

Wireless Technician

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1. Introduction

According to Industry Canada, wireless is “a wide range of mobile communication technologies that use radio frequencies to transmit voice, data, and video that would otherwise be transmitted through the wired infrastructure of telephone or cable networks.” By bringing together the Internet and mobile telecommunications, new forms of Web-enabled wireless devices are becoming or soon will become publicly available.

In “Unplugged”, a *Toronto Globe and Mail* article of March 31, 2000, pilot projects being undertaken in Europe were described in which “shoppers use handheld organizers to scan the bar codes on items they pick from grocery store shelves and pay electronically without unloading their carts at the check-out counter. As well, vending machines are being equipped with technology that makes it possible for people to use their cellphones to buy pop and pay for it on their phone bill.”

What makes all this possible is a new technology standard where phones can communicate wirelessly with laptops, handheld computers, vending machines or point-of-sale devices in stores. It may be used in future to transmit electronic cash from one phone to another so that people could transact complex e-mail commerce deals anywhere and at anytime. Mobile phone manufacturers expect that almost all new phones will soon be able to ‘surf the net’.

On Thursday, May 18, 2000, Telus Mobility became the first communications company in Western Canada to announce a commercial suite of digital wire-to-Web services. According to the *Edmonton Journal*, the new data service program called I-Web “is a two-pronged initiative – a ‘microbrowser’ system that connects digital wireless phones to two major Internet portal services, plus a digital wireless dial up service for mobile computer users, who’ll be able to use their wireless phones as modems to surf the Internet or their corporate intranet, and send and receive e-mail and fax messages.” (*Edmonton Journal*, May 19, 2000)

Research suggests that Canadians are very open to adopting new wireless technologies. Currently, 13.3 percent of Canadian households have prepaid wireless service, more than double the U.S. rate of 6 percent. It is projected that the number of mobile phone subscribers in Canada will increase from seven million in 2000 to 16.6 million by the end of 2003.

According to a recent industry profile on telecommunications, Alberta has the highest number of households in Canada with wireless and Internet access. Fifty-one percent of Alberta households have cellular phones and 45 percent have Internet access.

2. Description of the Wireless Technician Field

There is no formal occupation related specifically to wireless technology. The closest occupation designation is what HRDC collectively calls “Electrical Trades and Telecommunication”. This designation draws together a range of different sub-occupations, including power system electricians, telecommunications line and cable workers, telecommunication installation and repair workers, cable television service and maintenance technicians, and electrical power line and cable workers.

Companies may use wireless technician as a job title. A related title “wireless developer” was recently advertised by Mastech Canada, an Ottawa based information technology company. The firm was seeking several wireless developers to join their firm and work on the design and development of the next generation of wireless products.

Telecommunications technology (also known as telecommunications engineering technology) is the educational program that encompasses the study of wireless communications. It also includes course work in data communications, networking, transmission and processing of data and video signals, and fibre optics and cable management.

Graduates from telecommunications technology programs are employed with utility companies, telephone service providers, equipment manufacturing, and sales and service. They work as telecom technicians/technologists, production test technologists, cable technicians, and communication wiring installers.

3. Entry Level Qualifications and Alberta Educational Programs in Telecommunications Technologies

Most telecommunication employers require a vocational institute or community college diploma. Nortel Networks offers wireless courses in Richardson, Texas. However, these courses can only be accessed by those who have been hired by Nortel Networks.

There are two telecommunications technology programs in Alberta that offer wireless technology training. They are SAIT’s Telecommunications Technology Diploma Program and NAIT’s Telecommunications Engineering Technology Program. According to an industry expert with a good knowledge of the SAIT Telecommunications Technology Diploma Program, “the telecommunications graduates coming out of SAIT are very good quality technicians. The problem is that there are not nearly enough program graduates.”(Babione)

Both the NAIT and SAIT programs are two-year diploma programs, although the SAIT program is a second year program of study after students complete the Electronics Technician certificate in their first year. Through both programs, students receive the theoretical and practical knowledge needed to operate in the telecommunications field working in operations, maintenance, and installations.

A 1996 study of the Canadian Telecommunications Industry by KPMG Consulting with Pacific Leadership Inc., Tech Team and Abt Associations found that the supply of qualified graduates of telecommunications programs falls short of industry expectations. It also discovered that education systems are improving with regard to the delivery of such programs but they are not meeting the full needs of industry.

4. Current and Future Employment Demands and Opportunities for Telecommunication Technology Graduates

A 1998 survey of 32 SAIT graduates from the Telecommunications Technology Program shows that graduates enjoyed a 96 percent employment rate. All those employed were working in a field related to their telecommunication technology training. Their salary range was between \$22,500 and \$41,000, with a median annual salary of \$31,700. The vast majority of these graduates were employed in the Calgary area.

A recent survey of 46 NAIT Telecommunications Engineering Technology graduates from 1999 found that 91 percent were employed and earning monthly salaries of between \$2,500 to \$2,900.

Future employment opportunities in Alberta are bright for graduates of these programs. There are several major companies located in Alberta which are involved directly in wireless development. These include:

- **Telus Corporation.** Canada's second largest telecommunications company has a 100 percent digital, province-wide network that includes over 65,000 kilometers of fibre optic line. It employs 11,000 Albertans.
- **Nortel Networks.** Alberta is the site of Nortel's world centre for wireless research. It operates two high-tech manufacturing plants in the province, employing more than 3,000 people.
- **TRLabs.** As the largest not-for-profit telecommunications research consortium in Canada, it operates a research laboratory network developing telecommunication technologies for commercialization. Wireless and fibre optic communications are two of its main areas of focus.

Other telecommunication companies operating in Alberta include Harris Corporation, which manufactures wireless communications systems and Wi-Lan, which conducts research and development, design testing, and final assembly of wireless LAN systems. Harris Corporation employs some 200 Albertans while Wi-Lan has 60 employees in Alberta.

An industry spokesman interviewed for this report indicated that the demand for wireless technicians is "a huge market across North America that will get even bigger, particularly for those with 'RF' (radio frequency) expertise." (Babione).

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