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PRESENTATION AT CPSI CONFERENCE

THE POWER OF ICT TO REALISE
GOVERNMENT PRIORITIES

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Introduction

Although we have come a long way as a nation, South Africa is a country that is still in the throes of transition. The provision of decent work remains a priority. So does ensuring economic and social development and upliftment, combating the scourge of crime and delivering quality education and health services.

Today I'd like to talk to you about how information technology can help government address its priorities.

How technology can give schools and communities across the country access to affordable technology.

Empower government officials and departments with computer technology to make them more skilled and effective.

Make school-leavers and graduates more employable by giving them real-world skills and access to entrepreneurial ventures.

Challenge university students to be real inventors.

Make clinics more effective in delivering health-care services to the poorest of the poor.

Deliver services better than ever before, and do more with less in a time of scarce resources.

1. But let's start by talking about economic development, because it's central to everything that we'll be discussing today.

Promoting economic development has obviously always been a core goal for every government, and in a downturn it's more important than ever. But the kind of economic development needed today is very different from the past. Whether it's accelerating the recovery from the current downturn, or positioning to thrive in the 21st-Century global marketplace when recovery does take hold, countries must focus on creating world-class knowledge economies.

And this is particularly good news for developing economies, because the transformation from industrial and agrarian economies to knowledge economies is a great global leveler, and it is a transformation that technology can drive.

2. In the book, "The World Is Flat," Tom Friedman identified 10 forces that flattened the world, and nearly all of them were made possible by IT-based innovation.

These IT innovations include

- the PC-driven information revolution**
- the Internet**
- productivity, workflow and collaboration software**
- increasingly low-cost and ubiquitous digital devices**

What these innovations all have in common is that they are the building blocks of knowledge economies.

IT helps companies and governments increase efficiency and productivity, it contributes to network effects like lowering transaction costs and speeding innovation. The Internet promotes global trade by connecting buyers and sellers, and by cutting market entry costs. IT investments in youth can cause a shift toward higher skilled workers with higher wages. And, of course, a thriving IT industry itself is a key driver of economic growth.

Realising the immense potential of information technology as a driver of economic growth and development is even more critical right now. As the current crisis starts to resolve, new opportunities will emerge for countries that are leaders in innovation.

3. History shows that new technologies are born out of every downturn, in turn spawning some of the world's leading global companies.

Thomas Edison founded General Electric during the panic of the 1870s. Hewlett-Packard was launched with a \$538 investment during the Great Depression of the 1930s. And near the end of the recession of the mid-'70s, Bill Gates and Paul Allen founded Microsoft. In the years ahead, many new names will be added to that list ...with one key difference.

In those previous years, the resources needed to create breakthrough technology were largely available only to a select few in the most developed parts of the world. The IT era has now put those resources in reach of anyone with a great idea, no matter where they live. So with the help of IT, every country now has the opportunity to go head to head with established global competitors, and that just wasn't possible in the past.

But innovation and economic growth can't thrive in a vacuum. To make them broad-based and sustainable you need to solve fundamental issues such as education and healthcare. Without an education system that produces skilled workers, we can't create the pool of talent needed to compete globally, and without adequate healthcare, society as a whole will find it hard to thrive. Information technology can also play a key role in solving both of those problems.

4. How technology can help education

Let's look at education first. When you consider the world's education system, the first thing you notice are the extremes.

Nearly every school and college in the United States has Internet access.

Nearly all schools in the United Kingdom use interactive white boards.

Yet over 350 million primary and secondary age children worldwide don't attend school at all. And children in many countries get nothing beyond a basic primary education.

You'll also notice that today's classrooms aren't that much different from 100 years ago. Students still sit at desks taking notes on paper from teacher's lectures, who speak from the front of the room. And the way teachers teach hasn't changed much either. Productivity and collaboration software have made a huge impact in the business world but only have scratched the surface in education.

Mobile phones, instant messaging, social networks, and many of these technology revolutions are a big part of student's lives today, but almost totally absent from the classroom. So while technology has transformed how we live and work, it hasn't yet made much of an impact on how we learn. Why is that?

The No 1 reason is that information technology is only now starting to deliver solutions that meet the needs of every part of the education system. Students, teachers, parents, school administrators, and governments all have different requirements. As a result, information technology is still seen often as an overhead, rather than as an enabler by the education system. That system already is under immense pressure from growing student populations, teachers who fear rather than embrace the technology,

in fear that it will create even greater demands on their time, and of course, widespread budget cuts in the current environment.

5. For information technology to really get traction in education it must, from the outset, help education systems overcome these challenges. We're actually now at a point where IT can help.

Technology can broaden the reach of education from well-resourced, developed world systems to underserved communities, by utilising a new generation of digital devices, from tablet computers to low-cost cell phones.

It can enable relevant, personalised, and more engaging models of learning, with more interactive learning processes that stimulate and reengage students. You can compare this typical learning experience with that of the digital lives that the kids particularly in the rich world lead outside of the classroom today.

IT can give educators more insight and more time by optimising tasks that consume much of their time today, like routine grading, finding new course material, and tracking students' progress, and by using new kinds of personalised learning to meet the student's unique learning needs. IT can nurture powerful learning communities, as well, by enabling groups of educators to create and share great learning materials, and enabling students to reach out to peers and experts around the world, and it can support agile and connected school systems, systems that work more efficiently and deliver better outcomes.

We're already seeing some notable successes when we apply information technology in these ways. For example, Microsoft's Innovative Teacher's Network connects thousands of South African teachers to share ideas, practices, and professional development resources.

Our Partners in Learning Program provides 17 000 educators with resources, training and content. It reaches about 1.7 million students across South Africa.

Through strong partnerships and close collaboration with every part of the education systems, we can use proven real-world technologies to deliver immediate results, and to clear a pathway to the future of innovation. With the right combination of software, online services, and devices, we can put empowering technologies into the hands of every student, scaling the benefits of a 21st-century education quickly and affordably to as many

young people as possible. And as a result, we can start to flatten the inequalities that exist between the world's education systems.

6. Tackling the healthcare issue

South Africa's health ecosystem -- patients, providers, funders -- collectively face numerous and growing challenges. The first is access. Very few South Africans have adequate health coverage. Costs are increasing dramatically, impacting everyone from patients and providers to government funders. Healthcare gobbles up a huge portion of government's outlay -- and it is growing quickly. There is a huge shortage of qualified healthcare workers at virtually every level. The quality of healthcare systems varies widely.

But information technology is powering a shift in healthcare. The patient is moving to the center of the healthcare universe, and IT is empowering them with the information they need to take control of their well-being. Advanced software technologies enable data-driven approaches to medicine that shift priorities of healthcare from treatment and curing to prevention and long-term wellness.

Software can seamlessly connect a wide range of medical technologies, devices, and data sources to give patients, providers, and funders a complete picture of their health. IT also makes it possible for more medical care to take place at home rather than in costly hospitals. A growing range of online health resources and services will help cut costs and increase access, particularly in areas that currently lag behind in healthcare.

The technologies to make this happen are already emerging at companies like Microsoft.

For example, we're focusing on a new "hospital in a box" technology information system which enables fully integrated health data platforms to be delivered even in institutions that have little technology expertise.

We're delivering unified business intelligence system that aggregates all types of patient data from hundreds of sources, making it instantly available at the point of care.

We are rolling out consumer health platforms that offer a secure, shared data repository and online service for people to collect, store, gather, share and search for health-related information. Today these are primarily developed world solutions, but information technology will be even more

transformative in the developing market. In fact, IT can help flatten the global differences in healthcare standards and accessibility.

- 7. In our country, we can use information technology to take a low-cost, data-driven approach to healthcare from the outset, avoiding many of the mistakes made by the developed countries.**

We've seen great examples of this elsewhere in the world. The integrated information system developed by Colombia's Ministry of Social Protections is a great example. It aggregates information from insurers, providers, and hundreds of local and national agencies, dramatically increasing the quality and quantity of health and social services to 45 million citizens.

In Brazil, the State of Sao Paulo has developed a Web-based organ donation matching system, creating life saving efficiencies in matching donors with those waiting for the transplant. It's led to a 50 percent increase in transplants, and the state projects it will eliminate the waiting list for eye transplants by the end of 2009.

Imagine the savings and efficiencies that we could realise in South Africa with technologies like these. Imagine how much further we could make our tight health budgets go. How many more people could get access to high quality treatment?

We also expect low-cost devices powered by advanced software, and partnered with online services to revolutionize diagnosis and care even in the most remote areas. For example, researchers at the University of the West Indies, Trinidad and Tobago, are working on a project focused on diabetes and cardiovascular diseases that will use a cellular network to relay information to a server from patient monitoring devices. Advanced software will alert medical officers if immediate action is needed, and patients will receive advice via their cell phones. We can even use such tools in addressing a flu epidemic.

- 8. We need to understand better how IT can help transform development, education, and healthcare.**

We know there are no simple answers. Like education, healthcare is an incredibly complex issue, and no single entity is going to fix it alone. But by partnering with government, we believe we can help people live longer, healthier, and more fulfilling lives.

But to drive IT-related innovations, and effective IT deployments in areas like public health and education, you need a supportive public policy environment. Sound public policy provides the framework for innovation and sustainable economic growth. This is particularly crucial for entrepreneurs, who are the source of new ideas, and who are willing to take the kind of risks that result in new products, and markets, and ultimately a thriving IT sector.

The next few years will present a unique opportunity for South Africa to embrace the capability that these new technologies bring.

One of my favourite examples is one where we take the technologies of robotics, and we bring them together in order to create avatars -- models of humans, if you like -- that we can teach to do important tasks. Already today these robotics systems are being used to do very simple tasks, like arranging shuttle buses on the Microsoft campus in Redmond, Seattle.

But while today we're teaching this robot to do only administrative tasks, our dream for this robot is that in a few years, as the computer power increases, that we'll be able to have this robot be a doctor. And through that be able to deliver scalable technological means to bring healthcare, or personalised educational training, to millions of South Africans who today have no prospect of having rich world styles of healthcare or education delivered to them and their children.

It's these kinds of technological advances that to me are so exciting, and compelling, and we look forward to working with all of you to bring them to fruition in the future. So this is a time of both profound challenges, and real opportunity.

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Thank you.