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## ASEAN-India Cooperation in Information and Communications Technology

*India's Prime Minister Narendra Modi will visit Singapore from 31 May to 2 June 2018 to participate in the annual Shangri-La Dialogue. While international relations and security remain important foreign policy imperatives for India, Modi is also keen to enhance economic cooperation with Singapore and the Southeast Asian region. One sector of particular interest to the Indian prime minister is digital connectivity. The 'Digital India' programme has been successfully incorporated in several of India's economic initiatives. Digital connectivity has also become a serious agenda in the Association of Southeast Asian Nations (ASEAN)-India relations in recent times. This paper discusses the latest digital developments and collaborations between India and ASEAN, with particular references to the Smart Cities. It concludes by outlining the limitations that both sides need to address in this sector.*

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### Introduction

India's Prime Minister Narendra Modi will visit Singapore from 31 May to 2 June 2018, primarily to participate in the Shangri-La Dialogue. While he is set to focus on security and

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strategic issues, Modi is also likely to push his economic agenda during his visit, keeping in line with India's broader 'Act East' policy. He is particularly keen on transforming India by enhancing cooperation in digital connectivity with Singapore and the other Association of Southeast Asian Nations (ASEAN)-member states. Domestically, he has achieved some degree of success in this area through the Digital India, which has complemented a number of his economic programmes. Digital India is a domestic flagship programme that aims to boost digital infrastructure, such as a broadband highway, universal access to mobile connectivity and a nation-wide e-governance plan.

There have been positive developments in information and communications technology (ICT) cooperation between India and ASEAN in recent times. During the ASEAN-India Connectivity Summit in New Delhi in December 2017, both sides emphasised powering digital and physical linkages for Asia in order to attain maximum benefits in cross-border production chains.<sup>2</sup> In a two-day ASEAN-India Senior Officials Meeting in Hanoi on 5 and 6 April 2018, this agenda was again brought up by Modi, this time in the form of a potential proposal to launch initiatives such as a digital village in Cambodia, Laos, Myanmar and Vietnam, alongside training courses and scholarships to exchange technology and telecommunication insights.<sup>3</sup> A month later, the Ministry of Electronics and Information Technology in India issued a press statement, highlighting plans to establish 700 DigiGaon (Digital Villages) equipped with WiFi in order to link these remote villages to various e-services under a nationwide Digital India programme.<sup>4</sup>

Similarly, the ASEAN side has expressed great interest in India's digital developments. Singapore's Minister for Education, Ong Ye Kung, highlighted a number of technological developments in India, such as the Aadhaar initiative, a nation-wide biometric identification system that aims to centralise validation and verification of the citizens' data, ranging from public health to the banking and financial technology sectors, during his address at an international conference organised by the Institute of South Asian Studies in Singapore in

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<sup>2</sup> Suyash Desai (2017). ASEAN and India Converge on Connectivity. <https://thediplomat.com/2017/12/aseanand-india-converge-on-connectivity/>. Accessed on 7 May 2018.

<sup>3</sup> Vietnam Net (2018). ASEAN-India Senior Officials' Meeting held in Hanoi. <http://english.vietnamnet.vn/fms/government/198631/asean-india-senior-officials--meeting-held-in-hanoi.html>. Accessed on 7 May 2018.

<sup>4</sup> Press Information Bureau, Government of India: CSC to reach 2.50 lakh gram panchayats and 700 Digital villages to be established by the year end: Union Minister of Electronics & IT. <http://pib.nic.in/PressReleaseDetail.aspx?PRID=1532879>. Accessed on 23 May 2018.

April 2018. Such a development at a larger scale, he elaborated, served as a golden opportunity for Singapore and South Asia.<sup>5</sup>

With expectations of more India-ASEAN collaborations in this digital-physical aspect, this paper discusses the latest digital developments in India and ASEAN, with particular reference to the development of the Smart Cities. It also outlines the existing gaps that cross-border actors need to address so as to strengthen this increasingly important area in India-ASEAN partnership.

## **ICT Developments in India**

Since 2015, Digital India has seen significant developments. At its base, the Aadhaar has achieved at least 80 per cent registration of India's 1.39 billion people since its launch in 2009. As a result, Aadhaar-linked facilities and day-to-day applications have emerged, such as DigiLocker in Maharashtra, vehicle registration in Andhra Pradesh and even ticketing for temple admissions in Andhra Pradesh.<sup>6</sup>

At the governmental level, the Aadhaar initiative, as part of Digital India, also complemented a number of other existing government programmes and agencies. For example, Digital India complements the Ministry of Health and Family Welfare in initiating an Integrated Health Information Platform for electric health recording across India's citizens. Digital India also works with the Ministry of Urban Development to launch a National Heritage City Development and Augmentation Yojana scheme in conservation efforts and development of recognised heritage cities. This is through the exploitation of centralised data for Geographical Information System analytics for city planning.

Nonetheless, the Digital India programme does not stop with the above segregated day-to-day and intra-governmental usage. On a larger scale, the data-driven Digital India programme serves as a basis for India's Smart Cities Mission, which aims to develop 100 citizen-friendly

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<sup>5</sup> Taisha Anthony Grace et. al (2018) .Emerging South Asia: Politics, Economy and International Relations. ISAS Special Reports. Accessed on 23 May 2018.

<sup>6</sup> Komal Gupta (2016). Ten Services Made Easier by Aadhaar. <https://www.livemint.com/Politics/114uJX6krzug9no5VGZnJ/How-Aadhaar-is-making-life-easy.html>. Accessed on 7 May 2018.

and sustainable cities. While the Smart Cities have been subjected to a wide array of conceptualisation, they will use the latest ICT and data in order to deliver critical infrastructure and public services in a more interactive and efficient manner.<sup>7</sup> In terms of characteristics, a prominent view suggests that a Smart City would encompass and interlink its economy, governance, living, environmental practices and people through the aid of ICT.<sup>8</sup>

For India, Smart Cities planning is ongoing. As at 2016-2017, more than 20 cities have been selected for the Smart Road initiative, 18 cities for integrated command and control for traffic projects, while another 46 cities for smart water and green energy projects.<sup>9</sup> It is now also expected that, by the end of 2018, 700 DigiGaon will enjoy similar technological implementations that the Smart Cities enjoy under a larger Digital India programme.<sup>10</sup> Within these projects, there have several notable instances of the use of ICT, for example, Odisha's parking availability mobile app, Madhya Pradesh's cleanliness metering app named 'Apna Nigam' and physical-based projects such as the 109 Smart Toilets in New Delhi.<sup>11</sup> This network combination of physical objects and technology outlets, such as mobile phones or computers and data connectivity, is commonly known as the Internet of Things that essentially fulfils the definition and deliverance of a Smart City.

## **ICT Developments in ASEAN**

On the other hand, within ASEAN, several recent digital developments have taken place, in terms of a single market integration as part of the larger ASEAN Economic Community framework. At the national level, the ASEAN countries have concentrated on working on various areas within their own digital economies. For instance, Malaysia is looking to implement its Digital Free Trade Area; Singapore its Smart City initiative; Indonesia the

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<sup>7</sup> Poonam Sharma, and Swati Rajput (2017). *Sustainable Smart Cities in India: Challenges and Future Perspectives*. Springer, 4.

<sup>8</sup> Ibid.

<sup>9</sup> Infrastructure and Budget: Chapter 8. [https://www.indiabudget.gov.in/budget2017-2018/es2016-17/echap08\\_vol2.pdf](https://www.indiabudget.gov.in/budget2017-2018/es2016-17/echap08_vol2.pdf). Accessed on 18 May 2018.

<sup>10</sup> Press Information Bureau, Government of India: CSC to reach 2.50 lakh gram panchayats and 700 Digital villages to be established by the year end: Union Minister of Electronics & IT, op. cit.

<sup>11</sup> List of all app based solution projects in the first 20 light house cities. [http://smartcities.gov.in/upload/uploadfiles/files/Appbased%20Projects\\_60%20cities.pdf](http://smartcities.gov.in/upload/uploadfiles/files/Appbased%20Projects_60%20cities.pdf). Accessed on 7 May 2018; and PPP projects in Smart Cities. <http://smartcities.gov.in/upload/uploadfiles/files/PPP%20Projects%20update%2031-3-17.pdf>. Accessed on 7 May 2018.

digitalisation of its small-medium enterprises; and Thailand, its government-centric Digital Government Plan 2017-2021.

Nonetheless there appears to be greater consensus to work on common priorities, in terms of an ASEAN-wide ICT development. Firstly, in the recent 32<sup>nd</sup> ASEAN Summit in Singapore on 28 April 2018, it was observed that there was a consensus to develop an ASEAN Digital Integration Framework to further monitor the progress of ASEAN's digital integration. This is expected to ensure that the current visions of the ASEAN ICT Masterplan 2020 and the Masterplan on ASEAN Connectivity 2025 are effectively achieved. The five key expected outcomes of the ASEAN ICT Masterplan are:

- 1) An accessible, inclusive and affordable digital economy;
- 2) Deployment of Next-Generation ICT as enablers of growth;
- 3) Sustainable Development through Smart City Technologies;
- 4) Multiple ICT opportunities across a Single Regional Market; and
- 5) Secure Digital Marketplaces, Safe online communities.

On the other hand, a Masterplan on ASEAN Connectivity 2025 aims for (1) Sustainable Infrastructure; (2) Digital Innovation; (3) Seamless Logistics; (4) Regulatory Excellence; and (5) People Mobility. The two Masterplans are, therefore, not mutually exclusive; they are heavily oriented on applying ICT innovations onto the development of physical infrastructure across a single region to improve the region's economy and governance.<sup>12</sup>

In relation to both masterplans, 26 ASEAN cities have also recently come together to establish the ASEAN Smart Cities Network (ASCN).<sup>13</sup> The network would conform to a uniformed city-specific Action Plans for Smart City Development (2018-2025) containing the specific projects to be undertaken, while an annual meeting of the ASCN is expected to allow for the participation of and discussions among multiple stakeholders, including government and business representatives, to create new solutions within the Smart Cities development. The electronic payment solutions appear to be one rising area in the ASEAN Smart Cities and

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<sup>12</sup> Masterplan on ASEAN Connectivity. <http://asean.org/storage/2016/09/Master-Plan-on-ASEAN-Connectivity-20251.pdf>. Accessed on 18 May 2018.

<sup>13</sup> Angaindrankumar Gnanasagaran (2018). Welcome to the future: ASEAN Smart Cities Network. <https://theaseanpost.com/article/welcome-future-asean-smart-cities-network>. Accessed on 18 May 2018.

urban digitalisation that has previously been much neglected vis-à-vis fields such as built environment and mobility. This is with respect to the Smart Cities development. Already, at the business-to-business level, a key memorandum of understanding (MoU) for cross-border e-payments was signed among leading payment transaction firms across ASEAN in September 2017, namely, the Asian Payment Network, National ITMX Co Ltd of Thailand, National Payment Corporation of Vietnam, Network for Electronic Transfers (Singapore) Pte Ltd (NETS), Payments Network Malaysia Sdn Bhd and PT Rintis Sejahtera of Indonesia.<sup>14</sup> This inter-government-backed MoU is, to date, the largest and first mover e-payment initiative, and is set as a framework for standard e-payment practices within ASEAN.

## **Existing India-ASEAN ICT Outreach and Investments**

While India and the ASEAN countries seek to drive their own economies through ICT innovations and solutions, mainly highlighted in the discussed segments within their Smart Cities initiatives, there have been some preliminary cross-border developments with respect to ICT initiatives.

For government-to-government Smart Cities collaboration, there exists a December 2014 Singapore-Amaravati MoU which witnessed Surbana Jurong, a Singapore government-owned consultancy company, prepare master plans for the S\$21.4 billion capital city project.<sup>15</sup> Since then, the level of cooperation has been further enhanced. In February 2018, the Singapore government established the Amaravati Partnership Office, jointly with the Andhra Pradesh Capital Region Development Authority, and formed an Innovative Corridor as a platform to discover innovative urban solutions and tap expertise from the private sector.<sup>16</sup>

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<sup>14</sup> Regional Collaboration for Real-Time Cross-Border Payments across Asia. <https://www.nets.com.sg/newsroom/regional-collaboration-for-real-time-cross-border-payments-across-asia/>. Accessed on 7 May 2018.

<sup>15</sup> Mohit Sagar (2017). Singapore to Help India Build First Planned Smart City – Amaravati. <https://www.opengovasia.com/articles/6663-singapore-to-help-india-build-first-smart-city>. Accessed on 7 May 2018.

<sup>16</sup> Priyakar Bhunia (2018). Innovative Corridor to help Singapore companies pilot urban solutions in Indian state of Andhra Pradesh. <https://www.opengovasia.com/articles/innovation-corridor-for-singapore-companies-to-pilot-urban-solutions-in-indian-state-of-andhra-pradesh>. Accessed on 7 May 2018.

On the other hand, for digital payment collaboration, individual ASEAN countries such as Singapore are also reaching out beyond ASEAN for digital opportunities. For example, Singapore's NETS joined forces with India's National Payments Corporation in November 2017 to enable cross-border electronic payment between both countries. Thereafter, a MoU between the Monetary Authority of Singapore and the Government of Maharashtra (February 2018) was also signed. With Singapore chairing ASEAN this year, this also indicates that the long-term efforts and strategies towards forming the Smart Cities Network and financial technology integration across these networks are likely to be sustained across the ASEAN countries and beyond.

## **Limitations in India-ASEAN ICT Cooperation**

The ASEAN-India ICT cooperation is, nonetheless, still at the infant stage. There are several domestic limitations on both sides.

On India's end, the problem arises from stagnancy of the digital infrastructure and its adoptability. The World Economic Forum's latest Networked Readiness Index (NRI), which measures the propensity for countries to exploit the opportunities offered by ICT, both India's NRI infrastructure and usage rating experienced -0.84 per cent change from 2012 to 2016, which has consistently hovered between 3.18 and 3.45 on a 1-to-7 scale. Furthermore, the FDI inflows into three of India's sectors (Telecommunications, Information and Broadcasting, Consultancy Services), which provides a gauge for confidence in India's ICT, did experience positive annual growth (CAGR) in the last five years (2013-2017). Comparatively, the construction development sector's FDI shrunk by 22.5 per cent within the same period.<sup>17</sup> These findings could suggest that while India continues to receive a boost in its ICT capabilities and innovations, it may not be as effective in translating these capabilities into infrastructure for wide adoption.

Conversely, on ASEAN's end, the gap between infrastructure and usage is more visible. For instance, while Indonesia's NRI infrastructure rating was more or less stagnant, at a -2.04-per cent change (between 2012 and 2016), its NRI usage rating experienced a 3.54-per cent

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<sup>17</sup> Latest data available from CEIC Database.

improvement in the same period. Similarly, for the Philippines, its infrastructure experienced stagnancy (-0.22 per cent change) but its usage rating improved by 4.68 per cent.

## **Conclusion: Importance to further India-ASEAN ICT Cooperation**

Long-term ASEAN-India digital cooperation would, therefore, require strong efforts in calibrating their respective demand and supply of ICT-related infrastructure before cross-border collaborations and the exchange of expertise can be further boosted. By reinforcing domestic self-balancing strategy, this can help ensure that individual countries that are faster and better equipped with ICT capabilities and implementation experience can effectively exchange their skills and expertise. ICT cooperation between India and ASEAN remains important and mutually beneficial for two main reasons.

The first pertains to its ICT industry growth and market access. For India, cooperation with the ASEAN bloc will allow its ICT industry to not only continue expanding, but also achieve greater service exports into ASEAN. Given that the size of the global digital economy stands at US\$11.5 trillion (S\$15.18 trillion) or 15.5 per cent of global gross domestic product as at 2016 and growing, ASEAN's combined ICT sector alone will hit a market demand of US\$0.66 trillion (S\$0.90 trillion) by 2020, amounting to approximately 2.35 times that of India's ICT sector market demand.<sup>18</sup> However, the majority of India's current ICT exports are targeted mainly at the United States and the European Union, accounting for more than 75 per cent of its total ICT export, while its share to the ASEAN countries and Hong Kong is no more than eight per cent.<sup>19</sup>

India can capitalise on the opportunity to fill in this gap as demanded by ASEAN through service trade and cross-border investments. While India's ICT software/services production stood at only 6.21 per cent of its GDP (current prices) in 2015-2016, IT services have been forecasted to grow at 10.3 per cent (CAGR) between 2017- 2022.<sup>20</sup> In addition, India's ICT industry has already been driven by growth in the exports of computer software and services,

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<sup>18</sup> Huawei and Oxford Economics (2017). <http://www.huawei.com/minisite/gci/en/digital-spillover/index.html>. Accessed on 14 February 2018; Latest data available from Economist Intelligence Unit.

<sup>19</sup> Electronics and Computer Software Export Promotion Council - India's Computer Software Export. <https://www.escindia.in/resource-center/indias-computer-software-export/>. Accessed on 18 May 2018.

<sup>20</sup> BMI Industry View – India – Q2 2018. Accessed on 18 May 2018.



including IT-enabled services and IT-based business process outsourcing, with a steady 13.1 per cent annual growth (CAGR) between 2010 and 2015.<sup>21</sup> Alongside, India's computer hardware production has projected a growth of 2.2 per cent (CAGR) between 2017 and 2022 as a result of the 'Make in India' initiative. This combined ICT services and hardware growth can see India potentially become one of the largest Internet of Things producers in the Asia-pacific region.

The second pertains to the increasing physical connectivity through digital connectivity that can benefit bilateral trade between ASEAN and India in the long run. Decade-long ASEAN-to-India and India-to-ASEAN exports grew at 4.2 per cent and 5.92 per cent respectively from 2007 to 2016. However, looking from a longer trend, comparing trade shares in 2016 to 2000, India has witnessed a decline in ASEAN's share in its global trade, while ASEAN's share in India's global trade also declined.<sup>22</sup> Bilateral comprehensive trade costs by Indonesia, Singapore, Malaysia, Philippines, Thailand and Vietnam respectively with India, have also been found with to be significantly higher than that with China, another major free trade agreement (FTA) partner with ASEAN.<sup>23</sup> Also, in terms of trade facilitation provisions among the six ASEAN+1 FTAs, only the ASEAN-India FTA lack provisions on the use of ICT and e-commerce.

Higher trade facilitation and volume through digital means can, nonetheless, aid in significantly reducing trade costs. A full compliance to the World Trade Organization's Trade Facilitation Agreement and other digital trade facilitation is estimated to be able to reduce trade costs in the Asia Pacific region by 26 per cent or US\$673 billion (S\$901 billion) of savings annually.<sup>24</sup> The trade costs for the ASEAN countries can fall by at least 15 per cent, and 20 per cent for the South Asia countries, including India.<sup>25</sup> The integration of the Smart

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<sup>21</sup> Own calculation based on data from the Electronics and Computer Software Export Promotion Council, India.

<sup>22</sup> Chan, Jia Hao (2018). Growing ASEAN-India Ties: Economic Opportunities for Singapore in India. <https://www.isas.nus.edu.sg/wp-content/uploads/2018/03/ISAS-Briefs-No.-550-Growing-ASEAN-India-Ties.pdf>. Accessed on 18 May 2018.

<sup>23</sup> Masali, A D, & Chirathivat, S (2018). TEN ASEAN-India Connectivity: Progress So Far. In *Celebrating the Third Decade and Beyond* (pp. 265-282). Routledge.

<sup>24</sup> Studies in Trade, Investment and Innovation No. 87 – Digital Trade and Facilitation in Asia and the Pacific. <http://www.unescap.org/sites/default/files/publications/DigitalTradeFacilitation.pdf>. Accessed on 18 May 2018.

<sup>25</sup> Ibid.

Cities, export processing zones and digital trade platforms, therefore, remains a long-term regional and national commitment for India and ASEAN.

Essentially, the Smart Cities development and exchanges, due to their emphasis in both digital and physical connectivity, will continue to be useful in facilitating trade and investment linkages. Also, given that ASEAN continues to form closer ICT collaborations with its existing FTA partners, as already witnessed in an ASEAN-Australia Smart Cities Initiative, it, therefore, remains crucial to boost India-ASEAN ICT exchanges at both the government and business ends in order for India to maintain competitiveness and benefit from being one of ASEAN's most important trading and investment partner.

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