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NO END TO ICT SKILLS CRUNCH

SOUTH AFRICA'S ICT SKILLS SHORTAGE STARTS AT SCHOOLS AND UNIVERSITIES, BUT THE INDUSTRY IS ALSO NOT DOING ENOUGH TO BUILD ITS BASE OF SKILLS FOR THE FUTURE.

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From software development to telecoms, and from hardware infrastructure to business intelligence, South Africa's ICT industry is facing a crippling shortage of the skills it needs to deliver on large projects.

Graduates with ICT qualifications, senior managers and especially mid-career professionals are all still in short supply across a range of disciplines and market segments. The situation looks likely to get worse before it improves, especially as the industry recovers from a long slump in demand for its products and services.

"We spend a lot of time thinking and worrying about the skills shortage," says Greg Vercellotti, executive director of software development firm Dariel Solutions. "The recession turned a skills crisis into a mere skills shortage. But now that we are seeing a lot of activity in the market again, we are facing a massive shortfall of qualified skills."

Oracle South Africa country manager Pieter Bensch says his company alone is looking for about 1 700 new employees across Europe, Middle East and Africa. "The skills shortage is a topic that arises in all our discussions with our clients," he says. "The shortage covers various levels, from consultants to project managers."

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BRAIN DRAIN Australia's Gold Coast is full of South African IT professionals, says Vanessa Raath, It's About People.

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Vanessa Raath, recruitment manager at It's About People, says a shortage of skills is a global crisis but one that is hitting South Africa particularly hard. The country is competing against developed countries for skills – Australia's Gold Coast, for example is full of South African IT professionals.

"The shortage of skills – and the scramble for best talent – is a global challenge," agrees Siyabonga Nkosi, talent lead at Accenture Southern Africa. "However, the skills shortage in South Africa is acute."

One reason for the skills gap is increasing demand for ICT services across industries such as banking, telecoms, retail, mining and government as organisations seek to drive operational efficiencies and growth, says Nkosi.

The news isn't all bad, says Raath, whose company specialises in business intelligence placements. It's About People works with Homecoming Revolution and has noticed a sharp increase in expats looking to return to South Africa.

Some are being pushed back to South Africa by the global economic crisis. Others want to settle down to raise children near their families. All of them are returning with valuable international experience.

"We are interviewing one guy who is a Sharepoint expert with a decade of specialist experience. You would battle to find more than a handful of people in South Africa with that level of skill," Raath says.

The missing middle

Many recruitment firms and ICT companies bemoan a gap in the market for technical skills between fresh graduates and senior professionals working towards retirement. Mid-career ICT professionals with a few years of experience under their belt appear to be moving into management positions or heading overseas in large numbers.

"There are technical people who want to stay technical, but so many young professionals believe they must move into management to make the real money," says Teryl Schroenn, CEO at HR and payroll solutions firm Accsys.

"The people we're targeting with around four years of experience seem to be emigrating," says Mario Matthee, head of software quality assurance at DVT. "And the skills situation is going to get worse. The market is picking up, with many new projects being approved."

At a high level, the most coveted skills are those of people who straddle the worlds of business and technology. Companies need people who not only understand technology, but who can also integrate services from a range of service providers to create a solution and who can consult with business users in their own language.

One skill-set that many recruitment firms and software developers single out as especially scarce is that of the mid-level to senior business analyst, a professional who bridges the divide between technology and business.

One reason for this is that businesses are focussing on process improvements rather than merely implementing new systems, says Cindy von Pannier, sales and marketing director, Adapt IT Group.

Sean McLean, IBM South Africa's university relations manager, says that skills in short supply cut across IT architecture, infrastructure and software development. People with an understanding of mobile and cloud architecture are in demand, as are storage and database administrators.

Experienced software developers and testers are few and far between, says Matthee. Niche skills and emerging technology skills such as mobile are especially hard to find.

"Hot skills include SAP, network technology skills, process management, application development, systems analysis and database development," says Nkosi.

Brent Flint, services executive for Dimension Data Middle East and Africa, says one of the major challenges lies in transitioning legacy skills to newer technologies such as converged networks. The key shortages from Dimension Data's perspective lie in cross-domain skills such as virtualisation, unified communications and collaboration, and IP telephony.

It goes without saying that companies are struggling to meet their employment equity targets with a dearth of candidates emerging from tertiary institutions. "Employment equity skills are a really big problem. We are not seeing a representative number of non-white people entering the industry," says Vercellotti.

"Everyone is looking for black, female Java developers," says Matthee. "Those that are available command premium salaries."

Catch them early

The skills problem starts with a schooling system that isn't producing nearly enough matriculants with the mathematics and science marks they need to study computer science or electronic engineering at university, says IBM's McLean.

"Looking at the education system is a good starting point [to understanding the ICT skills shortage]," Matthee concurs. "It's not doing us any favours at this stage."

Many of the pupils that leave school with good maths and science passes are looking at career options in other industries because the IT industry lost some of its lustre during the downturn, says Flint. For that reason, Dimension Data is introducing itself to potential future employees while they're still at school through initiatives such as a computer-based training Saturday school.

> **"THE SKILLS SITUATION IS ONLY GOING TO GET WORSE AS MORE PROJECTS ARE APPROVED."**
>
> MARIO MATTHEE, DVT

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POOR SCHOOLING The low graduation rate from tertiary institutions means there is a weak pipeline of ICT skills for the future, says Sandra Burmeister, Landelahni Recruitment Group.

Most of the large network operators, systems integrators and multinational vendors have formal graduate programmes to identify fresh talent from tertiary institutions. Accenture, for example, takes in about 180 graduates a year. Oracle targets about 20. Competition for the best candidates is fierce and even at this entry level, demand outstrips supply.

Sandra Burmeister, CEO of the Landelahni Recruitment Group, says one of the most troubling trends for skills in South Africa's ICT industry is a decline over the last decade in the graduation rates of students taking computer science, electrical and electronic engineering degrees and diplomas.

The total number of students that enrolled for these courses has grown only slightly and the marginal increase of graduates does not match the growth rate of the ICT industry.

Technology companies also complain that most of the graduates coming from the universities are not ready to hit the ground running when they start working. Tertiary and formal training institutions provide just 15 percent of the learning required for job performance, says Stark.

The rest is provided on the job or through additional courses. Government is making a large investment into the further education and training (FET) colleges, and would like to see the level of training offered by the institutions elevated and then used to train the masses that need skills upgrades, Stark says.

"Universities are not agile enough," says Von Pannier. "They should be partnering with businesses to deliver what real-world organisations need."

"The skills students get from their tertiary education is not suited to the commercial world," agrees Vercellotti. "It can take six months to make them productive."

He suggests that universities get students to use commercial technologies for their theses and projects.

Vendors are increasingly aligning themselves with universities to ensure that graduates emerge with an understanding of the application of their technologies in the real world. IBM's Academic Initiative, for example, provides tertiary institutions with no-charge access to hardware, full-version software, professionally developed courseware, tools, training, books, and discounts.

Short-term thinking

The Oracle Academy initiative allows universities to access Oracle software and training curricula for a nominal fee. Students learning with these technologies can get certifications that show they are proficient in solutions used in the real world, says Oracle South Africa transformation director Wendy Karlson. The programme reaches about a dozen South African universities, she adds.

In the scramble for skills, companies have resorted to tactical measures to plug the gap, ranging from headhunting from competitors through to outsourcing to India or simply throwing a lot of quick training courses at their employees.

Job-hopping is still rife, though not quite as much as it was in the boom years, say ICT companies and recruiting firms.

"Every company feels they are training for everyone else," says Schroenn. "The impression we get is that people are offered sizable increases to move."

"Many top organisations rely on their ability to poach from

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"MANY ORGANISATIONS RELY ON THEIR ABILITY TO POACH FROM OTHER ORGANISATIONS TO MEET THEIR SKILLS NEEDS."

ANDREW STARK, CYCAN

other organisations to meet their skills needs," says Andrew Stark, head of business development at leadership solutions group Cycan.

Others are taking a reactive approach to the skills shortage by cross-training and multi-skilling staff to address immediate shortages, he adds. This approach does not help to develop the next generation of ICT skills.

Because there are not enough graduates entering the workforce with the qualifications employers are looking for, industry players have come to depend on in-house training programmes to develop their skills bases, says Burmeister.

Landelahni found in a 2009 survey that the telecoms industry outstrips the all-industry average when it comes to in-house training. Research the firm is currently conducting indicates the picture hasn't changed much. Executives in IT companies also say they spend a lot of money on internal training programmes.

Although in-house training programmes help to plug immediate skills gaps, it is a short-term solution that does not help to secure a sustainable base of skills for the future, Burmeister says. Short-term delivery should not be at the expense of long-term investment in skills development, she adds.

Companies need to invest more heavily in formal graduate programmes and pay more attention to formal career-pathing if they want to work towards a longer-term solution to the skills crisis, according to Burmeister.

Not just money

Vigorous competition for skills has turned skills retention into a scientific discipline. Most ICT companies say that job satisfaction and career opportunities are as central to skills retention as remuneration.

"IT people are not known to be the most loyal employees, but they can be if you manage them well," says Compuways CEO Arnold Graaff. To hold onto their technical staff, companies should reward them with training that they will have opportunities to apply, he says.

"To keep employees today you need to constantly give them challenges," says Graaff. "A flatter management structure keeps employees involved in the decision-making process and in challenging themselves."

Providing tax-efficient packages, flexible working hours and the freedom to work from home are also effective retention strategies, adds Graaff.

Anja Hartman-Weitz, HR manager at Sage Group company Softline VIP, says companies need to engage with employees through structured internal communications, employee value proposition programmes and performance appraisals to keep them motivated.

Employees want to feel that their opinions are heard and that they are part of the process, she adds. "Having an environment where people have fun and feel that they are cared for is important, but it's not enough. You need to fit that into a formal programme."

ICT companies are starting to pay more attention to career paths for technical employees. In the past, excellent network engineers were keen to pursue big earning opportunities in management or sales, says DiData's Flint. They were often poorly equipped for these roles.

But with clear career progression goals for techies and the right earning opportunities, companies can not only retain their best technical employees but keep them working at the jobs they are best at doing, Flint adds.

Victoria Ward, HR director for Merchants, a customer management and business process outsourcer (BPO), says companies should identify those competences that are core to their continued success and build internal, stepped, incentivised leadership programmes around them.

Techies don't have to give up what they love to do. They just have to do it in ways that benefit the organisation progressively more, she says. Some will find the management options attractive – and leadership succession is taken care of.

The key to retention is recruiting the right person for the job at the outset, says Margriet Bonnet, a registered industrial psychologist working at business process management firm triVector. The employee should match the company's needs and culture.

People don't just need money – they also need a sense of meaning from their work, Bonnet says. Often an unhappy worker can be retained simply by moving him or her onto a different project.

Madelise Grobler, MD at Bytes People Solutions, says companies often expect new employees to hit the ground running with few opportunities to broaden their skills and gain experience.

To retain their people, companies should put coaching and mentoring programmes in place for new employees. Without a structured programme in place, a skilled or talented person may simply move elsewhere out of frustration, she says.