Industry feels pinch as numbers of IT grads plummet

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Calling all computer geeks. Your country's economy needs you.

Computer science graduates are becoming increasingly rare. Since the end of the high-tech boom, enrolment at Canada's computer science faculties has tumbled as students and their parents soured on an industry that lost investors billions and shed so many jobs. As a result, employers are scrambling to recruit and to get attention for a situation that has all the makings of a major skills shortage in Canada and across North America.

A student works at a computer station at Dalhousie University in Halifax. Since the end of the high-tech boom, enrolment at Canada's computer science faculties has tumbled. *(Paul Darrow For The Globe and Mail)*

They plan to ramp up those efforts today with the release of a Conference Board study commissioned by a coalition of Canadian employers that highlights the need for more IT professionals and projects as many as 58,000 new jobs in the industry in the next year.

At universities, computer science and computer engineering schools are involved in some serious soul-searching of their own, trying to understand why students stopped knocking at their doors and working on ways to get them back.

"When every headline screams layoffs, kids are not going to think about computer science and parents are not going to let them think about computer science," says Craig Boutilier, chairman of the University of Toronto's computer science department.

Undergraduate enrolment at the school is down about 50 per cent from its peak in 2002, the year following the tech bust. Back then, classrooms were crammed, thanks to a provincial funding program that supported expansion. When numbers first began to fall, the smaller classes were welcome, he says, but when it continued, the red flags went up.

"At first it was very hard to get people at the table," Prof. Boutilier says. "People didn't notice what was happening until after the fact."

So how bad is it? A new study that has not yet been released shows a sharp decline in undergraduate enrolment in computer science and computer engineering faculties in almost all areas of the country from a peak in 2002. Depending on the region, the study finds a 36-per-cent to 64-per-cent drop in student numbers. British Columbia is the one province to buck this trend.

A similar problem has raised alarm bells in the United States, even prompting Microsoft founder Bill Gates to call for action.

"It has really dropped significantly and it has dropped across North America," says Jacob Slonim, co-author of the study prepared for Industry Canada and the past dean of computer science at Dalhousie University in Halifax. "That means, really, companies will suffer significantly for the next few years."

Business leaders within the Canadian IT community share the same fear. They say the technology industry is still seen by potential students as unreliable for long-term employment.

"A lot of parents got burned through the dot-com era and weren't encouraging their kids to go into IT-related programs because of that fear of instability," says Terry Power, president of Sapphire Technologies Canada, a company that recruits and places about 4,500 IT professionals for corporations every year.

Over the past three years, the demand for IT professionals in Canada has doubled as baby boomers opt for retirement, while the robust Canadian economy has fuelled tech spending by everyone from software developers to banks and insurance companies, Mr. Power says.

Phil Sorgen, president of Microsoft Canada, says there simply are not enough graduates to meet demand. About 35,000 new information and communication technology jobs are created annually in Canada, however universities produce only enough graduates to fill about one out of every five of those spots, he says.

Companies such as Microsoft Canada, which can't find talent close to home, are scouting markets around the world.

Dr. Slonim, who co-authored the federal study with Dalhousie's former provost Sam Scully, believes there is no quick fix for the problem. His report, based on data from 35 of the country's major computer science and computer engineering programs, concludes that industry must take the lead in solving the problem, but it also finds that faculties need to examine how they teach their courses to attract and retain students. Dr. Slonim says the full extent of the problem was slow to emerge because some faculties did not wish to draw attention to their falling popularity. "Universities did not want to tell their problem," he says.

Many universities, including Dalhousie, have made changes, working to combine computer science courses with other popular majors such as business, science or math.

At the University of British Columbia, Jim Little, the associate chairman of graduate programs, credits such combined programs for keeping interest high on his campus, although it has still fallen from peak levels.

Now he expects demand from employers will help to pull new students into programs. "The job market is almost ridiculously good," he says. Indeed, it is so hot that recruiting and retaining graduate students has become a new problem.

At the University of Toronto, computer science student Thuan Ta landed a job recently without any hunt. Representatives from Montreal-based Ubisoft visited his class and saw a demonstration of a video game he and a group of other students created. "I didn't have to look too hard," the fourth-year student says. "They just asked my professor for my resumé."

Prof. Boutilier says his department is introducing new options, including the game design course that got Mr. Ta his job offer.

He says efforts also need to be made to interest younger students in the field and educate teachers and guidance counsellors. And he also expects the buzz about jobs in the industry will reverse the trend.

"People are going to start to pay attention," he says.

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