ICT, The Strategic Enabler Towards A Knowledge Based Society

Shaik Umar, Centre Director, Infocomm Development Authority of Singapore

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Agenda

> Introduction to IDA and Singapore

> Intelligent Nation 2015 (iN2015)

> Sectoral Transformation:
  - Transforming the Government
  - Transforming the Supply Chain and Logistics Sector
  - Transforming the Education Sector
  - Transforming the Society
# About IDA

A single government agency responsible for the **planning, policy, regulation** and **industry development** of ICT in Singapore

## > Infocomm Master-Planner and Developer
- Formulate national infocomm masterplans, policies and technology road maps to leverage ICT for economic development and social growth

## > ICT Industry Champion
- Create a conducive, innovative, and competitive infocomm environment that is both pro-consumer and pro-business
- Develop a vibrant infocomm ecosystem
- Develop an infocomm savvy and globally competitive workforce

## > Chief Information Officer to Government
- Architect e-government plans and manage infocomm systems deployment in the government
## About Singapore

<table>
<thead>
<tr>
<th><strong>Land Area</strong></th>
<th>707 sq km</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>5.18 million (Resident 3.8 million)</td>
</tr>
<tr>
<td><strong>GDP</strong></td>
<td>S$327 billion (US$262 billion)</td>
</tr>
<tr>
<td><strong>GDP Per Capita</strong></td>
<td>S$63,050 (US$50,123)</td>
</tr>
<tr>
<td><strong>Literacy Rate</strong></td>
<td>96.1%</td>
</tr>
<tr>
<td><strong>Labour Force</strong></td>
<td>3.14 million</td>
</tr>
<tr>
<td><strong>Government Agencies</strong></td>
<td>15 Ministries, 63 Statutory Boards</td>
</tr>
<tr>
<td><strong>Public Sector Officers</strong></td>
<td>&gt; 120,000</td>
</tr>
</tbody>
</table>
Transforming the Nation
ICT as a strategic enabler to drive unlimited possibilities

1981 - 1985
National Computerisation Plan

1986 - 1991
Singapore National IT Plan 1986

1992 - 1999
IT2000

2000 - 2003
Infocomm 21

2003 - 2006
Connected Singapore

2006 - 2015
Intelligent Nation

… Creation
… Connectedness
… Convergence
… Connectivity and Content
… Communications
Six National Strategic ICT Plans

- Leveraging Infocomm for Innovation, Integration and Internationalisation
- Unleashing potential of Infocomm to create new values, realise possibilities & enrich lives
- Developing Singapore as global Infocomm Capital, e-Economy and e-Society
- Transforming Singapore into an Intelligent Island
- Extending government systems to private sector e.g. TradeNet, MediNet, LawNet
- Civil Service Computerisation Programme Developing IT industry & IT manpower
## Singapore ICT Landscape

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households with access to computers</td>
<td>80.0%</td>
</tr>
<tr>
<td>Internet Penetration to Households</td>
<td>76.0%</td>
</tr>
<tr>
<td>Broadband Penetration to Homes</td>
<td>152.1%</td>
</tr>
<tr>
<td>Broadband Penetration to Businesses</td>
<td>87%</td>
</tr>
<tr>
<td>Mobile Phone Penetration</td>
<td>137.6%</td>
</tr>
</tbody>
</table>
Singapore ICT Landscape

### Infocomm Industry

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infocomm Industry Revenue (S$ billion)</td>
<td>62.7</td>
<td>70.4</td>
</tr>
<tr>
<td>Annual Growth (%)</td>
<td>8.0</td>
<td>12.2</td>
</tr>
<tr>
<td>Domestic Revenue (%)</td>
<td>35.5</td>
<td>33.8</td>
</tr>
<tr>
<td>Export Revenue (%)</td>
<td>64.5</td>
<td>66.2</td>
</tr>
</tbody>
</table>

### Infocomm Usage

#### Households and Individuals

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households with Access to Computer (%)</td>
<td>83</td>
<td>84</td>
</tr>
<tr>
<td>Households with Internet Access (%)</td>
<td>81</td>
<td>82</td>
</tr>
</tbody>
</table>

#### Business

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Broadband Adoption (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>68</td>
<td>73</td>
</tr>
<tr>
<td>&lt; 10 Employees</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td>10 to 49 Employees</td>
<td>85</td>
<td>89</td>
</tr>
<tr>
<td>50 to 199 Employees</td>
<td>95</td>
<td>99</td>
</tr>
<tr>
<td>200 &amp; Above Employees</td>
<td>100</td>
<td>99</td>
</tr>
</tbody>
</table>
International Recognition

**WASEDA University World eGovernment**
- 2012: 1st since 2009

**THE WORLD BANK**
- Ease of Doing Business
  - 2012: 1st since 2007

**Economist Intelligence Unit**
- **eReadiness**
  - 2010: 8th

**The Economist**
- **Benchmarking IT Industry Competitiveness**
  - 2010: 8th

**The Global Competitiveness Index**
- 2011: 2nd

**Global Information Technology Report**
- 2012: 2nd

**World Competitiveness Yearbook**
- 2011: 3rd

**United Nations E-Government Survey**
- 2012: 10th

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iN2015 < An Intelligent Nation, a Global City, powered by Infocomm
iN2015 Desired Outcomes

> Enriched lives through infocomm
> Enhanced economic competitiveness and innovation through infocomm
> Increased growth and competitiveness of the infocomm industry
iN2015 Framework

Sectoral Transformation of Key Economic Sectors, Government and Society

- Financial Services
- Healthcare & Biomedical Sciences
- Supply Chain & Logistics
- Digital Media & Entertainment
- Education & Learning
- Tourism, Hospitality & Retail

Ultra-high Speed, Pervasive, Intelligent and Trusted Infocomm Infrastructure

Globally Competitive Infocomm Industry

Infocomm-savvy Workforce and Globally Competitive Infocomm Manpower
Transforming the Government

To be an Integrated Government that delights customers and connects citizens through infocomm
Transforming Government Services

**eCitizen:**
Govt-to-Citizen Portal
• 1,600 government’s e-services

**Online Business Licensing Service:**
Govt-to-Business Portal
• Over 80 licensing services online
• Over 30,000 business applications online annually

**SingPass:**
One password to access govt e-services
• Over 3 million registered users
• Over 31 million transactions annually

**One Unique Identification Number** for Each Entity to Interact with Government Agencies
• Over 400,000 entities (companies, societies, associations etc.)

**M-Gov:**
• Over 300 mobile govt services
• Top 20 “Innovations in Transforming Govt Award” by Harvard University & IBM
• Top 10 finalist for CAPAM International Innovations Award

To be a Collaborative Government that co-creates and connects with our people

Cloud Computing

Big Data

Social Media
Transforming the Supply Chain and Logistics Sector

World’s first nationwide trade clearance system integrating 35 controlling units’ requirements with 7,000+ business rules serving 12,000 users with a volume of 30,000 – 40,000 trade declarations daily.
Transforming the Education Sector
EdVantage
Empowering Learners and Engaging Minds, through Infocomm

<table>
<thead>
<tr>
<th>Today</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher centric</td>
<td>Learner centric</td>
</tr>
<tr>
<td>Learning in the classroom</td>
<td>Learning beyond the classroom</td>
</tr>
<tr>
<td>Didactic learning</td>
<td>Collaborative and investigative learning</td>
</tr>
<tr>
<td>Reliance on textbooks</td>
<td>Reliance on “real life” or virtual experience</td>
</tr>
<tr>
<td>Local learning resources and expertise</td>
<td>Global learning resources and expertise</td>
</tr>
</tbody>
</table>

Learning Paradigms
- Self-Directed Learning
- Collaborative Learning
- 21st Century Learning
Edvantage Approach

School-wide Transformation
Transform the learning and teaching experience in the whole school

Innovation Generation
Experiment new areas of education technology

Mass Deployment
Support MOE in rolling out systems to all schools
Innovative curriculum, pedagogies and assessment programmes for engaged learning

http://www.youtube.com/watch?v=gWGeluaneWU
FutureSchool@Singapore

Beacon Primary School
Diverse digital learning spaces, holistic development

Hwa Chong Institution
Independent and diverse learning in a borderless world

Canberra Primary School
Play as pedagogy through immersive games and interactive learning trails integrated curriculum

Jurong Secondary School
e-problem-based learning, media literacy, communities of practice, assessment of 21st Century skills

Crescent Girls’ School
Student-centric learning, teaching and assessment, integrated curriculum

5 FutureSchools
15 industry partners
50 products developed
6 products used by 100 schools

Launched in 2007
FutureSchool@Singapore Phase 2

- **A.I.C.B (Artificial Intelligence Chat Bots)**
  - Provide learning environment for Self-directed Learning through Inquiry and Socratic questioning

- **Scenario-Based Learning**
  - Simulate authentic learning scenarios
  - Demonstrate understanding of concepts

- **SAIリング (Scaffolded Algorithmic Inquiry-based Learning)**
  - Provide learning & assessment system using Cognitive Diagnostic Assessment approach
  - Assess students’ progress on content mastery
  - Provide scaffolding agent to guide learning

**Timeline**
- Public Announcement: Mar 2012
- Proposal Submission: May 2012
- Project Award: Sep 2012
- Expansion to 5 others school 2 classes each: Sep 2013
Transforming the Society

Increasing infocomm sophistication for a vibrant digital lifestyle

Transform people sector organisations
Encourage sophisticated use of infocomm
Transforming the Society

Digital Opportunities for All and Building an iNclusive Digital Society

Senior Citizens
Needy Students
People with Disabilities

Silver Infocomm Initiative
Neu PC Plus
Infocomm Accessibility Centre initiative

CitizenConnect to provide Internet access and personal onsite support to those with difficulties transacting online

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"Didn't you get my e-mail?"