

India, the Third Force in Asia under the Digital Hegemony

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1. India keeps balance amid the US-China Competition, Emerges as Third Force

The US-China geopolitical dynamics in Asia is on a rise. In the present situation, the US dominates the region in areas of security and investment with huge amount of arms sale (USD 8 billion) and FDI (Foreign Direct Investment) stock (USD 373 billion). On the other hand, China has trade & FTAs (free trade agreement) advantages. China's trade volume is USD 347 billion, which is almost three times that of the US. Additionally, China has FTAs with ASEAN and is also a member of RCEP (Regional Comprehensive Economic Partnership). In contrast, the US has FTA only with Singapore. In an emerging situation, both the superpowers are increasingly competing for hegemony. While, China is pursuing BRI (Belt Road Initiative), the US is following FOIP (Free and Open Indo-Pacific). Financing has emerged as the new tool for regional hegemony. China started various multilateral projects via AIIB (Asian Infrastructure Investment Bank). The US also recently launched ARIA (Asia Reassurance Initiative Act) with USD 7.5 billion commitment.

However, the situation is different in terms of commercial competition. The Chinese technology giants BAT (Baidu, Alibaba, Tencent), have made big investments, presence in Asia especially in e-commerce and digital payments. On the other hand, the US technology giants GAFA (Google, Apple, Facebook, Amazon) have high number of users but, lack aggressiveness in competing with BAT.

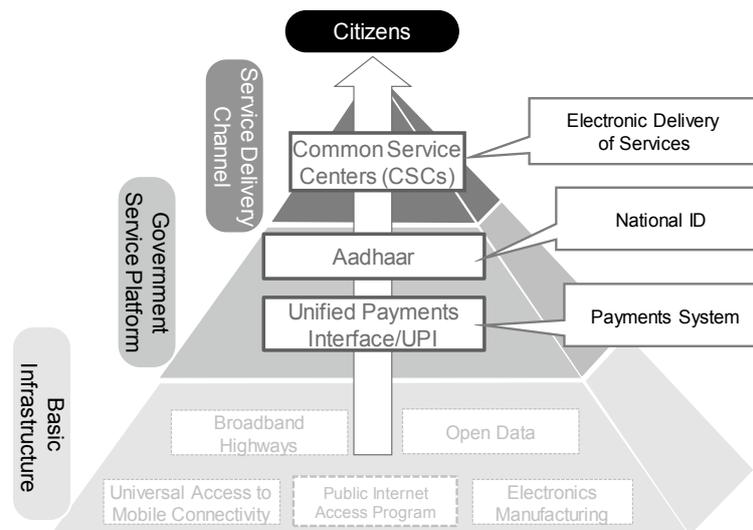
Interestingly, India has a unique position as both BAT and GAFA co-exist strongly here. In fact, India is highly attractive for digital business

opportunities in the region because (i) it has over 600 million Internet users vs. 390 million in ASEAN, (ii) its e-commerce market is four times in size than ASEAN, (iii) Cashless transactions are rapidly rising. In addition, India benefits from openness over China in policy and foreign technology acceptance.

Geopolitically too, India is striking a balance with both the superpowers. India is not participating in China-led BRI, but it is the largest borrower of AIIB's lending. In the case of the US, India is a member of QUAD initiative (US-Japan-Australia-India), but holds different opinion on the "America First" policy of trade and tariffs. At the same time, India is pursuing a strategy that can be called "Act East, Link West". For 'Act East', India is investing in ASEAN to counter China's influence. E.g., USD 1 billion loan for digital connectivity in ASEAN. In parallel, for 'Link West', India is making co-operation with Japan for Asia Africa Growth Corridor (AAGC) and with the US for activities in the Indian Ocean.

Thus, India is emerging as the third force holding the casting vote in Asia.

Hitachi Research Institute analyzed India's increasing digital attractiveness and policy initiatives that got a notable push under the Prime Minister Narendra Modi's government. The Institute looked at the Modi government's flagship initiative "Digital India" and how it is creating new service platforms for electronic delivery of services to citizens. This paper further elaborates how digitalization is spreading to villages (rural areas) for enhancing the Quality of Life (QOL). Moreover, the Indian government is offering its approach of digitalization to South & Southeast Asian countries to benefit them.



Source : Created by Hitachi Research Institute

Fig. 1 Digital India Program: Structure

2. Digital India Evolving with Large-scale Data Aggregation

2.1 “Digital India” initiative of the Government

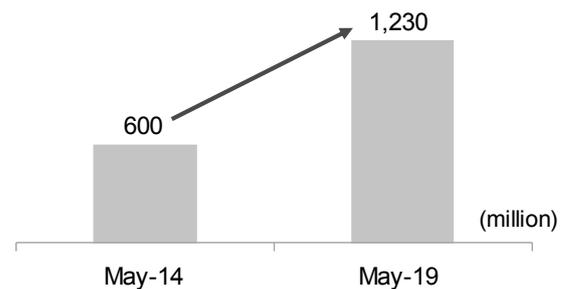
Launched in 2015, “Digital India” is the flagship initiative of the India government. This program can be understood through 3-layer structure (Fig. 1).

At the bottom is basic infrastructure, e.g., broadband, mobile connectivity and so on. Then, the government has created service platforms: National ID (Aadhaar) and payments system (Unified Payments Interface/UPI). The ultimate aim of Digital India is electronic delivery of services to citizens. Towards this, while Aadhaar and UPI become the key service platforms, the CSCs (Common Service Centres) act as delivery channel for government-to-citizen services digitally. It is interesting to see how Digital India is evolving with large-scale data aggregation with this structure.

2.2 Aadhaar creating base platform for Government Services

Launched in 2010, Aadhaar is a 12-digit ID based on biometrics (fingerprint, iris). It is issued by the Unique Identification Authority of India (UIDAI). Under the Digital India push, Aadhaar became mandatory. At present, more than 90% of India's population is enrolled under it. Thus, Aadhaar has

become the world's largest biometric database with more than 1.2 billion IDs (Fig. 2).



Source : Prepared by Hitachi Research Institute based on data from Ministry of Electronics & Information Technology, and UIDAI

Fig. 2 Number of People Enrolled in Aadhaar

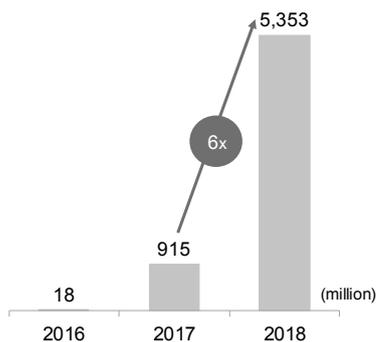
In latest developments in recent years, Aadhaar is linked to various government-to-citizen (G2C) services including financial transactions. In fact, Aadhaar is already used for over 29 billion authentications, 7.2 billion eKYC transactions, issuing 3.5 billion documents in DigiLocker, and 870 million banks accounts linked with Aadhaar. Thus, Aadhaar is becoming a key platform towards data aggregation.

2.3 UPI platform spreading Digital Payments nationwide

The Unified Payments Interface (UPI) was launched in 2016 by the government to push cashless payments. It is developed by the National Payments Corporation (NPCI).

UPI's unique features are: seamless access to

multiple bank a/cs via single mobile app and real-time round-the-clock payments (24x7, 365 days). Importantly, the UPI is fast integrating into G2C services via service delivery channels especially CSCs (Common Service Centres). There is a rapid increase in adoption of the UPI. Within two years of launch, it reached 5 billion transactions last year in 2018 (Fig. 3). The rapid use of UPI platform is further raising the volume of data aggregation.



Source : Prepared by Hitachi Research Institute based on data from NPCI
Fig. 3 UPI Transactions Volume

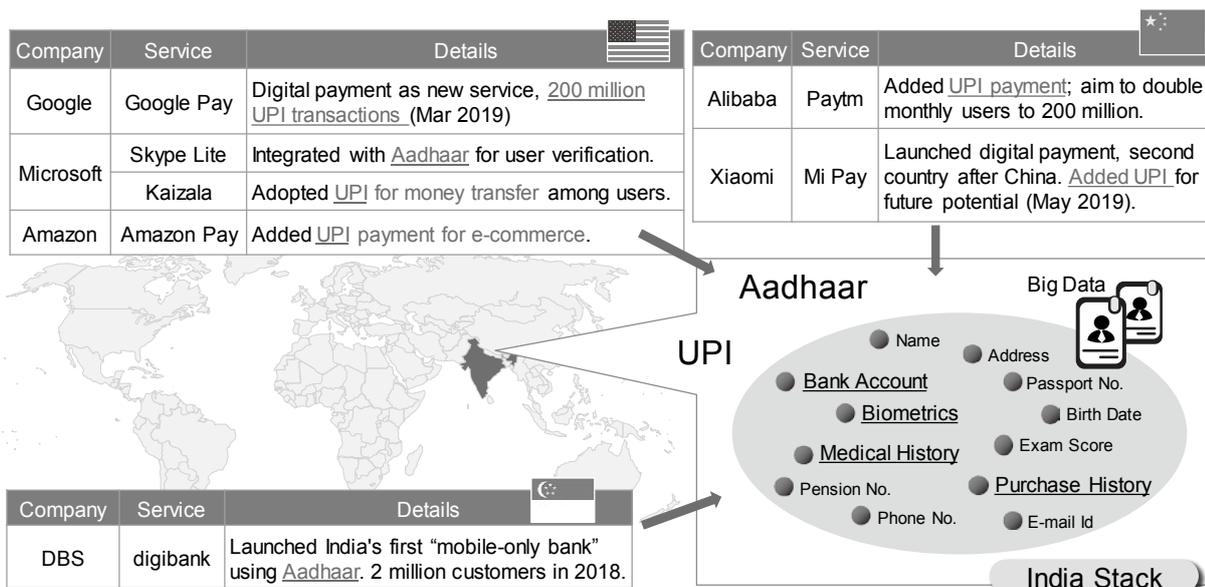
2.4 Government opens platforms to Foreign Companies

With Aadhaar ID and UPI payment platforms, the government has created a large-scale personal data aggregation. This has several information, not only a person's name, but also his/her bank a/c details, medical history, and so on. This is called "India Stack" (Fig. 4).

However, unlike China's strict regulations, platforms of India Stack are open to foreign, private companies. The regulations allow companies to use Aadhaar for verification. Using this, Microsoft launched (new)Skype; DBS launched India's first mobile-only bank. In the case of UPI, both the US (Google, Amazon) and Chinese companies (Alibaba led Paytm) integrated UPI into payment service. While, large-scale data aggregation is emerging in the form of "India Stack", there's another new policy action from the Indian government.

2.5 Government starts Localization of Data Aggregation

In recent months, India has started pushing data localization with new rules for digital payments and e-commerce. For digital payments, the Reserve Bank of India (RBI) has made mandatory local storage of data. As a result, foreign companies (Google, Amazon, etc.) already started using Indian servers for payments data. For e-commerce, the new draft national e-commerce policy proposes some limitation on cross-border data flow. As a result, foreign companies will have to invest in local data centres. However, the most critical new regulation would be proposed Personal Data Protection Bill, 2018 that is drafted on the lines of EU's GDPR (General Data Protection Regulation).



Source: Prepared by Hitachi Research Institute based on analysis of information from various published sources
Fig. 4 Data Aggregation leading towards creation of India Stack

3. Digital Service Opportunities in Digital Villages of India

Despite these regulatory developments, India continues policy initiatives to push digitalization. This can be understood from transformation that is taking place even in rural areas.

3.1 CSCs as Delivery Channel for G2C Services

Rural India has 900 million people, which is more than 70% of India's population. Therefore, it is a key to the success of Digital India. Towards this, both the central and state governments are focusing on Common Service Centers (CSCs) for electronic delivery of services (Fig. 5). A typical CSC has computer(s), printer(s), scanner(s), power back-up (Uninterruptible Power Supply-UPS, genset), digital/web camera, and broadband connectivity.

In this set-up, the most critical stakeholder is CSC e-Governance Services India Ltd. It is a Special Purpose Vehicle (CSC SPV) established by the Ministry of Electronics and Information Technology (MeitY) to monitor the implementation of CSC program. This organization is the main implementation agency, making content aggregation from service providers and creating a standard technology platform for use by CSCs. Further, the

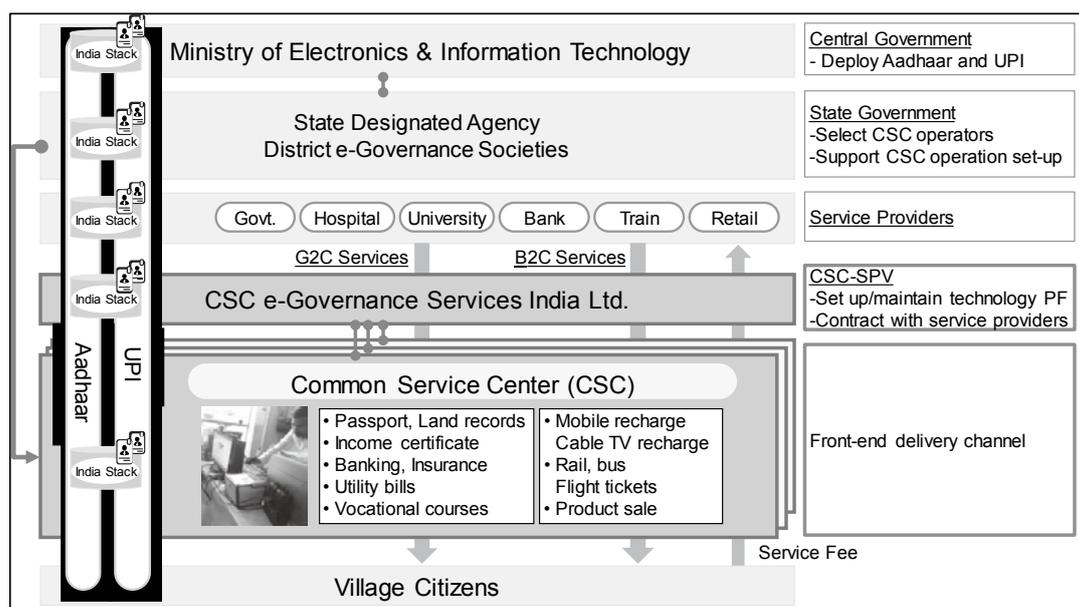
government deploys Aadhaar and UPI for services.

However, this is a decentralized set-up, where state level organizations are responsible for CSCs operations and set-up. CSCs are operated by village level entrepreneurs, and act as the front-end delivery channel for services to village citizens who pay fee for service and this fee is shared among CSC operators and government.

While the CSCs were to provide G2C services, they are expanding to B2C services and also becoming payment points. Their wide range of services include government, financial, social and private sector services in agriculture, health, education, banking, insurance, utility payments, mobile recharge, rail-bus-flight tickets, etc. CSCs are also increasingly becoming the point of sales for FMCG (fast moving consumer goods) and electronic products such as smartphones and computers.

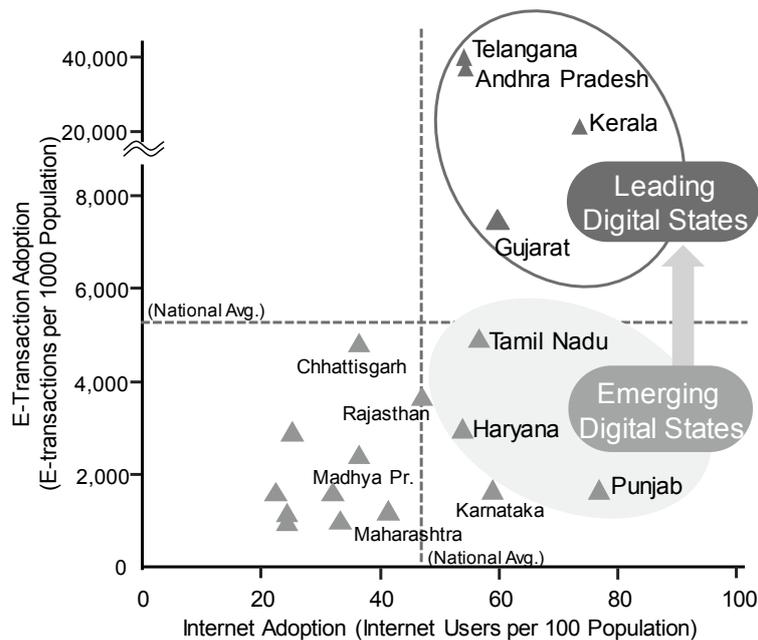
3.2 CSCs evolving towards Digital Villages

The CSC program was launched in 2006 with a target of 100,000 CSCs. It got a major expansion in 2015 when the "Digital India" program was launched. The target was revised to 250,000 CSCs by 2019. At present, more than 210,000 CSCs are already established in villages, creating the world's largest network of G2C e-service centres in villages. These



Source: Prepared by Hitachi Research Institute based on analysis of information from various published sources

Fig. 5 Set-up of CSC Delivery Channel



Source : Prepared by Hitachi Research Institute based on analysis of information from various published source

Fig. 6 Digital Diversity among States

are providing more than 350 G2C Services and also B2C, recording more than 4 million transactions each month.

Now, the government has started leveraging CSCs towards creating 1,000 “Digital Villages”. The aim is to provide not only CSC services, but also additional services including tele-education, tele-medicine, LED lighting, etc. for enhancing the QOL of villagers. According to the government, work on around 800 villages is in progress and recently it announced to expand to 100,000 “Digital Villages” by 2023.

3.3 Diversity among Indian States towards digitalization

In the context of India, a notable point is its diversity. It is a very large country with 28 states and there is huge diversity across states in terms of their economy, government policy and social characteristics. This diversity can be noticed in the area of digitalization also. Hitachi Research Institute analyzed adoption of digitalization among states (Fig 6). From the analysis of data on number of Internet users and e-transactions, it was found that Telangana and Andhra Pradesh (AP) states are clearly on the top, followed by Kerala and Gujarat. These can be called Leading Digital States (LDS).

Whereas Tamil Nadu, Punjab, Haryana are Emerging Digital States (EDS). In fact, Telangana also tops in terms of number of e-services (222), following by AP (203). This indicates these states’ focus on e-service delivery via CSCs in villages.

The Institute also gathered information on the progress of digitalization in villages of top two states. In Telangana, Ibrahimpur has become the South India’s “first cashless village” as bank accounts opened and debit cards issued to all households. Another village, Mansanpally, has an E-health Centre (Cloud-based electronic medical records), E-education Centre (online class) and E-Panchayat Centre

(local governance services). In Andhra Pradesh, the Mori village has established 100% cashless payments with PoS terminal at shops, Cloud-based healthcare records, Virtual classrooms, and also IoT Solutions for farming.

Foreign technology companies are getting attracted to villages for business activities. Interestingly, the Mori Village has a Co-Innovation Lab, where Google, Cisco, IBM, Ericsson etc. are developing digital technology services for villages. Their work areas range from fiber optic technology, to virtual classrooms, smart rural aggregation weather platform and smart water grid management

IoT. Companies see this as opportunity to develop and pilot scalable business models for generating new revenue streams.

4. Digital India being “Exported” to ASEAN

Thus, we notice that the Indian government has been promoting “Digital India” since 2015. It started digital government services (E-governance), cashless payment service, while leveraging the world’s largest national ID system, and then opening it to private sector. The “Digital Village” program is another effort of the government to enhance QOL of people with digital services. At the same time, it is further aggregating big data in a manner of regional decentralization. Some state governments are also promoting collaboration between CSCs and private sector including foreign companies. In this way, private companies are also able to prototype new solutions & services and later commercialize them.

However, in recent years India also started “exporting” its way of digitalization to ASEAN starting from G2C service delivery. In November 2015, the PM Modi announced credit line of USD 1 billion for digital connectivity for ASEAN countries. After this, the government announced pilot project on rural connectivity for creating digital villages in Cambodia, Lao PDR, Myanmar, Vietnam (CLMV). First project started in Traing district in Takeo, Cambodia. Success of this project is planned to be replicated in other ASEAN countries.

In another notable development, the government has started internationalizing the NPCI’s digital payment platform especially the UPI. Towards this, in May 2018, it announced to link up with Singapore’s Network for Electronic Transfers (NETS), which will make UPI payments acceptable in Singapore.

Further, India’s National Research Development Corporation (NRDC) will establish a technology data bank for ASEAN as part of ASEAN-India Innovation Platform. This will bring technologies on a single platform and make it available for commercialization for Indian as well as ASEAN entrepreneurs.

Thus, we can notice India’s approach is different

from China which entered in ASEAN with B2C services (e.g., E-commerce). Following the Indian government’s steps, the Indian Start-ups are also eyeing the ASEAN markets (e.g., Oyo Rooms). Given the current situation, India’s digitalization can be expected to expand bringing it closer to ASEAN.