

**November 2012**

**FACT SHEET**  
***Infocomm Manpower Development Roadmap v2.0***

**Background**

Developments in the infocomm industry globally and within Singapore over the past few years require a strategy change to ensure the continued competitiveness of Singapore's infocomm manpower. The exponential increase in data and information being created and exchanged over the Internet during the last two years have presented opportunities for both consumers and businesses to extract valuable insights and analysis from internet based computing platforms such as cloud computing and business analytics. With the surge in consumer-developed applications on smartphones, businesses have also started to leverage on consumer-centric, social media applications such as Facebook to reach out to consumers. This convergence of enterprise and consumer infocomm areas means that new skills, such as Web 2.0 and mobile application development, will also be sought by businesses.

In addition, Singapore has a role to play as a leading infocomm hub in Asia. Infocomm multi-national companies ("MNCs") such as HP Labs, IBM, NTT Communications and Oracle have hosted critical IT functions in Singapore to serve the region. Singapore also serves as a hub for non-infocomm MNCs such as AXA Tech, BNP Paribas, Citibank, Daimler, Deutsche Bank and P&G, to deliver their IT services to the region and beyond. This has led to an upward shift in the skill level and seniority of infocomm professionals needed such as project managers and software architects.

Over the past years, IDA has also attracted high-tech start ups into Singapore and nurtured a vibrant infocomm start-ups community. Increasingly, various economic sectors have begun leveraging on infocomm to expand and increase their business capabilities and revenues. Thus, it is critical for Singapore to have a sufficient supply of infocomm professionals with deep infocomm and sector-specific domain skills.

**Objectives and Strategies of MDEV 2.0**

The objective of the Infocomm Manpower Development Roadmap v2.0 ("MDEV 2.0") is to develop Singapore's local infocomm workforce for high-end, high value-add jobs, in order to meet the developments of the industry. MDEV 2.0 aims to achieve three new desired outcomes:

- A greater share of talent for infocomm;

- Develop talent with deep infocomm skills, the ability to exploit infocomm and agility to respond to industry shifts; and
- Singapore's infocomm manpower profile is better aligned to Singapore's role as a global hub.

MDEV 2.0 seeks to employ the following five strategies to achieve its outcomes:

a. **Develop World-Class Infocomm Education**

Develop a vibrant and sustainable infocomm education landscape at both pre-tertiary and tertiary levels through forward-looking curriculum to deepen students' understanding and application knowledge; healthy pipeline of students; and able computing teachers;

b. **Groom Infocomm Talent and Leaders**

Expand talent attraction and development efforts to cover pre-tertiary level and all infocomm students at the university level through closer industry collaborations (e.g. more internships and project work);

c. **Generate Curiosity, Interest and Passion for Infocomm**

Generating curiosity, interest and passion for infocomm amongst both infocomm and non-infocomm students as well as key influencers (e.g. parents and teachers);

d. **Build Professional Capability and Deepen Skills**

Moving from skills upgrading to building and deepening infocomm skills in new and emerging areas; and

e. **Build Strategic Infocomm Capabilities for Sectoral Transformation**

Develop a pool of 'hybrid' professionals (i.e. infocomm professionals with good sector knowledge) for key economic sectors.

## Highlights of MDEV 2.0

### *Strategy 1: Develop World-class Infocomm Education*

- Revised Computing Syllabus for 'A' Levels (H2 Computing), focusing on computational thinking, will be introduced to JC1 students from 2012. A key objective of the new syllabus is to develop in students, creative computing solutions to real-world problems which mirror those that students see around them. This revised computing syllabus has been introduced in January 2012.
- Computer Science Reloaded (CS Reloaded) Programme to be offered to all pre-tertiary students. IDA and its partners will develop and deliver courses in computational thinking and computer science concepts. This will help to deepen their infocomm skills. Since April 2011, 711 students have taken part in the CS Reloaded programme.

- Computing Teachers Development Programme to build a pipeline of able computing teachers at the pre-tertiary level. 20 computing teachers will benefit from the programme over four years. Since April 2011, 21 teachers have been trained under the Computing Teachers Development Programme.

### *Strategy 2: Groom Infocomm Talent and Leaders*

- IDA Junior College Computing Awards to attract outstanding 'O' level students to take up H2 Computing. Award recipients will have opportunities to attend computer science workshops held by top overseas institutions to deepen their infocomm knowledge and to participate in industry attachments. 100 awards are to be given out over four years. The first batch of IDA Junior College Computing Awards was presented to 19 students in April 2012.
- Enhanced Learning in Information Technology Plus (ELITE) Programme to groom top first-year infocomm undergraduates (for the entire duration of their university studies). The ELITE programme will provide more emphasis on company internships and project work. ELITE will also act as a flow-through mechanism for the IDA JC Computing Award students. 500 students are expected to benefit from the programme. IDA will also look to provide similar ELITE opportunities to the remaining cohort. Since April 2011, 264 students have taken part in the ELITE programme.
- National Infocomm Scholarship (NIS) to develop infocomm leaders and ensure a future pipeline of talent for the infocomm industry. The NIS is open to students who have completed their junior college or polytechnic studies and are keen to pursue a fulltime infocomm-related degree in either a local or foreign university. Since the programme started in 2004, 239 students have received the NIS.
- Integrated Infocomm Scholarship (IIS) to attract outstanding 'O' level students who are interested in pursuing infocomm studies from polytechnic through to university level, and subsequently pursue an infocomm career. Since the programme started in 2009, 100 students have received the IIS.

### *Strategy 3: Generate Curiosity, Interest and Passion for Infocomm*

- "IT Exposed" Programme to expose infocomm club students to new computing concepts and technologies via courses delivered by industry partners such as Apple, Adobe and Microsoft and Institutes of Higher Learning. 2,000 infocomm club students will be able to benefit from this programme over four years. Since April 2011, 595 students have taken part in the "IT Exposed" programme.

- Enhanced Infocomm Clubs Programme to provide students the opportunity to pursue their interest in infocomm, acquire infocomm skills and be engaged in the larger infocomm student community via the Ministry of Education's (MOE) Co-Curricular Activities (CCA) Framework. There are now about 270 Infocomm Clubs at the primary school, secondary school and junior college level nationwide.
- National Infocomm Competition (NIC) to inculcate interest in infocomm among students and nurture talent at an early age via a year-long infocomm competition held annually that allow students to hone their skills and showcase their talent in infocomm. In 2012, the NIC will be introduced at the Primary School level with a new set of challenges. Singapore student representatives competing at international leg of competitions will also receive support from IDA.

#### *Strategy 4: Build Professional Capability and Deepen Skills*

- Company-Led Training for Fresh Professionals (CLT) Programme to fast-track fresh professionals in infocomm roles to take on specialist level jobs by providing them with in-house training with industry players. 200 entrant level professionals are targeted for this programme over four years.
- Critical Infocomm Technology Resource Programme Expanded (CITREP Expanded) to expand upon the current CITREP training incentive programme to cover new and emerging areas (e.g. cloud computing, business analytics, green ICT). This aims to deepen capabilities of infocomm and non-infocomm professionals in critical and emerging infocomm areas and business domain understanding. To emphasise the importance of project-based training, training providers will be eligible for higher course-funding levels of up to 70 percent for courses in which the project work component accounts for at least 30 percent of the course. IDA will subsidise training for 16,000 trainees to undertake courses imparting such skills over four years. Since April 2011, there have been more than 5,000 trainees for CITREP Expanded.
- Internet of Knowledge (IOK) Capability Development Programme - To bring about capability development in the area of cloud computing and business analytics, IDA will collaborate with leading players in these fields as well as local and overseas IHLs to develop business analytics and cloud computing specialisation/electives in degree and diploma programmes. The IOK Capability Development Programme will also facilitate attachments and training programmes for over 1,000 infocomm professionals and students. Since April 2011, 540 professionals have taken up the IOK Capability Development Programme.
- National Infocomm Competency Framework (NICF) - The NICF is a national infocomm competency roadmap which guides infocomm professionals in

assessing the types of skills and competencies required for various infocomm jobs, and to acquire these skills through accredited training providers. The latest version of the NICF 2011 was launched in July 2011, comprising a total of 312 job roles and 587 competency units. The NICF has also been updated to cover new and emerging areas such as cloud computing, business analytics, green computing, next generation networking and service innovation design and education IT. IDA and WDA have also jointly established four Continual Education Training (CET) centres to develop and launch NICF accredited courses. Over 6,500 professionals have been trained through these centres.

- Infocomm Leadership and Development Programme (iLEAD) - The iLEAD programme aims to build a pipeline of infocomm experts in high-end, strategic growth areas (i.e., application development, cloud/grid computing, infocomm security, network engineering, business analytics and infocomm in business domains) through local and overseas attachments and specialised overseas courses and certifications. Some of the companies which have participated in iLEAD include NCS Pte Ltd, Singtel Ltd, Brandtology Pte Ltd, GTW Holdings Pte Ltd and Smoov Pte Ltd. A total of 18 companies have been approved under iLEAD pilot to train 54 trainees. In 2012, Centres of Innovation, R&D Centres/Research Institutes and Academic Institutions can also qualify to be iLEAD “Centres of Attachment” to also offer opportunities for project work, training and mentorship to infocomm professionals under the iLEAD programme.

#### *Strategy 5: Build Strategic Infocomm Capabilities for Sectoral Transformation*

- Hybrid Skills Development Programme (HSP) to provide professionals with the skills and expertise to develop relevant infocomm solutions for businesses for four key economic sectors (i.e. financial services, healthcare, logistics and hospitality and tourism). IDA will appoint training providers to develop specialised and collaborate with reputable overseas institutions to help produce professionals who are able to transform businesses in key economic sectors with infocomm. 2,000 professionals are to be trained under this programme over four years. Since April 2011, 158 professionals have taken up the HSP.

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#### **FOR MORE INFORMATION**

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