

## Perception gap fuels skills shortage

*By Gordon Smith- Thursday May 29 2008*

Ireland's IT sector has many well-paid job opportunities for skilled graduates – so why are they going unfilled?

Ireland is not producing enough skilled computing graduates to fill the jobs available in the technology sector. This is not the first time demand has exceeded supply but there are troubling signs this condition could be more deeply embedded than before.

The immediate cause is clear: the number of students graduating from third-level computing and software development courses has plummeted.

Dublin City University (DCU) has one of the most respected computing courses in the country. In 2005, 224 people graduated from its degree course and almost all were employed soon after. The following year that figure dropped to 92, and in 2007 it fell again to 78.

“Right across the board, the numbers applying to study computing dropped by over 70pc in the space of two years. They fell off a cliff,” says Michael Ryan, professor of computing at DCU.

Fewer than 80 students are expected to graduate in computing again this year and the immediate prospects are not promising either. “Between now and 2010, it will be in the seventies,” Ryan says.

Other institutions have experienced similar patterns. The number of computer science graduates from University College Dublin dropped from 76 in 2005 to 33 in the current academic year.

This comes at a time when prospects for the industry are healthy: a report by the IT analyst firm IDC showed IT employment is forecast to grow by 4.7pc by 2011.

It's the same story at a local level. A survey on industry salary levels carried out by Sigmar Recruitment earlier this year found the Irish IT industry is producing more vacancies than qualified IT professionals can fill.

The Irish Software Association (ISA) is concerned by the current situation. “We’re very worried about the trend at the moment. It’s leading to a skills gap which will threaten the future of the sector,” says ISA director, Shane Dempsey.

“An immediate concern for Irish software companies is to fill the skills gap in their own companies. If they and larger companies can’t find the skills, then they won’t be able to compete globally,” he says.

Dempsey says the calibre of Irish graduates isn’t the issue, just that there aren’t enough of them. “Skill levels are quite high – it’s quantity rather than quality that we’re having difficulties with.”

Fiona Mullen, head of HR at Microsoft Ireland, concurs. “We see a lot of great talent coming out of third-level education in Ireland, but unfortunately the overall numbers are falling and that’s something we should be concerned about. We need to continue to encourage higher-skilled graduates and PhDs in the area of computer science,” she says.

A knock-on effect has seen software companies increasingly turn to foreign workers to meet demand. Anecdotally, this is thought to be as high as 50pc of new recruits in some firms.

“In 2008, there is again a huge demand for software developers with Java, .Net and web development experience and this void is being addressed by migrant workers coming mainly from Italy, Spain, Poland and Hungary, among others,” says Barry Rudden, associate director with Sigmar Recruitment.

Microsoft is one of the largest technology industry employers in Ireland, with 1,200 staff across its operations, in addition to around 700 full-time contractors.

“While we continue to attract great graduates, the falling volume of candidates means we also recruit from overseas,” says Mullen.

Microsoft’s workforce comprises 75pc Irish workers and 25pc foreign nationals. That ratio is completely reversed at Google’s Dublin operation, where only one in four of its 1,500 employees are Irish.

John Herlihy, general manager of Google Ireland, says the company is “pretty satisfied” with the technical level of graduates from Irish universities but another vital skill is not being addressed.

“Ireland needs, as a country, to get more progressive on language skills. We need to look at introducing languages much earlier in the education lifecycle,” he says.

Anthony O’Mara, EMEA vice-president at Trend Micro in Cork, agrees. “It is getting relatively difficult to recruit skilled staff with a second language, certainly among Irish people. I don’t see the joined-up thinking on how we’re going to fix that problem.”

Another point the companies all have in common is job opportunities; Google wants to recruit a further 150 staff, while Trend has 25 positions to fill “as a matter of priority,” says O’Mara.

Fortunately, these firms don’t appear concerned that attracting staff from abroad could prove difficult in the longer term, even if the current economic climate persists.

“We find very few challenges in attracting talent from abroad, partially because of the exciting R&D work Microsoft is doing in Ireland, and partially because people see Ireland as a great location to come and work,” says Mullen. “Given we’re focused on hiring the best and brightest minds, we don’t see any impact from any potential downturn.”

Nonetheless, work is going on behind the scenes to try to improve the situation. The ISA has identified weaknesses in teaching maths at secondary level as a reason why many students don’t subsequently take up science, engineering and computing courses.

In Singapore, appropriately qualified teachers are given higher starting salaries. “They have a higher pupil-to-teacher ratio than Ireland but the outcomes are better because you have more pupils in front of a better teacher,” says Dempsey.

The industry is also working to promote the sector as a good career destination by raising awareness among parents, career guidance counsellors and students.

“We talk about the indigenous success stories like Fineos, Curam, Daon and Havok,” says Dempsey. “It allows people to be entrepreneurs or to work with the multinationals. There are loads of opportunities and we need to get that message out.”

Mullen says more can be done to foster interest in careers in the technology sector. “We in the industry have to do a better job selling the fantastic opportunities for innovating and working in the technology sector and we have to work with government, state agencies and educators to reach out to students from primary to secondary and on to the third level.”

Herlihy concurs. “We need to play to people’s commercial as well as intellectual appetite. We need to stress that people like Steve Jobs, Larry Page – who are maths, engineering graduates – have established global innovation factories.

“You can change the world and make a good living by studying science, engineering and maths. Those subjects have provided the foundation for most of the major players on the net.”

Bad advice blights careers and future of sector

The sharp drop in computing graduates can be traced to the technology downturn of 2001-2002, which created a mistaken belief that the sector faced an uncertain future.

Well-meaning parents and career guidance counsellors advised students against computing courses.

Michael Ryan, professor of computing at DCU, says software development is not a niche activity with a narrowly defined career path. “Everything from computer games to medical equipment uses software. The hardware end is just engineering,” he says.

“People keep confusing computing with other things. It’s got nothing to do with what Dell does in Limerick or what Gateway did in Coolock in days gone by.”

A computing course offers practical skills that can be applied in a variety of situations, adds Ryan.

“Software development is about how to analyse problems, how to structure a solution for them and how to put that in computer languages. It’s a question of understanding what the user needs.

“The study of computing is educational – it stands to you irrespective of what you do.”

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