

IT PROFESSIONAL

IT SKILLS SHORTAGE CAN BE ADDRESSED

There's a false impression IT isn't cool anymore, but the truth is there are plenty of opportunities across all industries for those with the skills and the right accreditations

By Stephen Ibaraki



There is an IT skills shortage and an anticipated net shortfall in the next six years unless specific measures are taken to address the issue. John Bouford, president of the Canadian Information Processing Society (CIPS), sees CIPS taking an active and essential role working with industry partners to resolve this crisis in skills demand.

CIPS fellow Calvin Gottlieb, a founding pioneer of the worldwide computing industry and professor emeritus at the University of Toronto, has warned, "There is no doubt that there is a current shortage of persons with computer and communication skills. Further, if action is not taken, the shortages will become more acute. A recent report of the U.S. Bureau of Labor Statistics states that in spite of off-shoring there are more IT jobs available today than at the height of the dot.com boom." This is backed up by a Software Human Resource Council (SHRC) report placing the IT unemployment rate at 1.9 per cent in 2005. That's in sharp contrast to the overall rate of 6.5 per cent, and reflects the growth trend in IT.

Charles Hughes, president of the British Computing Society (BCS), said around 150,000 entrants to the IT workforce are required each year between 2005 and 2014. Of these, around 80 per cent are needed to meet replacement demand and around 20 per cent to fill new positions.

What are the drivers behind the shortage? There is a false impression that IT isn't a viable career post dot-com. "IT isn't cool anymore and there is confusion in the marketplace," said Microsoft director John Oxley. "While the salaries are still really high for anyone just entering industry, it is becoming harder to see where an individual's career can go. No longer are people simply IT implementers,

developers and managers. The industry is growing and the roles that make up many IT organizations include user experience specialists, graphics designers, multimedia designers, project managers, business process leads, relationship managers, systems architects and program managers, just to mention a few."

College and university enrolments have also declined as much as 50 to 70 per cent since 2000. "I believe in part

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the shortage comes from the negative message that resulted from the dot.com bust. This was exacerbated by all the talk of globalization, and jobs moving to India and China," Gottlieb said.

CIPS fellow and noted educator Maria Klawe, president of HMC in an interview in the CIPS/Microsoft Canadian IT Managers blog (CIM), talks about the incorrect perception of IT as a "has been" profession due to the dot-com bust and outsourcing. He also points to parents and guidance counsellors advising students not to enter the computer field. This is despite high salaries and more jobs today than before. Contributing to the skills shortage is the increasingly embedded nature of IT into every aspect of our lives, thus driving up demand for IT workers. In addition, 2.9 million workers are within 10 years of the median retirement age (or one in five workers), according to a 2003 Stats Canada figure quoted in a

Workplace Partners Panel report from the Canadian Labour and Business Centre.

The impact of this shortfall in IT skills dramatically impedes a diverse array of areas due to the high dependency upon technology. For example, it affects overall reduction in productivity, profitability, business agility, collaboration, innovation, service delivery, customer responsiveness, competitive advantage, clear differentiation and market focus.

As well, it limits technology adoption rates as well as an organization's ability to leverage that technology to lower operational costs, limits growth opportunities and reduces the ability to bring new products and services to market. It reduces the availability of goods and services to consumer, contributes to higher recruitment costs due to the tighter IT labour supply and competition for a limited IT labour pool, and leads to higher training costs for new employees to replace loss of experience and specific skills.

Solution can be found

The solution to the skills shortage can be found in CIPS's professionalism programs, which are similar to those of BCS. CIPS places an emphasis on a wider skills set that includes business, communications, relationship and technical skills. As Hughes said, "BCS has launched a major program to raise the level of professionalism in IT, which will help tackle these issues.

"We need a profession that plays a full part in the exploitation of IT; is seen as an integral part of business; has appropriate technical and non-technical skills; is about both information and technology; demands greater personal responsibility on the part of practitioners; is attractive
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DIPLOMACY, TACT, BUSINESS SMARTS ARE SKILLS IT PROFESSIONALS NEED

It's no secret the IT profession is in a constant state of transformation. Continued advancements in technology, offshore outsourcing, national and regional market trends and a host of other factors contribute to the evolving nature of our field. While these situations are all vastly different, the implication for your career is the same for each. Deep technical skills will always remain at the core of every IT professional's skill set, but there's more reason than ever to strengthen your non-technical experience to move your career forward. Consider these examples:

Advancements in networking technology mean that many operations that were previously handled by human operators — for example, testing and rollouts — can now be accomplished through software alone. As a result, networking professionals are increasingly being asked to shift their focus from operational tasks to strategic thinking. Technical skills are required to launch and monitor processes, but senior staff are also moving into roles



Igor Abramovitch

where they collaborate with colleagues from other departments to examine big-picture initiatives.

On the development side, organizations of all sizes continue to utilize ERP programs, such as those produced by Oracle, SAP and PeopleSoft, to replace in-house systems and link various internal processes.

Traditionally, the majority of firms bought off-the-shelf technology and relied on teams of programmers to customize the code to meet their own set of circumstances. For example, the financial module in the packaged software might align seamlessly with the company's existing accounting process, but the human resources module might need a complete overhaul to prove useful. These modifications were, in many cases, expensive and sometimes prevented the organization from successfully upgrading their ERP programs.

A growing number of firms are now taking a different approach — they're modifying their business processes rather than the applications they purchase. In addition, software firms have developed more customizable ERP solutions, allowing for flexible configuration options that don't require code-based changes. Combined, these factors contribute to significant cost savings for the organization as less customer support is needed, upgrades can be made faster and more efficiently, and implementation is simpler. Companies, therefore, require technology staff to take a more functional approach than in the past. Today's IT professionals need a deep knowledge of the complex configuration options available for top ERP packages, as well as the ability to identify areas where business processes can be modified to fit with ERP applications. Thus, developers and business systems analysts must possess a thorough understanding of the organization as a whole and have the skills to link the technical and business sides of an issue.

No matter what your role is within your firm's IT department or the unique issues you may be facing, it's becoming necessary for all IT professionals to possess the following non-technical abilities:

- Communication skills: As businesses place increased focus on technology, they seek strong communicators who can clearly explain complex technical concepts to a variety of colleagues.
- Business fundamentals: IT professionals must be able to understand the company's operations and translate business requirements into savings.
- Interpersonal skills: Diplomacy and tact are essential when working on teams.

Technology executives agree that non-technical skills are gaining importance. Build these abilities by assuming greater responsibility, taking continuing education courses and networking.

Igor Abramovitch is a division director with Robert Half Technology, a partner of CIPS with more than 100 locations in North America and Europe.

Calgary responding to ICT shortages with education, training

In Alberta, the overall unemployment rate of just over four per cent is at least two full percentage points lower than the Canadian average. Calgary leads the province with an unemployment rate of well below four per cent.

The Information and Communications Technology (ICT) field is tighter still, causing considerable tension in the industry.

Growth in most industry verticals is unparalleled, leading to continued strong demand for ICT services.

The Calgary section of the Canadian Information Processing Society (CIPS) recently interviewed 34 area ICT decision makers, including CIOs and ICT consulting companies, to obtain their opinions on a number of issues relating to changing skill needs and the related skill gaps, or shortages. The largest skill gaps were seen as:

- Business analysis capabilities such as financial management, understanding the business, ROI, process management, etc.;
- Specific technical skills, in various areas, including ERP;
- Network and application architecture;
- Soft skills such as communication, negotiating and writing.



Mike Blackwell

Of more than 225 comments received, business analysis skills occurred at least twice as often as any other.

While demand for developers and infrastructure people has

not diminished to any extent, the need for a blending of business and technology skills and experience is paramount in successfully delivering projects or supporting the business's technology needs.

To further aggravate the situation, student enrolment is down in some areas of IT education. If this is a recurring trend, the future will likely be more bleak than today.

So what's being done? Successful companies are employing aggressive retention strategies that include training key staff and providing improved work-life balance programs. The ICT professional is a hot commodity in Calgary right now, and the consulting firms are hopping.

CIPS Calgary discussions provided extensive feedback on how CIPS can support Calgary ICT decision makers' efforts, in line with these challenges:

- Make education and training opportunities more accessible;
- Provide networking opportunities so members can learn from each other;
- Align with complementary associations to round-out the ICT definition;
- Assist with career planning and development.

As a result, CIPS Calgary is actively becoming the virtual meeting place for ICT professionals by broadening the definition of ICT through its annual program and by forming alliances with other associations.

Mike Blackwell is the president of the CIPS Calgary section. mikeb@cips.ca.



Career tips

- ✓ Brush up on your business skills if you want to remain relevant in an automated world
- ✓ Certification is key to career development
- ✓ Assume greater responsibilities in your organization where possible
- ✓ Get as much training as you can to keep up with changes

IT SKILLS SUPPLY STARTING TO DRY UP

If your water supply was endless (and you didn't mind getting your feet wet) you'd probably just keep adding water. However, if you were facing a drought you'd probably think about fixing the hole in your bucket.

So what does keeping your bucket full of water have to do with an IT skills shortage?

After the Y2K phenomenon we were dealing with a relatively endless supply of skills. While staff had fewer places to go to, if an organization did lose someone they weren't too stressed about it — they'd simply engage recruiters to go find replacements.

Recently all signs are indicating that we are entering a period of drought. The supply of new IT graduates is slowing and the baby-boomers want to reduce their hours. Meanwhile, the aggregate



Dan Thomson

demand is increasing. Our water supply is shrinking and the bucket is getting bigger.

In our world of instant gratification it is easier to focus on recruiting rather than retention. Hiring a new resource is a tangible event — you can analyze the exact cost, it is exciting and you can introduce a real person. While an equal investment in staff retention will likely yield even greater returns, these benefits are not as easily quantifiable. Retention can also be tougher than recruiting. Retention strategies involve changing behaviour throughout your organization and the efforts must be maintained for years. It also means following through on

promises made during recruiting. For retention to be effective you need a human capital plan that addresses a wide range of factors, including:

- Career growth: Whether breadth of variety or depth of specialty, people must be able to find growth, change, and excitement of new challenges from within your organization, rather than finding that change by leaving.
- Performance feedback: People want to know what they're doing well and what they need to improve upon. Many people who desire feedback will never ask for it but they do expect it.
- Pay for performance: People must know that strong performance gets rewarded. Adequate compensation and benefit plans are not enough to keep people, but poor plans can drive people away.

■ Respect for work-life balance and providing flexibility is expected and pays big dividends.

■ Relationships: People are less likely to leave your bucket if they're a respected part of your team and enjoy working together. Relationships are built through ongoing communication. Make sure you take your staff out for coffee more often than the headhunters do.

As the drought worsens others will be eager to make that hole in your bucket even bigger and attract your best people.

Now would be the best time to start fixing the leak.

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INDUSTRY MUST UNITE

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to a much wider group of entrants; has a reputation for excitement and makes a real difference to society."

It's essential to bring together business, industry, government, media and academia into an active discussion to counter the misconceptions.

Moreover, attention is being brought to the skills area through the media partnerships and the CIPS communities

found in Canadian cities across the country. The key here is to engage more people in IT and provide a venue for professional development.

CIPS is vocal about the career opportunities available and the increasing growth in IT.

Stephen Ibaraki is the vice-president of the Canadian Information Processing Society and a 35-year veteran of business and IT.

Retiring boomers about to leave a big hole in the market for skilled legacy system workers

Economist David Foot famously claimed in his best-seller *Boom, Bust & Echo* that demographics explain two-thirds of everything. It appears that information technology is no exception.

The first of the baby boomer generation reached the age of 60 this year and, by 2016, most will be retired. For many, a growing worry is the potential skills gap that the boomers could leave in their wake. It's a gap that's of particular concern to banks, hospitals, governments and other organizations that still rely on the mainframe and legacy systems those boomers built 20, 30 or even 40 years ago.

"When there is an incoming skills deficit and another outgoing one looming at the top end from retirees, you have a recipe for a very serious problem," said Stephen Ibaraki, vice-president of the Canadian Information Processing Society (CIPS).

For years we've been hearing about the imminent obsolescence of mainframe applications, but in most cases the costs and time required to migrate or decommission them have been too high.

"Complexity is another factor," said Dave Nikolejsin, chief information officer for the Province of British Columbia. "Conversely, everyone knows how risky it is to try to change out the systems that are running the whole business in one big project."

Compounding the problem is the recent drop in university and college IT



Peter Thompson

enrolment. "Theoretically, market forces should yield higher input into the funnel when demand at the output is high," said Ibaraki. "This has not happened. IT demand is up to near record levels and salaries are amongst the highest in the overall workforce, but the feeder systems are down."

Ibaraki points to a number of reasons behind the drop in IT enrolment, chief among them the fallout from Y2K and the dot-com crash in creating negative perceptions about the profession.

But even if more people were enrolling in IT programs, you wouldn't find them learning about legacy technologies.

"Canadian university programs are not well suited to be a solution," according to Mike Dover, vice-president of syndicated research at New Paradigm. "You could carefully review the syllabus at any of our universities without finding courses that address these specific skills," he said.

Paul Swinwood, president of the Software Human Resource Council (SHRC), agrees. "I have already seen that this is a major problem for those trying to maintain legacy systems," he said.

On the up side, it's certainly a great time to be an expert in legacy systems. Where their roles have traditionally been looked upon as the grunt work of IT, simple market dynamics could make them the new IT heroes.

Peter Thompson is president and CEO of RIS, an IT services firm, and author of *SMART Methodology and Maximizing IT Value Through Operational Excellence*. pthompson@cips.ca

Stereotype about introverted IT professionals has basis in truth

It is clear that the expectations for information and communications technology (ICT) practitioners are shifting. When there was a significant gap between demand and supply for ICT skills, understanding the nuts and bolts of your chosen field was enough to get started and do well. In future, however, the practitioner will need to bring more to the table — not just technical depth, but also a more rounded set of skills that extend to meeting customers at their

level.

Someone once told me this joke: "Question: What's the difference between an introverted programmer and an extroverted one? Answer: The extroverted



Will Gough

one looks at the other person's shoes when talking."

The sad part about this stereotype is that it is sometimes true, and furthers the notion of IT practitioners as geeky, talking eloquently about DLLs and algorithms but unable to talk to customers in dollars and cents.

Customers want to understand the business impact of technology decisions — and this is exactly where the skills shortage is becoming apparent.

Although there is a healthy demand for skills in current technologies, organizations are looking more and more for skills in higher-value areas like architecture, business analysis and management. Regulatory requirements have emphasized the need to implement more oversight of information systems, especially those that support financial operations, and ensure that those systems are more effectively managed.

The skills needed to meet these requirements go beyond programming or system administration, and organizations are often scrambling to find or develop them.

Recently, a provincial task force sought input on skills shortages and preparing the workforce for the future. One of the most interesting questions asked by the task force was: What can be used to recognize past work experience? It is ironic that in an industry with a prevalence of keyword-based hiring, many of our more experienced practitioners do not have an opportunity to work in current technologies, yet they possess many of the skills in management, leadership and understanding the business that enable the effective implementation of those same technologies.

The Information Systems Professional of Canada (ISP) designation is a means of recognizing those higher-level skills

and — independently of technology — speaks to the depth and breadth of experience that ISP holders possess, as well as their commitment to professional development.

CIPS, as the voice of professionalism in

the ICT industry, advocates the licensing of software professionals through the ISP designation and promotes continued professional development of practitioners.

CIPS develops practitioners who don't

look at customers' feet, but rather look them in the face.

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