

## Cloud computing ushers in a tech-driven transformation



(Source: Business Times, Singapore. May 27, 2010)

I'M THRILLED to travel to Singapore this week to celebrate Microsoft's twentieth anniversary in this country. Since we opened an office here in 1990, Singapore has become one of Microsoft's most important global centres.

The headquarters for our sales, marketing and operations for the entire Asia Pacific region, Singapore is the place where we manage manufacturing across Asia and it is the site of our newest data centre. From three employees in 1990, we have grown to more than 750, and in 2009, Microsoft software accounted for 1.5 per cent of Singapore's total exports.

Microsoft's experience in Singapore is both a reflection of the economic transformation that has taken place here during the last 20 years and a result of the strong strategic focus in Singapore on business competitiveness, educational opportunity and technical excellence in both the public and private sectors.

That strategic focus has made Singapore a leading centre for global commerce and finance, and a great example of the role that innovation can play in creating sustainable economic growth and prosperity.

It has been impressive to watch Singapore's progress during the last 20 years. It's remarkable that a nation of such a small relative size can play such a vital role in global high-tech manufacturing and international banking, and serve as such an important hub for travel, transportation and shipping.

But even more exciting to me than what Singapore has achieved so far is how well it is positioned for the future. Few places in the world understand better than Singapore how important information and communications technologies are to economic success or are doing more to utilise leading-edge advances to maintain a competitive edge.

Intelligent Nation 2015 (iN2015), the 10-year master plan of the Infocomm Development Authority of Singapore (IDA), is a great example. A blueprint for providing ultra-high-speed broadband connectivity to every home, office, and school, iN2015 includes the kinds of goals that every nation should aspire to achieve.

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The timing couldn't be better. The history of information technology has been punctuated by waves of intense transformation. The invention of the PC, the emergence of the graphical user interface and easy-to-use productivity software, and the rise of the Internet all set the stage for periods of rapid progress that saw dramatic changes in how we run our businesses, communicate, and learn about the world we live in.

Today, with the emergence of cloud computing, we are at the beginning of a new wave of technology-driven transformation. The focus on technical infrastructure and innovation exemplified by iN2015 gives Singapore an opportunity to be in the very forefront of this next generation of technology-driven transformation just as cloud computing reaches critical mass.

### **Huge impact**

I believe the impact of cloud computing will be as big as anything we've seen so far. By providing a platform for combining the convenience and power of smart digital devices with the computing and storage capacity of giant data centres, cloud computing is changing the way businesses and consumers access the power of computing in profound and important ways.

With cloud computing, launching a new business will be easier because start-ups will be able to utilise computing power as a service rather than having to make large capital investments in software and hardware. Companies will be able to adjust the amount of computing they use and pay for instantly and automatically as demand for their products and services changes. And any entrepreneur anywhere in the world will have the opportunity to compete for customers around the globe on nearly equal footing with even the largest enterprises.

I also believe there will be an unprecedented outpouring of innovation as people use the cloud to bring different kinds of information together in new ways.

At a simple level, we see this today in mobile applications that combine information about local businesses with geolocation data to enable mobile phone users to instantly create maps of nearby businesses.

This is just the beginning. It will enable scientists to bring vast databases of research together in new ways, speeding their ability to make progress in a wide range of vitally important fields including healthcare, climate change and alternative energy. As governments make accessible the information they amass about everything from the state of the economy to weather conditions to demographics, citizens are building valuable new services that are the foundation for new businesses.

### **Power of the cloud**

At Microsoft, we're committed to delivering the power of the cloud to customers here in Singapore and around the world. From Windows Azure, our cloud computing platform, to Windows 7, Windows Phone 7, to Office 2010 - which provides a unified experience across

the PC, phone and browser - we've built a new generation of products that are designed specifically to take advantage of the cloud.

Already, our cloud-based services are deeply woven into the fabric of the day-to-day lives of millions of people. More than 500 million people around the world have signed up for our cloud-based Windows Live services and more than 350 million use Hotmail. More than one million businesses - including a majority of the world's top telecommunications firms, banks and pharmaceutical companies - are using Microsoft's cloud-based online business services.

Here in Singapore, adoption of cloud technologies has been particularly rapid. Singapore Airport Terminal Services (a leading provider of airport services) and RSVP Singapore (a non-profit organisation that encourages seniors to be active in their communities) are just two examples of forward-looking organisations that are taking advantage of the cloud to improve operations, reduce costs and improve access to advanced technology capabilities.

And Inhone Academy, which provides online learning and training systems for businesses, is using the Windows Azure cloud computing platform to make more than 3,000 online courses easily accessible through its brand- new Inhone NetAcademy.

Created in response to the Singapore government's call to improve workforce productivity and technical skills, Inhone NetAcademy uses cloud technology to provide business professionals, managers, engineers and technicians with a wide range of training materials that can help them improve their value in the workplace.

Meanwhile, schools across Singapore are leading the way in using cloud technologies to create dynamic, personalised learning environments for students. One great example is Ngee Ann Secondary School, which was an early user of Microsoft's Live@edu, a browser-based tool for communications and collaboration in the classroom. Today, Ngee Ann Secondary School and Microsoft are working together to create a 'Living Lab', where teachers, students and researchers can come together to use the cloud to develop new breakthroughs in education technology.

Once every decade or so, advances in technology emerge - and merge - to create a wave of change and opportunity. It's clear to me that Singapore intends to be in the forefront of this next great wave of technology-driven progress. From the government's strong focus on advanced infrastructure to the rapid adoption of cloud services in businesses and schools, Singapore is leading the way. I look forward to returning to Singapore soon to see the innovation and growth that will result.

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