Cisco Networking Academy Program and Developing ICT Human Capital

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Agenda

• What are the issues?
  Changing role of ICT and convergence of technology
  Skill gap issue
  Lack of national initiative to build ICT capacity
  Focus on ICT in HE but not in HS

• How does Cisco NetAcad address those issues?
  • Case studies
  • Conclusions
  • Call to action
Networks and People

The Internet Is Empowering

Billions of people to communicate and collaborate using all forms of human expression—data, voice, video—without regard to location, whether at work, at home, at school or on the road.
From the Plumbing to the Platform

People Are Co-Creating, Collaborating and Communicating

On networks that inextricably link them to a human network of family members, friends, colleagues, customers and partners.
Demanding Marketplace, Impacting All

More Sophisticated Networking Skills

Skills for All Environments...
Homes, Schools, Streets, Offices

Inclusion...
Older, Unemployed, Under-qualified, Women

Shortages and Leapfrogging

Business Understanding

Work Ready Graduates

Talent Spotting...
Certifications

Heightened Pressure on Education Systems
Networking Top of the List for 10 Fastest-Growing Jobs

Network systems and data communications analyst

What they do: Assemble networks from the bottom up, from data to email and voicemail systems.

Why it's hot: More companies are building networks to speed office communications and create better access to data.

Pros:
- Telecommuting is often an option.
- The skills qualify for other technology work.
- Many small and medium-sized businesses are adding heavily to networking groups.

Cons:
- Jobs are very task-based, so a network problem could mean endless or mindless work.

JOB GROWTH THROUGH 2014
54.6%
IDC MEA Skills Gap Study 2006

- Covered 9 countries in the Middle East region, Pakistan, and South Africa
- Alarming Networking Skills shortage across key Emerging Markets
- In three years there will be a shortage of approx. 265,000 skilled people
- By 2009, demand will outstrip supply by 24% in Israel, 24% in South Africa, and 35% in countries surveyed in the Middle East region and Pakistan
- In the areas of IP telephony, security, and wireless networking, South Africa will have a projected gap of 30%
- **Nigeria** skill gap study in preparation for 2007
Major skills shortage in the ICT sector

By Thomas McMillan

The skills shortage in South Africa will soon ravage the Information and Communications Technology industry, according to a report which found that over 100,000 extra professionals will be needed by 2009.

Clive Fynn, Cisco Systems South Africa general manager, said: “The findings represent a call to action to governments, the private sector, educators and individuals to do more to address these needs.”

“We began feeling the crunch in the first quarter of the year,” he said. “If plans are not put into place now, technology adoption, business competitiveness and market growth will be at risk.”

Fynn said some institutions have recently begun offering networking-related subjects, and with 500,000 graduates currently unemployed nationally “we need to address how [students] choose career subjects at higher education level.” — With PRwire Bridge

Concern: A survey has found that 100,000 extra professionals will be needed in the ICT sector by 2009.

Skills gap may thwart SA’s tech boom

Hopes that liberalization of the telecoms sector will let SA become an international hub to catch up in the global economy could be thwarted by a severe skills crisis.

Firms operating in South Africa are finding that they are unable to implement and manage their networks. The skills shortage could damage government’s chance of achieving its growth targets, research house IDC has warned.

And while communities are working on some local training initiatives, they are still falling short of what is needed.

CISCO is working with the education ministry and the Western Cape government to try to influence the curriculum.

Bisness Day Online, Thursday, 6 July 2006, p. 12

SA needs 70,000 techies

Huge shortage of people with networking skills

By Samuel Tito

A shortage of techies is risk of IT blackout in 2010

Ana Montero

As the 2006 FIFA World Cup went off without any technical hitches in Germany, the information technology (IT) in SA is ringing alarm bells about whether it will be as hassle-free when the country hosts the sporting spectacle in 2010.

Spurred by the release of a report last week that found SA needs 110,000 networking professionals just to fill current vacancies in the market, commentators are concerned that South Africa could suffer in 2010.

Hamid says that focus on basic IT skills such as using word-processing, spreadsheet and e-mail packages, has led to the neglect of developing more advanced skills. “Had we not done the study, we wouldn’t have known that we now have 80,000 people, most of whom are working in basic IT skills. When we are looking at a shortage of 110,000 network professionals, that’s worrying.”

Willie de Wet, CTO of Markaplan, the deputy CEO of Business Connexion, the biggest outsourcer in SA, said: “We are seeing that training is a major issue — the lack of professional skills will lead to lost business.”

A major shortage in SA

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SA in dire situation with skills shortage of 100 000 in ICT sector

By Samuel Tito

The government identified the shortage of skilled people as a key issue that would impact its delivery of services. The forum was told that this was the case in the local and global context. The government was told that the number of skilled people would decrease because of migration of skilled people from South Africa.

To address this, the forum was told that there should be an increase in the number of skilled people. This could be achieved by providing incentives for people to stay in South Africa and also by providing incentives for people to come to South Africa.

The government should also create awareness of the importance of skilled people in the country.

The government was also told that there should be a change in the way that people are trained. This could be achieved by providing more practical training and also by providing more theoretical training.

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Finding the Right Skills is difficult

• 36% had hired networking engineers within the past 12 months

• 62% of these said it was difficult to find networking engineers with the right skills

• 60% of those who had hired struggled to find people with the right combination of skills

• 40% of those who had hired said the right skills too expensive

## Future Importance of Skills by Technology/Skills Area – South Africa

<table>
<thead>
<tr>
<th>Technology/Skills Area</th>
<th>More Important</th>
<th>Less Important</th>
<th>The Same</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross Technology</td>
<td>86%</td>
<td>0%</td>
<td>14%</td>
</tr>
<tr>
<td>PC HW &amp; SW</td>
<td>23%</td>
<td>32%</td>
<td>45%</td>
</tr>
<tr>
<td>Data Centre Applications</td>
<td>59%</td>
<td>14%</td>
<td>27%</td>
</tr>
<tr>
<td>Business Applications</td>
<td>73%</td>
<td>9%</td>
<td>18%</td>
</tr>
<tr>
<td>General Networking</td>
<td>23%</td>
<td>9%</td>
<td>68%</td>
</tr>
<tr>
<td>Network Design</td>
<td>64%</td>
<td>0%</td>
<td>36%</td>
</tr>
<tr>
<td>IP Telephony</td>
<td>91%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Security</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Wireless</td>
<td>95%</td>
<td>0%</td>
<td>5%</td>
</tr>
</tbody>
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Thinking about certifications, which of these elements do you believe to increase their value?

- Recognised by Government (40%)
- Backed by vendor (60%)

10 Years of The Cisco Networking Academy Program
The Networking Academy Program Today...

- 2 Million Students Impacted Since 1997
- 11,000 Academies
- 160 Countries
- 10 Languages
- 5 Global Partnerships with United Nations (UNDP, UNIFEM, ITU, UNWRA, UNV)

- 35,000 Instructors
- 50 Million Exams Taken
- + 200 partnerships with Government and NGOs
Networking Academy in Africa 2006

+350 Academies
+42,000 Students in Africa
50% Yr/Yr Growth
+100,000 Students attended since 2001

Academy report 30.07.06
Cisco provides:
1. Curriculum donation
2. Cost Recovery Training
3. Discounted Equipment
4. Virtual Community
5. Soft skill Training through partners like UNIFEM, DOT
6. Employability services

Institutions Provide:
- Facilities
- PC Labs
- Instructors
- Students
- Curriculum Integration
## Networking Academy Skills Sets

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCNP 1-4</td>
<td>CCNP</td>
</tr>
<tr>
<td>Network Security</td>
<td>Firewall Specialist</td>
</tr>
<tr>
<td>Fundamentals of Wireless LANs</td>
<td>Wireless LAN Support Specialist</td>
</tr>
<tr>
<td>CCNA 1-4</td>
<td>CCNA</td>
</tr>
<tr>
<td>IT Essentials II</td>
<td>CompTIA Server+ (when combined ITE 1 curriculum)</td>
</tr>
<tr>
<td>IT Essentials I</td>
<td>CompTIA A+</td>
</tr>
</tbody>
</table>
Many Pathways and Exit Points

University

College

High School

Fundamentals Courses

ITE 1

ITE 2

VDC Panduit

Career

CCNA

CCNP

Security

1 Advanced Routing

2 Remote Access

3 Multilayer Switching

4 Trouble Shooting

Routing

WAN

Switching

Wireless

Career

SMB Networking

Network Installer
Basic IT Support
System Admin

Career

Enterprise Networking

1120 Hours of Teaching
A Blended Learning Model

- Standards-based curriculum
- Embedded assessment and accountability
- e-Learning
- Hands-on labs
- Face-to-face instruction
- Critical, problem solving and collaborative thinking
- Skill- and outcome oriented approach
• Government, Private Sector and NGO (Close the Gap) working in Partnership

• Massive IT training need to support Africa’s first broadband optical network

• Network will enable education, e-health and ultimately prosperity

• 100 Networking Academies is the Government and Cisco Goal

• “ICT … a vital and essential tool for fighting poverty“

   H.E. Prime Minister, Meles Zenawi
Uganda, Makerere University

- **Growth**
  - High Student Enrollment
    - (2,000+ continuing students)
  - Advanced Curriculum (CCNP)
  - Diversified Curriculum (Wireless, ITE)

- **Private Sector Linkage**
  - Workforce Development Program
  - Private Sector Partners

- **Quality**
  - Softskills & Training for Instructors
  - Instructor Retention & Advancement Opportunities
  - Communication with other Academies

- **Sustainability**
  - Support of Administration & Gov’t
  - Sustainability Plan
  - Stakeholders/Partnerships

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**LDC Initiative Awards 2003-2005:**
- Highest Country Female Enrollment (Uganda)
- Highest Country Enrollment (Uganda)
- Highest Enrollment, Local Academy (Makerere University, ICS)
- Job Placement Award (Makerere University, ICS)
“Following my degree in computer science, I was interested in looking at the broader perspective of networking. I wanted to contribute towards the development of IT in South Africa, as well as try to bridge the gap between Africa and other countries with my IT skills”

Charmaine Dube

Female students in Cisco lab at University of Pretoria
Conclusions

- Tremendous demand for qualified capacity
- Huge interest from private sector to invest in Africa
- Existing, field proven models for national capacity
- NetAcad as a model to look at seriously
Call To Action

• Commitment to Public and Private Partnership

• Ownership and responsibility

• ICT Education Integration into current curriculum of HS & HE

• Let’s make a commitment out of this conference to graduate 100,000 ICT workforce in 12 months time!