Institute of Policy Studies

IPS Closed-Door Discussion: "The Digital Economy and Challenges in the Process of Transformation"

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THE INSTITUTE OF POLICY STUDIES (IPS) organised a closed-door discussion (CDD) titled "The Digital Economy and Challenges in the Process of Transformation" on 20 July 2017. The following are summaries of presentations from the CDD. A more comprehensive report will be compiled and released at a later date. The presentation slides can be accessed here.

Smart Nation: A Practical Approach
Chan Cheow Hoe
Deputy Chief Executive & Government Chief Information Officer
Government Technology Agency of Singapore

Mr Chan described the Smart Nation initiative as a people-centric endeavour, to seek technological solutions that combine combining government services, saving administrative

costs, and helping businesses. It is meant to help process data in a convenient, fast and cost-effective way.
Mr Chan also highlighted challenges to the initiative. First, Singapore has a general lack of suitably skilled developers for such solutions. Next, costs of technology — particularly on cybersecurity — is likely to continue rising sharply in the future. Moreover, the public and private sectors in Singapore have been relatively slow to change, which poses problems for all.

The Impact of AI to the Digital Economy and Security
Dr Simon See
Chief Solution Architect & Director
NVIDIA AI Technology Centre and Solution Architecture and Engineering

The capabilities and adoption of Artificial Intelligence (AI) are increasing daily. Dr See identified potential cybersecurity issues, such as viruses with the ability to morph, and to crack all kinds of digital security. AI-run programmes were also shown to already be able to fake video content – manipulating images and changing the content of verbal speech.

Digital Transformation: An Exhausted Trend
Dr Ori Sasson
Director
Simulation Software and Technology (S2T) Pte Ltd

Dr Sasson put forth the notion that the digital economy and the resultant transformation have already happened. The question remaining then was if there was sufficient thought behind government schemes to reflect that, citing low scheme take-up rates among SMEs.

Dr Sasson also flagged several risks related to the digital economy. For instance, in an online economy, mechanics such as Google Adwords and Google's proprietary search engine ensure that larger companies will hold an advantage over smaller companies. In such an economy, economies of scale will become more important than ever. New technology might also cut out middlemen in many supply chains, creating deflationary pressure in the economy. Existing service providers will also face problems as intermediaries are cut.

Challenges of SMEs in Applying AI to Data Analytics
Irene Boey
Consulting Director
Integral Solutions (Asia) Pte Ltd and
Vice President
Strategies & Development
Association of Small and Medium Enterprises (ASME)

Ms Boey's presentation described how AI has been proven to help SMEs improve business performance across all sectors. She also highlighted that SMEs facing tighter profit margins often allocate their limited resources to operational issues, rather than investing in AI and data analytics, of which they have no familiarity with.

She suggested that the government would need to provide specific incentives to encourage SMEs to transform their business models through AI and analytics solutions. First, targeted practical education programmes for SMEs to gain knowledge could be run. Second, the government could build on programmes such as SMEs Go Digital, placing AI and Data Analytics as a standalone government assistance programme. Finally, there could be schemes incentivising solution providers and successful SMEs to aid other SMEs, improving the cycle of adoption.

Is a Skill Gap Limiting Singapore's Transformation into the Land of Innovation?
Dr Mark Shmulevich
Chief Strategy & Operations Officer
Acronis

Dr Shmulevich said Singapore would be starting from a very good base with which to take advantage of the digital economy. He, however, highlighted the difficulty of developing software products in Singapore, with many companies developing their solutions elsewhere. He attributed this primarily to the difficulty of hiring suitable local talent. More specifically, while Singapore did not seem to lack people of engineering ability, there is a noticeable lack of talent among Singaporeans as project managers, able to think of the big picture and innovate simultaneously.

Ultimately, he was of the view that Singapore has had a relatively strong emphasis on applied skills, potentially at the cost of traits like innovation and creativity in the Singaporean worker. He suggested that an education that gives equal weight to both applied and non-applied fields could perhaps improve the talent situation.

Question-and-Answer: Summary

The following are selected themes from the discussion segment.

Lack of Coordination: A lack of coordination among the various government agencies and the private sector was brought up several times. Participants said that in sectors such as healthcare, ownership of personal data across organisations or departments remained an obstacle to effecting medical treatment. Simple issues such as the installation of cameras on Orchard Road were also made complicated, with a participant citing how Orchard Road currently has multiple sets of cameras from different government agencies, all seeking to monitor their specific areas.

SMEs Missing the Wave: A participant said that SMEs cannot track the sheer number of ongoing initiatives. The government could appoint a single government agency to focus on speeding up the progress of initiatives. The participant added that many companies have folded while waiting for the related public initiative to be launched.

SMEs' Need for Guidance: Many SMEs are also wary of solution vendors, finding it hard to discern if the latter's products were beneficial, or if they were simply looking to make a sale.

SMEs Mentored by Large Companies: A participant disagreed that smaller companies should partner with larger companies in coming up with technology solutions. Large companies were sometimes too slow and set in their ways, and this made it very difficult for small companies to collaborate with them.

Government Needs to be More Accountable: It was observed that the government was slow in certain dealings with the private sector. In reply, it was stated that the possibility of fraud necessitated strict auditing for reasons of accountability. The government also hopes to speed up future processes, through ideas such as the Accreditation@IDA scheme where independent third-party evaluation of promising technology is done, putting them in a "green lane" for government procurement.

Government's Difficulties in Open Sourcing Solutions: The government seeks to adopt open-source sharing of its software solutions and data, but generally require time and resources to ensure that the appropriate legal clearance is achieved through entities like the Attorney-General's Chambers.

Moving Away from a Skill-Centred Education: Many participants felt that Singapore's expertise at "applied" education was a handicap, with skills emphasised over creativity. SkillsFuture was seen as beneficial for the teaching of applied skills for more experienced workers, but is also unable to bridge the gap in fostering creativity, a skill that is likely to be more highly valued in the digital economy.

Policy Recommendations

Education: Training around 200 people each year specifically in deeper skills relevant to the digital economy, before releasing them into the job market. It was suggested that this pool of people would be able to attract companies to stay in Singapore by dint of their potential for innovative uses, as compared to now whereby it was said that very few companies chose to develop their solutions in Singapore.

Pre-Validating Business Solution Vendors: It was said that many SMEs did not know which solutions providers to trust. A method of validating or maintaining a curated list of trusted solutions vendors would therefore be essential in helping SMEs to upgrade their capabilities.

Government's Technology Roadmap for SMEs: A participant briefly described the government's intention to engineer a Tech Roadmap for SMEs leading into the future, for SMEs of all sizes and industries.

Encouraging Private Sector Digital Economy Solutions: The government could work directly with experienced practitioners and local SME solution providers to successfully transform companies. Potentially successful endeavours would be aimed at inspiring SMEs to leverage on AI to transform their business.

Encouraging SMEs to Adopt Data-Driven Processes: SMEs need to buy into the digital economy by adopting practices such as capturing relevant data through their operations, and then how to utilise that data to sharpen their competitive edge. To that end, an AI and Data Analytics-focused government assistance programme could be formed to encourage SMEs to leverage data to transform businesses.

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If you have comments or feedback, please email ips.update@nus.edu.sg