford my services – an overqualified stigma
- Salmon Arm looks after its own first
- The general state of the economy
- Lack of good-paying jobs
- A general absence of education within the community in terms of being familiar with technology, its uses and possibilities
- Difficult to find a company that will hire people of school (one year experience at the minimum seems to be the requirement)
- Lots of competition, hard for larger companies to compete with consultants and individuals working from their home as they have lower overhead and more flexibility when bidding on contracts

Appendix 2 – Support and assistance requested by technology workers

- A job bank for free-lance workers
- Someone to handle financing and sales
- How to write a business plan and conduct market research
- To make companies aware of the technology and the ways it can be used to help their business
- A database of people with technology skills
- Technology recruiting events
- The biggest challenge for our (start-up) company was the fact that all of the partners were programmers and software developers - nobody had the necessary business skills and aptitudes
- Money
- A venue to showcase the talents of local tech workers and how they can help companies with their day-to-day business needs
- Education of the general business community as to the advantages and possibilities of using technology - technology has a bad reputation and this stigma must be overcome
- More support for local contractors; helping market my skills to companies that may need my services outside of the region.
- Investment
- I would have to find someone who would deal with the day-to-day running of the business, sales, marketing, finance and accounting so I could focus on doing what I do best
- A way to meet people working in technology, owners, managers, entrepreneurs, other workers
- An up-to-date directory of all companies in the region and information about what they do and the types of employees they hire