

Canada needs a show of hands in IT industry

Computer-related job availability is increasing, while training enrolment plummets

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For CanWest News Service

Saturday, December 02, 2006

Canada's IT industry is looking underfed thanks to a lack of new expertise -- and that could affect companies' ability to perform, warn experts. The recently renamed Information Communications and Technology Council, tasked by the government with promoting technical skills in Canada, is proposing a broad set of initiatives to reverse the trend.

Figures from the Computing Research Association show computer science degree student numbers plummeting in the United States, and academics suggest the same is true in Canada. The number of incoming undergraduate students majoring in computer science fell by 70 per cent between 2000 and 2005, according to the CRA's Taulbey survey.

"There has been a definite drop in enrolment in the past couple of years," agrees Michael Katchabaw, assistant professor at the University of Western Ontario's computer science department.

While enrolments fall, demand is increasing. The ICTC has compiled Statistics Canada figures on employment trends in the communications and technology sector and is concerned about the results. The labour force for this sector, which has been broadly rising since last summer, started dipping again in June, falling below September 2003 levels for the first time. The unemployment rate for professionals in this field has been falling since June 2003, and the most recent figures this summer suggest unemployment figures of about 2.75 per cent. The council expects to see demand for 89,000 new hires in the next three to five years.

The problem presents Canadian companies with recruitment challenges. "We are experiencing some gaps on a number of fronts," says Carol Ariano, vice-president in human resources, global operations at Montreal-based IT services company CGI. The company is hiring hundreds of new people across all of its Canadian offices.

Technology skills are crucial to performance, warns Stephen Ibaraki, a board director at the Canadian Information Processing Society (CIPS).

"Because organizations are unable to get sufficient numbers of skilled workers, that will affect them," he says, warning of the potential impact on competitiveness and service delivery. "Organizations need to adapt very rapidly, and that ability is dependent on technology."

To make matters worse, experienced workers are retiring, Ariano warns. About 31,000 IT workers will retire or otherwise leave the industry within five years, according to the ICTC.

While this is a problem for Canadian industries across the board, Ariano argues it's a particular issue for IT because it's a young sector with falling graduate input. The skills base is being eroded at both ends.

Part of the reason enrolment is dropping off is perception. "Enrolments in post-secondary education in IT courses have dropped by around 50 per cent because of the negative view of the IT sector," says Paul Swinwood, ICTC president.

The post-bubble crisis in IT has turned educators and students away from the sector and they are not recognizing its recovery, he warns. "In reality, there are 35,000 more people employed in Canada today than at the height of the boom in IT."

"We're seeing a demand for higher-end skills in Canada as a result of globalization," Swinwood says. "We're not programmers to the world. I think India's trying to take that place."

"Higher-end" means skills that mix technical expertise with business knowledge. In addition to traditional software development skills, CGI needs "technical people who can also function as management consultants. And preferably people with deep subject matter expertise." Project managers are in particularly high demand.

Figures from recruitment company Robert Half Technology bear this out. The company's 2007 Salary Survey found that salaries for Canadian project managers in consulting and systems integration range from \$74,000 to \$105,000 -- up 5.6 per cent from last year's survey. Business systems analysts could expect to earn between \$61,750 and \$88,750, which is up 4.9 per cent.

One solution to filling this shortfall, Ibaraki says, is as near as CIPS, which has a membership base of 6,000 practitioners. The other immediate solution could be immigration. "Canada is a welcoming country for people with IT skills," Ariano says. "Increasingly, as we look at a smaller available workforce, people with appropriate qualifications from other countries are certainly welcome."

Many would argue the onus is on developing these skills within Canadian schools and universities. One key to that is co-op programs, which place students in companies for a portion of their study time. Experiential development programs, where companies work directly with in-house student teams on commissioned projects, can also help students marry business and technology expertise early in their careers.

But these activities won't capture the imagination of high school students. "If the students aren't getting interested in IT at the K-12 level then you're slimming it mightily upstream when you want to get people involved at the higher education level," says Bobby Schnable, a member of the ACM's globalization task force.

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