Digital India Research Report 2016-17

Second Edition

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Praise for the First Edition 'Dream of Digital India Research Report 2014-15'

"I'm glad to learn that your book 'Dream of Digital India: Research Report 2014-15' that deals with benefits of Digital India Programme of Central Government, has received a significantly good response. Digitizing infrastructures and making every citizen aware lays the foundation for a strong and vibrant India. I fervently hope that this book will play a significant role in creating awareness about initiatives taken by the Government towards Digital India programme."

-Mr. MAHEISH GIRRI, Member of Parliament, Lok Sabha East Delhi & National Secretary, BJP

"Very useful to move ahead in the direction of realising our Hon'ble PM's dreams."

-Mr. TARUN VIJAY, Former Member of Parliament

"Great work, my compliments"

- Maj Gen (Dr) GD BAKSHI

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INTRODUCTION

'Sabka Sath, Sabka Vikas' (collective efforts-inclusive growth) is the main mantra of our current government. The key initiatives of Prime Minister Mr. Narendra Modi like Swachh Bharat Abhiyan, Jan-Dhan Accounts (PMJDY), India Post Payment Banks, Gram Jyoti Yojana, Aadhaar Card, Pension Yojana, Jeevan Jyoti Bima Yojana, Ujjwala Yojana, Housing for All, Mudra Loan, Kaushal Vikas Yojana, Sukanya Samriddhi Yojana etc., are aimed to provide the windows of opportunity to each and every citizen of the country.

With EODB initiatives, policy reforms, automatic approval system, reforms for developing stable/predictable and competitive tax structure, demonetization reform, Digital India, Make in India, Smart Cities, Smart Villages, Startup India, and Standup India kind of initiatives Mr. Narendra Modi wants to make India a hub for manufacturing, cutting-edge research and innovation. Mr. Modi has shown that development, upliftment, and progress need not be a case of one against the other, but it can include everyone.

India is going through a big transformation. Digital India is a key enabler in this process. It's a $1 trillion business opportunity across IT and IT enabled services, telecom, and electronics manufacturing. Digital India aims to transform the entire ecosystem of public services through the use of information technology and internet services. It is proposed to be implemented in Phases. It covers multiple Government Ministries and Departments. Each ministry and department have their own digital targets but their goals are linked and aligned with the ultimate vision of Digital India.

For Good Governance simplification of government procedures and processes is a must and technology helps to make the entire system transparent and faster. The goal of Digital India program is to build an open, transparent and accountable administration. Our government is providing: Digital Infrastructure as a Utility to Every Citizen, Governance and Services on Demand and Digital Empowerment of Citizens.

Demonetization is one of the biggest reforms of the world with incredible public participation. Indians have shown that they are mature enough to catch the signal from the storm of disinformation. This is the Indian version of Democracy! Demonetization is just an example.

The success of Demonetization is a success of Digital India too. During the last two and a half years, Digital India has prepared an environment of collaboration, participation and good governance in the country particularly in Rural India due to which people were quite prepared to embrace the digital payment technologies and they have shifted their habits easily.

Our country is full of young and smart people. Prime Minister Mr. Narendra Modi has given the concept of New India, "New India manifests the strength and skills of 125 crore Indians, who will create a Bhavya and Divya Bharat." People of our country are ready to participate in the bold initiatives which contribute to the growth of the country. To strengthen the 'New India' Digital India is playing a crucial role. The 21st century belongs to India!

I'm tracing the journey of Digital India since its launch. I used to share the information about its actual status and direction through my articles, books and videos. This is my second book on Digital India, in my previous book 'Dream of Digital India Research Report 2014-15', I shared the vision, approach and facts related to Digital India and I published that book on 1st February 2016. Today after one year when I'm writing this book, with proud I can say that Digital India is a success!

In this book, I have covered the topics like Demonetization, Cashless Economy, Smart Cities Mission, Smart Villages, Transformation of India Post, Indian Railways – Innovation in Administration, Digital India push in Northeast India, Digital Identity, Cyber Defense and major events related to Digital India.

You can visit my portals – a2zstartup.com   a2zstartup.in ihse.in

You can view my videos at – DigiChannel

You can read and download a copy of its previous version:

 Dream of Digital India Research Report 2014-15

Demonetization - A Big Push to Digital India

Indians have shown that they are mature enough to catch the signal from the noise of disinformation. This is the "Indian Version" of democracy!! Demonetization is just an example. People of our country are quite smart and open to adopting new technologies. We are going through a big transformation; there is a positive environment in the country for any kind of change. Our digital India program is going good and now our country is ready to embrace cashless transactions too.

Demonetization has given a big push to digital India. For a true Digital India, the cashless economy is a must. Demonetization is a quantum leap toward a cashless economy. Through a single nationwide appeal, Prime Minister Mr. Narendra Modi has destroyed the illegal parallel economy. There will be some challenges in this process but this is not the right time to count them.

Our country has among the highest usage of cash across the global economies. According to a PWC 2015 report- In India, 98% of all transactions by volume happen in cash and 68% of the total value of transactions conducted in cash. As per the RBI data, the proportion of 500 and 100 Rs notes was 86.4 % of the total value of notes in circulation, amounting to Rs 14 lakh crore. Demonetization is an aggressive and offensive step to end the shadow economy!

Demonetization has also given a boost to government's financial inclusion drive that aims to include the unbanked and under-banked people in the mainstream of economic growth. Few months back I discussed something similar with the leadership team of a financial organization that our government is serious about mobile and digital banking technologies and your product has good possibilities to become a familiar name in the tier 2/tier 3 cities and in rural India because in future these under-banked and unbanked people are going to play a crucial role. They definitely missed that chance but the government has shown a pro-active approach and launched a number of new systems to make the cashless transaction easy for the people.

In the process of transforming India into a cashless economy, NPCI (National Payments Corporation of India) is playing a crucial role. NPCI has launched

revolutionary payment systems like UPI, USSD, BHIM App, RuPay Card and AEPS (Aadhaar Enabled Payment System) etc.

According to some stats, at present, there are some 343 million internet users in India and by 2020 we will have more than 600 million internet users. We are the world's 3rd largest Smartphone users market. The data shows that our rural India has also got an internet friendly and exploratory mindset and the internet and Smartphone users in rural India are continuously increasing. According to some recent reports, the usage of social media in rural India has grown by 100 per cent.

Our government is pushing hard to promote cashless transactions, a number of steps have been taken in this direction like RuPay card, e-wallet/prepaid wallet, USSD transactions, UPI transactions, Aadhaar Micro ATMs etc. To spread awareness about digital payments government is also running the DigiDhan Abhiyan across the country. A channel called DigiShala is also launched to educate people on how to use Digital payment and financial transactions systems.

People of our country have shown that they are ready to participate in the bold initiatives of the government for the betterment of the country and they have given their full support to Demonetization drive of Prime Minister Shri Narendra Modi. The response that country's leadership has received from common people on Demonetization, which was a bold step and caused some inconvenience in the initial stage, is now a matter of research for some countries.

Let's take a look at some major initiatives taken by the government to make demonetization a success…

BHIM (Bharat Interface for Mobile) App– On 30th December Prime Minister Shri Narendra Modi launched a mobile app called BHIM (Bharat Interface for Mobile) for the Unified Payment Interface (UPI). The Aadhaar based payment and thump impression authentication kind of features are integrated into this app to make small merchants and their customers (particularly from rural/remote areas) to participate in the cashless economy.

UPI - Unified Payments Interface (UPI) is a system that powers multiple bank accounts (of participating banks), several banking services features like fund transfer (P2P), and merchant payments in a single mobile application. UPI was

launched by National Payments Corporation of India. UPI has built on the Immediate Payment Service (IMPS) platform. UPI can be used for multiple common banking tasks[1].

The banks like SBI, HDFC Bank, ICICI Bank, Axis Bank and 15 other banks have launched their own UPI-based apps. Here is the list of banks which have launched their UPI-based apps - http://www.npci.org.in/UPI_Livemembers.aspx

USSD Payments - USSD stands for unstructured supplementary service data. USSD technology works through GSM network channels, the same channels that are normally used for voice calls via a standard mobile phone. As per the RBI guidelines, this method can be used to make transactions of up to Rs. 5000. The USSD technology can be used for checking your account balance, generating mini statement, to transfer funds via MMID (a code allotted by banks on mobile banking registration), IFSC code or Aadhaar number. USSD is launched to support financial inclusion drive of the government for including low-income groups in the mainstream of the cashless economy.

Aadhaar Micro ATMs–It is slightly different from a point of sale (PoS) device, on which you swipe your credit or debit card to make payments to merchants. Aadhaar Micro ATMs also have facilities such as fingerprint sensors to verify your identity through Aadhaar-based biometric identification. In some cases, micro ATMs also let you open a new savings account, using your Aadhaar details,

Apart from dispensing cash, they also let you check account balance, deposit cash and initiate fund transfers to other banks.

Reward and Incentives for using Digital payments

To encourage customers and traders to embrace digital transactions, PM has launched two schemes, one is Lucky Grahak Yojana (for customers) and other is DigiDhanVyapaar Yojana (for traders).

For more information visit- https://digidhanlucky.mygov.in/

'DigiDhan' Abhiyan -'DigiShala' TV channel and cashless India portal-

To promote digital and mobile banking government is working at all level. The DigiDhan Abhiyan is a campaign to promote cashless transactions. So far, more

than 25 lakh people in rural areas of the country have adopted digital modes of payments through 'DigiDhan Abhiyan' programme. Over 55,000 merchants have started offering digital payment options to rural customers across various districts and blocks in India.

Over 70 per cent of the rural citizens have adopted e-wallets, 16 per cent opted for Unified Payment Interface (UPI) and the rest looked at Unstructured Supplementary Service Data (USSD), Aadhaar Enabled Payment System (AEPS) and Cards/Point of Sale (PoS).

As a part of DigiDhan Abhiyan government has also launched a free to air channel called **'DigiShala'** to impart information to people from rural and semi-urban areas about digital payment systems. This channel will educate people through step by step demo on making payments using UPI, USSD, Aadhaar enabled payment systems, e-wallets, cards etc. The government has also launched a portal called **cashlessindia.gov.in** to promote awareness about digital transactions.

Through digitalization, we are moving toward a cleaner and transparent economy. The pace at which people of our country are adopting the digital payment system is remarkable! A collaborative approach to **digital literacy** and **a strong cyber security infrastructure** will make this initiative a success and it is good to see that our government is already working in this direction.

Here I would like to share some information about PMJDY. **PMJDY- Pradhan Mantri Jan Dhan Yojana** is a big success too. Guinness World Records recognizes the achievements of PMJDY. It is a financial inclusion drive of Prime Minister Mr. Narendra Modi. It was launched two and a half years back, to include unbanked and under-banked people in the mainstream of economic growth. So far, these unbanked and under-banked people have deposited Rs. 63836.65 crore in PMJDY accounts! You can view the live progress report at https://pmjdy.gov.in/account

Under this scheme:

1. Account holders will be provided bank accounts with no minimum balance.

2. RuPay debit cards will be issued.

3. Accidental insurance cover of Rs.1 lakh (US$1,500).

4. After six months of opening of the bank account, holders will be eligible for Rs. 5,000 (US$74) overdraft from the bank.

5. With the introduction of new technology introduced by National Payments Corporation of India (NPCI), a person can transfer funds, check balance through a normal phone which was earlier limited only to Smartphone.

6. Mobile banking for the poor would be available through National Unified USSD Platform (NUUP) for which all banks and mobile companies have come together.

All initiatives of the government are linked to each other and aligned with the broad vision of the government. The core philosophy behind our current government's approach is Integral Humanism or 'Ekatma Manav Darshan' which is given by the great economist and visionary Pandit Deendayal Upadhyaya. The success of all these initiatives has shown that Integral Humanism is a right approach to lead the socio-economic development of the country. You can read about Integral Humanism in detail at - http://ihse.in/integral-humanism/

Digital India and Digital Payments – Cashless Economy

India is becoming a digitally empowered society and knowledge economy. Digital India will be a 'Faceless, paperless and cashless' India. Demonetization has transformed the Indian payment system completely. Now the remotest parts of the country are embracing the advanced payment mechanisms!

People of our country are quite smart and open to adopting new technologies. The success of Demonetization has proved that Prime Minister Mr. Narendra Modi understands India better than anyone else! The systems that were not even imagined before demonetization, within 2-3 months become a part of the routine life of Indian citizens. This is the highest level of trust and acceptance that citizens of any country have ever shown! The countries around the world are amazed to see this…Prime Minister Mr. Narendra Modi has rightly said "On the one hand are those who talk of what people at Harvard say, and on the other is a poor man's son, who through his hard work, is trying to improve the economy. In fact, hard work is much more powerful than Harvard."

Let's take a look at different digital payment modes/systems:

UNIFIED PAYMENTS INTERFACE (UPI)

Unified Payments Interface (UPI) is a payment system launched by National Payments Corporation of India which facilitates the fund transfer between two bank accounts on the mobile platform instantly. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience. Each Bank provides its own UPI App for Android, Windows and iOS mobile platform. UPI offer services like Balance Enquiry, Transaction History, Send/Pay Money (through virtual payment address/IFSC or Mobile Number+MMID or Aadhaar Number) and Collect Money using the virtual address.

An MPIN (Mobile banking Personal Identification number) is given to the banking customer once they register for UPI which is required to be entered while confirming a money transfer.

UNSTRUCTURED SUPPLEMENTARY SERVICE DATA (USSD)

Unstructured Supplementary Service Data (USSD) is a protocol used by GSM cellular telephones to communicate with the service provider's computers. The innovative payment service *99# works on USSD channel. This service allows mobile banking transactions using basic feature mobile phone, there is no need to have mobile internet data facility for using USSD based mobile banking. It is envisioned to provide financial deepening and inclusion of underbanked society in the mainstream banking services.

- *99# service has been launched to take the banking services to every common man across the country. Banking customers can avail this service by dialing *99#, a "Common number across all Telecom Service Providers (TSPs)" on their mobile phone and transact through an interactive menu displayed on the mobile screen.
- Key services offered under *99# service include, interbank account to account fund transfer, balance enquiry, mini statement besides host of other services.
- *99# service is currently offered by 51 leading banks & all GSM service providers and can be accessed in 12 different languages including Hindi & English.
- *99# service is a unique interoperable direct to consumer service that brings together the diverse ecosystem partners such as Banks and Telecom Service Providers.
(Source: NPCI - http://www.npci.org.in/)

AADHAAR ENABLED PAYMENT SYSTEM (AEPS)

Financial inclusion is one of the primary goals of AEPS. AEPS enables a bank customer to use his/her Aadhaar to access the bank account and perform basic banking transactions like balance enquiry, cash deposit, cash withdrawal, remittances that are intrabank or interbank in nature through a Business Correspondent called 'Bank Mitra' and Micro ATMs. The objective of AEPS is to empower each and every citizen of the country and for that AEPS is using the technology to enable the banks to go where the customer is present and to ensure interoperability among different systems across different banks.

BHIM App- BHIM (Bharat Interface for Mobile) App–On 30th December 2016 Prime Minister Shri Narendra Modi launched a mobile app called BHIM (Bharat Interface for Mobile) for the Unified Payment Interface (UPI). The Aadhaar based payment and thump impression authentication kind of features are integrated into this app to make small merchants and their customers (particularly from rural/remote areas) to participate in the cashless economy.

MICRO ATMs

Micro ATMs are designed for rural or remote parts of the country, where full-fledged ATMs or banks can't be set up or either existing ones are not functional. Micro ATM is an advanced version of Point of Sale with features like biometric scanner attached to it. Micro ATMs are handheld devices. All that a customer has to do is use their debit card as they would in an ATM. The moment the card is swiped the micro ATM connects it to the core banking system and debits or credits cash from their account. To collect or release money the bank representative carrying the Micro ATM will help.

The basic transaction types that Micro ATMs support are Deposit, Withdrawal, Fund transfer and Balance enquiry. Micro ATMs helps to connect with the customers of rural areas who far away from the branches.

POINT OF SALE TERMINAL

A Point of Sale terminal (POS terminal) is an electronic device which is used to process card payments at retail locations. POS system streamlines retail operations by automating the transaction process and tracking important sales data. A basic system includes an electronic cash register and software to streamline data collected from daily purchases. Retailers can use a network of data-capture devices, including card readers and barcode scanners along with PoS.

PoS are of three types:

Physical PoS- Handheld Device with card and /or biometric reader.

Mobile PoS- A mobile app that works on Smartphone, it needs an integrated card/biometric reader.

Virtual PoS- A window or web application, which can get accessed through Smartphone or web browser. Virtual PoS uses e-payment gateway and virtual a/c for transactions.

Physical PoS systems have helped small merchants/retailers to adopt digital payments quickly. The cab drivers, vegetables/fruits vendors, tea vendors and other street stall owners have adopted Physical PoS system because it is easy to carry/use and helps them in tracking the transactions too.

MOBILE WALLETS

A mobile wallet is a way to carry cash in digital format. After linking your credit card or debit card information to mobile wallet application you can transfer money using that app. Instead of using your physical plastic card to make purchases, you can pay with your Smartphone, tablet, or smart watch. An individual's account is required to be linked to the digital wallet to load money in it. Most of the banks offer their e-wallets and some private players e.g. Paytm, Freecharge, Mobikwik, Oxigen, mRuppee, Airtel Money, Jio Money, SBI Buddy, itz Cash, Citrus Pay, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, SpeedPay etc.

MOBILE BANKING

Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct different types of financial transactions remotely using a mobile app. Each Bank provides its own mobile banking App for Android, Windows and iOS mobile platform.

INTERNET BANKING

Internet banking, also known as online banking, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the bank's website.

Different types of online financial transactions are:

National Electronic Fund Transfer (NEFT)

Real Time Gross Settlement (RTGS)

Electronic Clearing System (ECS)

Immediate Payment Service (IMPS)

BANKING CARDS (DEBIT / CREDIT / CASH / TRAVEL / OTHERS)

Banking cards offer consumers more security, convenience, and control than any other payment method. The wide variety of cards available – including credit, debit and prepaid – offers enormous flexibility, as well. These cards provide 2-factor authentications for secure payments e.g. secure PIN and OTP. RuPay, Visa, MasterCard are some of the examples of card payment systems. Payment cards give people the power to purchase items in stores, on the Internet, through mail-order catalogues and over the telephone. They save both customers and merchants' time and money and thus enable them for ease of transaction.

These cards can be used at PoS (Point of Sale) machines, ATMs, micro ATMs, Shops, wallets, online transactions, and for e-commerce websites. International cards can be used across globe for multiple currencies.

(Source of the fact: Wikipedia and http://cashlessindia.gov.in/digital_payment_methods.html)

RuPay Card - RuPay is India's own credit/debit card, launched by the National Payments Corporation of India (NPCI). It's a domestic, open loop, and multilateral system of payments in India. In India, 90% of credit card transactions and almost all debit card transactions are domestic but the cost of transactions was high due to the monopoly of foreign gateways like Visa and MasterCard. RuPay facilitates electronic payment at all Indian banks and financial institutions. RuPay cards got a major boost through the Pradhan Mantri Jan Dhan Yojana as RuPay cards were issued to all Jan Dhan accounts.

Some notable initiatives of the government to promote Digital Payments:

--Toll Free Helpline - The government has launched a toll-free helpline – 14444 to address consumer queries on digital payments. The helpline will address questions regarding the use of various platforms. The helpline 14444 is available in North as well as Eastern part of the country in English and Hindi, soon it will get extended to pan India, and in other languages[2].

--DigiDhan Abhiyan – By the end of December 2016, the government through its outreach campaign 'DigiDhan Abhiyan' has enrolled over 1 crore rural citizens for

digital modes of payment. Over 3 lakh merchants have started offering digital payment options to rural customers across many districts and blocks in rural India.

Madhya Pradesh and Chhattisgarh have recorded the highest number of enrolments with citizen enrolment crossing 15 lakh and 12.5 lakh respectively. Chhattisgarh and Uttar Pradesh have recorded the highest number of merchant enrolments crossing 60,000 merchants each. The common service Centres and the village-level entrepreneurs are participating in the DigiDhan Abhiyan. The DigiDhan Abhiyan aims to cover 2 lakh CSCs across the rural areas and enable them to become Digital Financial Education Centres. The CSCs will train people about the various digital financial solutions and also enable them to use various modes of electronic payment systems [3].

--In November 2016, to create awareness about digital payments across six crore traders and merchants in the country, USAID, CAIT and Finance Ministry of India have launched an initiative called CATALYST. The programme will comprise campaigns that will include digital marketing, workshops, seminars, information sessions and digital payments fairs in local markets to acquaint merchants with different payment methods [4].

--Lucky Grahak Yojana and DigiDhan Vyapar Yojana- To promote digital payments systems among citizens government has launched two digital lottery schemes: Lucky Grahak Yojana for consumers and DigiDhan Vyapar Yojana for merchants. Only transactions processed through RuPay cards, USSD, UPI and AEPS are part of the schemes.

The National Payments Corporation of India (NPCI) announced that the winners of the lucky draw will receive a message from their banks and the reward money will be credited into their bank accounts over the next 24 hours [5].

For more information visit https://digidhanlucky.mygov.in/

--E-Payment portal - PayOnline is an online payment platform to pay government taxes, bills and fees online. It is an electronic receipt portal. It's a platform for all government payments including inter- ministerial, vendor transactions or small payments by the citizen of India for government services [6].

For more information you can read -
http://digitalindia.gov.in/writereaddata/files/ggd/deity/4%20Launch%20of%20ePayment%20Portal.pdf

The pace at which people of our country have adopted digital payments options is remarkable! The demonetization was a bold step to end parallel economy and to transform our economy into a cashless and digital economy. The success of this initiative is a success of Digital India too. When Demonetization drive was going on a number of people have written about the countries which have tried Demonetization but failed, and they were asking PM Modi to take notes from those countries. But post demonetization success there is not a single piece of work on how India has achieved the success on this mission…Now all other countries around the world can take some notes from Prime Minister Mr. Narendra Modi's approach, vision and leadership!

Digital India and Smart Cities Mission

India is going through a big transformation and we are ready to embrace the best technological trends from the whole world. Our government is working to build the infrastructures that can support the Digital India vision of Prime Minister Shri Narendra Modi. These infrastructures will help us to leverage information and communication technology for effective citizen services, virtual education, transparent governance system and remote healthcare etc. India is going to transform the way government, citizens and businesses interact.

PM Narendra Modi's smart city mission has opened a plethora of business opportunities in India. Smart City Mission is a part of Digital India vision and it aims to transform 100 cities by 2020. In the 2016-17 budget, for smart city programme Rs 3,205 Cr is allocated. For smart city project selection, our government is using a unique competitive process called 'smart city challenge'. This approach has inspired the cities across the country to formulate their own unique vision, mission, and Smart City proposal. Participating cities are engaging their citizens in different innovative ways, developing stronger Smart City proposals, and matriculating through a process that will ensure that the cities selected are best positioned to realize gains. Such kind of healthy competition among cities is a good sign!

So far the Urban Development Ministry has approved smart city plans of 60 cities. 20 cities were announced in January 2016, followed by 13 in May and another 27 in September. Five cities Nagpur, Indore, Surat, Vadodara and Udaipur have emerged among the top cities outperforming other cities in Smart Cities Mission.

What makes a city smart? A city with advanced infrastructure, better quality of life, smart solutions for water, power, sanitation and solid waste management, efficient urban mobility and public transport, robust IT connectivity, e-governance and citizen participation is called a smart city. Our government's smart cities vision aims to modernize the existing mid-sized cities as satellite towns of larger cities. The **key strategic components** in smart city mission are **city improvement, city renewal and city extension** plus a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city.

India's Smart cities mission is not a typical government project with fixed model and rigid constraints, there is a great scope for innovation in this programme. According to smart city mission's official sources, the government is not prescribing any particular model to be adopted by the Smart Cities. The approach is not 'one-size-fits-all'; each city has to formulate its own concept, vision, mission and plan that are appropriate to its local context, resources and levels of ambition.

The objective of Smart Cities Mission is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. The key technologies that make a smart city work are smart energy, smart transportation, smart data, smart infrastructure, smart mobility and smart IoT devices.

Let's take a look at some important features of India's Smart city Mission

The core infrastructure elements in a Smart City would include:

- Adequate water supply
- Assured electricity supply
- Sanitation, including solid waste management
- Efficient urban mobility and public transport
- Affordable housing, especially for the poor
- Robust IT connectivity and digitalization
- Good governance, especially e-Governance and citizen participation
- Sustainable environment
- Safety and security of citizens, particularly women, children and the elderly
- Health and education.

Smart City Mission's Convergence with Other Government Schemes

At the planning stage itself, cities must seek convergence in the Smart City Proposal with AMRUT, Swachh Bharat Mission (SBM), National Heritage City Development and Augmentation Yojana (HRIDAY), Digital India, Skill development, Housing for all, construction of Museums funded by the Culture Department and other programs connected to social infrastructure such as Health, Education and Culture.

(For more details you can read Smart City Mission's Guidelines: http://smartcities.gov.in/writereaddata/smartcityguidelines.pdf)

Smart Grid: The Energy Infrastructure of Smart Cities- The energy infrastructure is one of the most important aspects of Smart City. The renewable sources of energy make smart city energy efficient. In a smart city, the power grids should be smart too. Efforts to transform traditional power grids are going on in India and across the world. The convergence of Smart Grids with Renewable energy sources is called the "energy internet" of the future. A few days back our government has released its Smart Grid vision and roadmap. Our government has taken pioneering steps in bringing Smart Grid technology to all facets of power supply value chain. Ministry of power has allocated funds for 14 smart grid pilot projects in different states.

(For more technical details visit National Smart Grid Mission (NSGM) Website: http://www.nsgm.gov.in/)

Cities are considered as the center of economic growth of a country. As of 2011 census, there are some 497 cities in India. Each city offers some unique advantages. Transformation of these cities will help to leverage these advantages. The Smart Cities Mission is playing a crucial role in empowering these cities and to make each city to contribute to the growth of the country.

India's Smart Cities Mission is an example of Team India spirit and participatory development. Smart Governance, Smart Energy, Smart Environment, Smart Transportation, Smart IT and Communications, Smart Buildings, Smart Health Hospitals, and Smart Education are 8 pillars of Smart Cities Mission and our government is working aggressively on each of these areas with a comprehensive, interconnected and vision oriented approach!

Digital India and Smart Villages

The Smart Village is about combining the spirit of villages and facilities of cities. Prime Minister Mr. Narendra Modi used to say that "India's economic progress can't only depend on a few cities. Our villages must also contribute to country's growth."

Our government is working on a mission mode to transform rural India. Government's initiatives like National Rurban Mission-the idea of a smart village (Rurban = Rural + Urban), Innovative Crop Insurance Scheme – 'Minimum Premium, Maximum Insurance for farmers', Soil Health Card (SHC) scheme, soil testing laboratories, PM Krishi Sinchai Yojana, Skill India etc., are very encouraging. The rural population in India stands at 833 million, constituting almost 68% of the total population. The large parts of rural areas in India are not stand-alone settlements but part of a cluster of settlements, which are relatively proximate to each other. These clusters have locational and competitive advantages and offer a great potential for growth.

On 21st February 2016, Prime Minister Mr. Narendra Modi has launched the 'Rurban Mission' an initiative to develop 2500 smart villages and 300 rural growth clusters by 2019. The objective of the National Rurban Mission (NRuM) is to stimulate local economic development, enhance basic services, and create well planned Rurban clusters[9].

India is the world's 3rd largest Smartphone users market. The data shows that our rural India has also got an internet friendly and exploratory mindset and the internet and Smartphone users in rural India are continuously increasing. According to some recent reports, the usage of social media in rural India has grown by 100 per cent. **Let's take a look at some of the key initiatives of the government to develop smart villages.**

-- Bharat Net- It is the world's largest rural broadband connectivity project using optical fibre to connect each of 2.5 lakh gram panchayats with a minimum of 100 Mbps bandwidth. Bharat Net is the infrastructure backbone of Digital India. The progress of Bharat Net project is good, Phase-I to connect 100,000 gram panchayats is scheduled to be completed by March 2017. By December 2018,

Bharat Net will provide connectivity to all 250,000 gram panchayats across the country.

--Digital Village- Last year, Facebook has partnered with Bharat Sanchar Nigam Ltd. (BSNL) to create 100 Wi-Fi hotspots in rural India. In 2017, the government has decided to provide free Wi-Fi to 1,050 rural villages across the country. The government has launched a pilot project called 'Digital Village' this project will run on PPP model and will be driven through CSCs.

-- Rural post offices to provide online services- Government has decided that all the 1.30 lakh rural post offices should also become common service centres (CSCs). Implemented under the National e-Governance Plan and formulated by the Department of Electronics and Information Technology, the CSCs are ICT-enabled front-end service delivery points at the village level for delivery of government, financial, social and private sector services in the areas of agriculture, health, education, entertainment, FMCG products, banking, insurance, pension and utility payments etc.

--BPOs in small towns- The main goal of Digital Literacy is to enable people for a better livelihood and for this government is also pushing Rural BPO Programme, for setting up business process outsourcing (BPO) units in small towns and villages. The government is offering a subsidy of up to 50 percent of the capital expenditure or Rs 1 lakh per seat, there is a target of creating 45,000 seats in the next two-three years.

--India Post Payment Banking- The India Post Payments Bank (IPPB) has been recently incorporated as a Public Limited Company under the Department of Posts with 100% GOI equity. IPPB is offering demand deposits upto a balance of Rs 1 Lac, digitally enabled payments and remittance services of all kinds. IPPB will also provide access to third party financial services. India Post has about 1, 54,000 post offices, of them 90% are in rural areas. India Post also has 2, 96,000 agents in the rural areas. Financial Literacy, Financial Inclusion, Streamlining Payments and Ease of Accessibility are some of the key features of IPPB.

--GARV (Grameen Vidyutikaran App) - This app allows users to track the progress of rural electrification efforts in the country. The application features a dashboard 'GARV DASHBOARD' that provides real time status about the rural

electrification project – **Deen Dayal Upadhyaya Gram Jyoti Yojana.** It shows a clear status on how many villages have been electrified, how many are left, how much work is under progress etc. It's a very good initiative for building transparency and accountability in the governance system! No other government is the past has provided such level of visibility to the people.

-- E-NAM (National Agriculture Market) - National Agriculture Market is an online platform, that will soon integrate 585 wholesale markets across India. It's a turning point for the agriculture sector. Last year only 21 Mandis from eight states have been selected for the pilot launch but by March 2017 some 250 Mandis have been enrolled on this platform. E-NAM promotes uniformity, streamlining of processes across the integrated markets, removes information discrepancy between buyer and sellers and promotes real time price discovery based on actual demand and supply. This platform also promotes transparency in the auction process and access to a nationwide market for the farmer. This step will bring a competitive advantage and transparency in the trading. It will definitely benefit the farmers, traders, and consumers. For more information visit - http://www.enam.gov.in/NAM/home/index.html

A Smart Village cannot be imagined without Digital Literacy. Digitally literate villagers would be able to use the digital services/facilities of the Smart Village. Their familiarity with digital technology is crucial and for this government of India has launched the National Digital Literacy Mission.

--National Digital Literacy Mission- Digital India and National Digital Literacy Mission (NDLM) complements each other. The success of one is dependent on the outcomes of other. 100 % digital literacy is needed to make India a truly digitalized society. Our government is running Digital India and Digital Literacy in parallel, as making one person in every family digitally literate is one of the integral components of the Prime Minister's vision of Digital India.

"The pace at which people are taking to digital technology defies our stereotypes of age, education, language and income. We must bridge the digital divide and promote digital literacy in the same way that we seek to ensure general literacy", these are some of the inspiring words of our PM Mr. Narendra Modi.

National Digital Literacy Mission (NDLM) or Disha has been formulated to impart IT training to 60 lakh persons, across all the States/UTs of the country so that the

non-IT literate citizens can actively and effectively participate in the democratic and developmental process. Under the digital literacy program, 55 lakh people have been trained and around 6 crore additional households are targeted to cover in the next three years.

Digital Literacy Mission is running on a PPP model, Government, NASSCOM and private players like HP, Intel, SAP, Microsoft, Google, Capgemini, and HCL are participating in this programme. There are huge opportunities for startups too. Popular Ecommerce brands like Snapdeal, Flipkart, Amazon and eBay are also participating in this by giving digital literacy training to small traders; it's a win-win situation for government and businesses.

(Source of the facts about smart village and digital literacy: different newspapers and government's official portal)

For more information you can visit- http://www.ndlm.in/

 http://smartcities.gov.in/content/

Smart Village program offers great opportunities for technology, water management, agro-tech, solar energy, waste management, infrastructure and financial players. Technology giants like Cisco, Microsoft, Google, IBM and Ericsson etc., are actively participating in Smart Village projects across the country. Some leading banks like SBI and ICICI are also working with the state governments to develop digitally smart villages.

Prime Minister Shri Narendra Modi used to say that every citizen needs to act as a change agent for the growth of the country. During Startup India, Standup India launch he appealed to youths of the country to launch their startups in agriculture sector too. The government is encouraging rural youths to start their startups/MSME/SMEs in the farming/agriculture sector and to facilitate their financial needs 'Pradhan Mantri Mudra Yojana' is launched. Our rural population is creative and now they are using skilled methods for developing innovative solutions to solve their routine complex problems.

I observed the pace and scale of these initiatives carefully and I must say that government is aggressively pushing the development of rural India. Transparency, Accountability and Traceability are some of the qualities that even big business organizations find difficult to implement in their processes. But within two and a half years these qualities are visible in our country's governance system. Smart

Villages, Rural Electrification, Digital Literacy and Financial Inclusion through JAM (Jan-Dhan Accounts, Aadhaar and Mobile Governance) are different dots connected with the broader vision of transforming the Real India - Rural India.

Digital Transformation of India Post

Mobiles, internet and Smartphones have changed the way we communicate. In the era of digital and social media, no one can imagine that digital transformation of an obsolete communication medium like postal service is possible. Two and a half years back, the government has taken the decision to revamp the whole system and to transform India Post digitally, its results are remarkable! India post has seen an unprecedented growth in its profit, a growth of over 500%!

It's about reimagining a legacy and crucial system. About the transformation of India's Postal Department Prime Minister Mr. Narendra Modi has said that "I see technology as a means to empower and as a tool that bridges the distance between hope and opportunity. Digital India as a movement has brought some great innovations in the Department of Posts. It's heartwarming to see the postal network continuing to be the lifeline of the country at such a massive scale. I wish everyone all the best to scale this up to even greater heights in the coming time."

The reach and scale of India post are massive. It is the most widely distributed postal system in the world. As of 31 March 2015, the Indian Postal Service had 154,939 post offices, of which 139,222 (89.86%) were in rural areas and 15,826 (10.14%) in urban areas. It had 25,560 departmental post offices and 129,379 Gramin Dak Sevak, branch post offices. On average, a post office serves an area of 21.22 square kilometers and a population of 8,054. Because of its reach and presence in remote areas, the Indian postal service is also involved in other services such as small savings banking and financial services.

(Source of the facts: https://en.wikipedia.org/wiki/India_Posts)

To match the pace of Digital Economy, our government has decided to completely transform the postal department into a multi-service agency. The Department of Posts' IT Modernization Project received Rs 4,909 crore for modernization, digitization and networking of around 1, 55, 000 post offices. The Rural Information and Communication Technology (RICT) project will digitize 1,29,323 rural post offices through a handheld computing device, connecting them with the help of SIM card based network and ensuring proper power supply backup with the help of solar energy. All 1, 29,323 post offices in rural areas across the country will get digitally connected.

During the last two and a half years, Department of Post has achieved new milestones. India Post is emerging as a cost-effective alternative to conventional banks.

Let's take a look at the transformed role of India post:

E-Post – E-post is a combination of an electronic and physical message. E-POST allow customers to send messages as a soft copy through the internet and at the destination, it will be delivered to the addressee in the form of hard copy through a network of more than 1, 55,000 Post Offices. E-POST can also be availed by the corporate customers, by having a business agreement with India Post[7].

India Post and E-Commerce- E-Commerce companies like Amazon, Flipkart, Yepme, Shopclues, Naaptol, etc. and 800 other companies have tied up with the postal department for smooth delivery of their products.

India Post's initiative to boost this partnership:

--34 Major land routes established for transmission of parcels.

--950+ Mail Vans fitted with GPS devices for Online Mail Monitoring.

--57 integrated state-of-the-art parcel Centres setup.

The partnership of India Post and E-commerce companies has achieved remarkable growth. India Post's revenue from E-Commerce players particularly through their 'Cash on Delivery' model is setting new records! By January 2016, India Post's revenue crossed Rs1000 crore and it is amazing to see that majority of this growth is driven by tier-2 and rural India's customers. India Post has a reach across Tier-2 /Tier-3 cities, as 90% of 155,000 post offices are situated in Tier-2 and Tier-3 cities, this has helped e-commerce brands to reach to the customers of untapped regions of the country. It's a win-win partnership!

India Post Payments Bank and Financial Inclusion – On 30th January 2017, IPPB has been incorporated as a Public Limited Company under the Department of Posts with 100% GOI equity. IPPB is offering demand deposits such as savings and current accounts up to a balance of Rs 1 Lac, digitally enabled payments and payment services of all kinds between entities and individuals and also provide

access to third-party financial services such as insurance, mutual funds, pension, credit products, forex etc.

India Post Payment bank is a revolutionary step! It is one of the most effective ways to ensure financial inclusion. IPPB has already launched its pilot in Ranchi and Raipur and it plans to scale up its branches to 650 by the end of September 2017. Enabling unbanked and under-banked people from tier-2, tier-3 cities, and rural areas to participate in the mainstream is one of the key focus areas of IPPB.

The three key elements of IPPB's operating philosophy are **Convenient Banking, Inclusive banking** and **Efficiency of banking network.** This initiative will definitely give a strong push to financial inclusion drive of Prime Minister Mr. Narendra Modi.

(Source of the facts: https://en.wikipedia.org/wiki/India_Posts)

India Post and CSCs –Government has decided to offer the service of CSCs (Common Service Centres) through post offices too. Now people from rural areas will be able to access all the e-Services provided by the Government, at their local post offices. This will make Digital India more inclusive and effective.

Benefits:

--No need for additional infrastructure for Common Services Centres in all areas.

--Enabled e-Services to reach the remotest corners of India via a widespread network of India Post.

--Provides single access point for people to access postal, banking & insurance services along with other Government information & benefits.

Online delivery of GangaJal - India Post has launched an innovative scheme to deliver holy GangaJal from Gangotri and Rishikesh to people's doorstep. This is the first product in which India Post is involved in end to end processing from bottling to transportation to sale.

Some other noticeable achievements of India Post are:

--Solar Powered biometric hand-held devices are being supplied to 1.3 lakh rural post offices.

--3 lakh policies issued under Prime Minister Suraksha Bima Yojana, PM Jeevan Jyoti Yojana and Atal Pension Yojana through Post Offices.

--Maximum sum assured in Rural Postal Life Insurance increased from Rs. 5 Lakh to Rs. 10 lakh.

--Maximum sum assured in Postal Life Insurance increased from Rs. 20 lakh to Rs. 50 Lakh.

--Speed post ranked as the best express mail delivery service by CAG.

(Source of the facts Wikipedia and http://digitalindia.gov.in/ebook/dop/)

The digital transformation of 160+ years old India Post is remarkable! It has brought a number of benefits to government, citizens and businesses. IT Minister Mr. Ravi Shankar Prasad has rightly said that "The Department of Posts remains a key cog in the basic functioning of India and Digital India has provided it with a great push to achieve much more than anyone could have ever imagined."

Indian Railways – 'Innovation in Administration'

Indian railway's active participation in Digital India is remarkable. In the previous edition of this book 'Dream of Digital India Research Report 2014-15', I shared the information about different apps and services launched by Indian railways under Digital India programme. I also mentioned that Railways has adopted a unique approach which I called 'innovation in administration' and that is utilizing digital and social media for government services. The way Indian Railways has turned its Twitter handle into a passenger helpline inspired other ministries and departments too and we have seen the launch of 'Twitter Samvad' through which any Indian citizen can access real-time information from different government ministries and departments.

Last year Indian Railways has launched a mobile app for paperless unreserved tickets called 'utsonmobile' to eliminate the need for printing of unreserved tickets. Indian Railways and Google have collaborated for providing high speed Wi-Fi access at 400 railway stations. Indian Railways has taken a number of steps to leverage digital and social platforms for the betterment of their services.

Let's take a look at some major initiatives taken by Indian Railways during 2016:

--Mobile Apps- In February 2016, Indian Railways has launched 3 mobile applications that include handheld terminals for Indian Railways travelling ticket examiners (TTEs), a paperless unreserved ticketing mobile application and a facility for E-booking of disposable linen on trains.

--IRCTC's pilot project 'E-Bedroll'- The 'E-Bedroll' would allow passengers to avail a bedroll kit by online booking. In addition, a passenger can also avail this facility over the counter at selected IRCTC outlets at the stations.

--E-Catering - During 2016, Railways has extended the station-based e-catering service to 408 stations. Indian Railway Catering and Tourism Corporation Ltd. (IRCTC) had earlier introduced the facility at 45 stations on a trial basis and after the success of trial, it has been extended to 408 stations. The E-Catering facility

allows travelling passengers to order food of their choice from leading Railway and private caterers to be delivered at the stations.

--Digital Payments - In the Demonetization and cashless economy drive of the government, Indian Railways played a pro-active role. The Railways is going to launch two mobile applications enabling ticket reservation through all wallets and cards. Indian Railways has also asked the leading banks to provide around 15,000 Point of Sale (PoS) machines at reservation counters, to make railway travel bookings digital.

--Rail Connect App- In January 2017, Indian Railways has launched IRCTC Rail Connect app. The new app offers the power of next-generation e-ticketing systems like high performance and enhanced security.

Some of the main features of this app are[8]**:**

- 24/7 service with no time-based checks.
- Synchronization of mobile app with NGET -Next Generation E-ticketing system.
- Simple and easy user interface.
- Supports general, ladies, tatkal and premium tatkal quota booking.
- Facility of Cancellation and filing of TDR for tickets booked through website. Features like current booking, boarding point change, PNR enquiry, Tatkal booking are provided.
- Advanced security features of self-assigned PIN to login without entering username and password on each login.
- Integrated with IRCTC e-wallet for faster and hassle-free transactions.
- Users can view and cancel old mobile app tickets also.
- The new app has also been linked to 40 banks so customers can pay for tickets from these accounts.

Wi-Fi enabled railway stations, integrated mobile applications, e-commerce platforms, bar-coded tickets and project management/monitoring through the use of drone and geospatial-based satellite technology are some of the digital goals of the Indian Railways.

The transformation of 163 years old Indian Railways is one of the major achievements of Digital India program. The role that Indian Railways is playing in Digital India is remarkable! Indian Railways has shown that if leadership's approach is serious, the legacy systems and processes can get transformed! It is the first government ministry which has proved that 'innovation in administration' is possible. We will see many more exemplary initiatives in the future!

Digital India Push in Northeast India

Our Northeast India is vibrant. Northeast that comprises the contiguous seven sister states Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura and the Himalayan state Sikkim, is blessed with rich cultural and natural resources.

Prime Minister Narendra Modi used to refer northeast as India's 'Natural Economic Zone.' The North East region is one of the most strategically important parts of India too, therefore developing and transforming Northeast states is one of the top priorities of our current government. Under the pro-active 'Act East Policy', the government is working to improve the connectivity of these regions through road, rail, telecom, power, waterways and I-ways.

Our Northeast states have great potentials. The entrepreneurs of these are eager to participate in the mainstream of economic growth. The current government's initiatives to promote entrepreneurship, venture funds, start-ups and skill development in these states are remarkable! Accessibility and connectivity are the two critical elements in Northeast development and digital technologies can help in this process.

Let's take a look how Digital India is transforming Northeast India:

--Karang, a small lake island in Manipur, has become the country's first cashless island. The people of Karang, one of the most remote regions, have set an example for the rest of the country. From small merchants to boat service providers, the way these people have adopted cashless transactions and digital mediums are remarkable.

--Assam government wants to develop 25000 digital villages by 2021. The state government has invited private players to participate in this process as the government is running this mission in PPP mode.

--Last year Assam government has taken a very good step to shift all budgetary payments and transactions including daily wages to digital payment mode. A detailed roadmap has been prepared for making all payments and receipts in the state government digitally in a time-bound manner. For all non-government entities

like private hospitals, educational institutions, shops and establishments, the government departments concerned will issue advisories for shifting to digital payment mode within a fixed timeframe[11].

--Assam government has also taken an E-Gram initiative. Under E-gram government is activating IT initiatives in all the revenue villages of the state and promoting digital clubs in the villages that will work as hubs of all IT activity.

--In November 2016, the Arunachal Pradesh government has flagged off the Digital India Outreach Campaign Van. The van outreach program is for creating awareness among the citizens about various products/services launched under digital India so that people can start using these products like Digital Lockers, E-Sign, e-governance services, Scholarship portals and other government's websites for their convenience. This campaign also conducted registration drives for Digital India services.

--The Department of Administrative Reforms and Public Grievances, Arunachal Pradesh has launched a project called e-office, to improve efficiency in government processes and service delivery mechanisms. The National Informatics Centre is the technology partner in implementing an e-office project. Arunachal is among one of the first states in the country to incorporate e-sign as part of e-office[12].

--**North East BPO Promotion Scheme (NEBPS) -** This scheme will provide the capital support in the form of Viability Gap Funding to eligible BPO companies, to encourage the growth of the IT industry in North East Region through BPO operations. The objective of this scheme is to encourage companies to migrate their BPO Units to smaller (Tier-II/III) cities in North Eastern Region [13].

--Last year in the Month of March, State Bank of India has opened its first digital branch in Northeast. The Chief Minister of Meghalaya inaugurated the branch of InTouch digital bank. InTouch digital bank offers Debit Card Printing Kiosks (DCPK), Interactive Smart Tables, Interactive Digital Screens, and Remote Experts through video call etc. One of the key features InTouch bank is that you can open your savings bank account through Account Opening Kiosk (AOK) within 15 minutes.

--Amazon India has partnered with National Skill Development Corp (NSDC) and Nagaland state government to drive digital literacy among women entrepreneurs of Nagaland. Amazon will provide them a global platform to sell their products at zero initial cost. Amazon India will conduct training and skill development workshops to help the women entrepreneurs in Nagaland. These workshops will help them in understanding the technicalities related to online selling[15].

--BSNL plans to connect 1,518 gram panchayats with Optical Fibre Cable (OFC) in Assam to ensure rural connectivity. BSNL will provide the 3000 hot spots at important places. Assam government has set the target to provide television, internet and telephone connections through a single connection, to provide financial benefit to the people[16].

-- Last year in the month of August, the Department of Information Technology and Communication in association with National Institute of Smart Government (NISG) conducted a week-long training programme called 'Champions Skill Enhancement Programme' under the 'Skill India' project in Nagaland capital.

--Barsimaluguri in Baksa district, a remote village in Assam along the Indo-Bhutan border has become the first smart village in northeast India. Barsimaluguri achieved 100% toilets, solar power, and pure drinking water and it is now a model village in the region. Barsimaluguri is the first village to have a reverse osmosis plant in the region[17].

Previous central government's ignorance is one of the key factors behind the lack of growth of Northeast states. But the development of Northeast is one of the top priorities of the Prime Minister Mr. Narendra Modi. He has defined Northeast India as the organic basket of India and as the gateway to South East Asia markets. In the Union Budget 2016 more than Rs.30, 000 crores have been allocated for the North East region. Mr. Narendra Modi use to say that "it is my conviction that we have to bring this region at par with the other developed regions of the country."

Our government is working on a mission mode to transform Northeast India. The government is working to improve the connectivity of the Northeast states through Highways, Railways and I-ways. Development of Northeast will boost the spirit of Team India and New India.

Digital India and Digital Identity – Aadhaar

The digital identity platform – Aadhaar is helping to prevent the leakage in the governance system. Aadhaar is one of the key elements of the JAM vision (JAM - Jan Dhan Accounts, Aadhaar card and Mobile Governance). Prime Minister Mr. Narendra Modi used to say that "JAM vision; will serve as the bedrock of many initiatives to come. For me, JAM is about Just Achieving Maximum. Maximum value for every rupee spent; Maximum empowerment for our poor; Maximum technology penetration among the masses."

In a recent interview, World Bank chief economist Paul Romer has praised India's effort to provide a unique identification to all citizens via Aadhaar cards. He called Aadhaar system as "the most sophisticated identification system" in the world.

Aadhaar is an example that how clear intent and clear policies can transform the whole system. Aadhaar was launched in 2009 but it got activated under the leadership of Prime Minister Mr. Narendra Modi and within two and a half years it has become the world's largest and most effective biometric ID system. Aadhaar is helping to implement the socio-economic model of Pandit Deendayal Upadhyaya's Integral Humanism. From direct benefits transfer, AePS/e-KYC, Direct benefit transfer for LPG subsidy(DBTL/PAHAL), e-NPS etc. to a number of other government schemes for rural and remote areas, Aadhaar card has become an effective tool to bring transparency and to eliminate corruption from the system.

The linking of Aadhaar card with bank accounts, ration card, LPG connection and other accounts through which citizens use to avail the benefits of government schemes/services/subsidies, has eliminated the middle layer, now the communication between government and citizens is direct!

Aadhaar is a 12 digit unique identity number issued to all Indian residents based on their biometric and demographic data. The data is collected by the Unique Identification Authority of India (UIDAI), a statutory authority established on 12 July 2016 by the Government of India, under the Ministry of Electronics and Information Technology. Aadhaar is the world's largest biometric ID system, with over 1.123 billion enrolled members as of 28 February 2017. As of this date, over 99% of Indians aged 18 and above had been enrolled in Aadhaar.

Biometric identification process of Aadhaar card has removed the loopholes of fake documents. One of the main hurdles in providing access to the benefits of government schemes in remote/rural areas was the lack of identity documents now Aadhaar has enabled the direct transfer of Government benefits to the citizens. This single identity system has removed a number of obstacles in delivering good governance.

It also makes banking services like fund transfer more convenient since only Aadhaar number is needed instead of details like IFSC code, account number, etc. Now the government is working to develop an Aadhaar based digital payment system. This unique payment initiative (Aadhaar Pay) will be based on the thumb impression, verified through the Aadhaar identification for safety and security of the easier payment system for the common man. This app is expected to roll out by April 2017.

Inspired from India's approach countries such as Russia, Morocco, Algeria and Tunisia have expressed interest in adopting the Aadhaar model. Our government has made Aadhaar the pivot for delivering subsidies and other social welfare benefits directly to the people by transferring cash to their bank accounts.

Sharing some interesting points from the government's report 'Aadhaar: Dynamics of Digital Identity':

--Aadhaar is now a strategic policy tool for social and financial inclusion, public sector delivery reforms, for managing fiscal budgets, increase convenience and promote hassle-free people-centric governance.

-- In March 2016, to provide Aadhaar a statutory legal structure, the Government of India brought in 'The Aadhaar Act, 2016' under which the Unique Identification Authority of India has been established.

--The Enrolment ecosystem of Aadhaar consists of Registrars appointed by the UIDAI, who in turn appoint Enrolment Agencies, who in turn appoint certified operators. In coordination with the Registrars, the Enrolment Agencies set up Enrolment Centres, where residents can enroll for Aadhaar. Aadhaar enrolment

ecosystem works on a hybrid model, where Aadhaar enrolment is fashioned on a decentralized model, but Aadhaar generation is centralized.

-- UIDAI and NPCI have collaborated to build Aadhaar-enabled platforms for the financial sector. Aadhaar Payment Bridge (APB) enables Aadhaar to act as a Financial Address by way of linking the Aadhaar with the respective bank account.

Aadhaar-Enabled Initiatives:

AePS (Aadhaar enabled payment system)/e-KYC (electronic know your customer) - Use of Aadhaar authentication for providing banking services.

Direct Benefit Transfer (DBT) using Aadhaar – Based on the APB (Aadhaar Payment Bridge), DBT is by far the largest and most impactful of all the applications launched so far.

Aadhaar and Rural Employment Scheme (MGNREGS) - To ensure direct transfer of wages to worker's account electronically.

Aadhaar for Fertilizer subsidy - Aadhaar is also used for distributing Fertilizer subsidy to the intended Farmer in the right quantity and in the right mix. This unique approach has been successfully implemented in the State of A.P. which involves digitization of land records, linking the same with the database of Farmers and Linking of Aadhaar.

Pradhan Mantri Jan-Dhan Yojana (PMJDY) - PMJDY was launched in August, 2014 with the primary objective of ensuring access to various financial services like availability of basic savings bank account, credit, remittances facility, insurance and pension to the excluded sections of society. So far 22.48 crore accounts are opened under the scheme of which 10.79 crore are linked to Aadhaar Number.

Aadhaar Enabled Biometric Attendance System (AEBAS) - Launched in year 2015, the service is now (as on 30th July 2016) available at 639 organizations, registered over 1.88 lakh employees, over 5000 active devices. Aadhaar Enabled Biometric Attendance system is implemented by NIC.

E-Sign - e-Sign is an online service that can be integrated within various service delivery applications via an open API to facilitate digitally signing a document by an Aadhaar holder.

Digi locker – Dedicated 1 GB of personal storage space, linked to each citizen's Aadhaar number for storing docs electronically with over 20.08 lakh users.

E-NPS - New Pension System (NPS) is now made available online and a new beneficiary can get registered using Aadhaar e-KYC. This helps a seamless registration process, resulting into instant creation of a New Pension Account.

Insurance issuance @ CSC - The process of issuing instant Insurance Policies at the CSC has started using Aadhaar as the factor of authentication and for collecting KYC information electronically (e-KYC).

Jeevan Pramaan – Jeevan Pramaan is an Aadhaar enabled digital life certificate for pensioners. Over 16.13 lakh Pensioners are taking benefit of this facility. Pensioner may generate his/her "Jeevan Pramaan" at home (even outside India) or at any of the Jeevan Pramaan or CSC Centre across India using Aadhaar based biometric authentication.

Engagement of Bank Mitras (Business Correspondents) - Bank Mitras availability and capability to provide real time banking facility has been enhanced through 1.08 lakh Aadhaar enabled Micro ATMs.

Mobile SIM issuance with e KYC - Aadhaar letter and e-Aadhaar accepted as identity and address proof for issuing mobile SIM cards.

EPIC - Election Commission of India initiated the de-duplication of Electors database by linking over 31 crore Voter ID cards (Data dated 31st August 2015) with Aadhaar numbers.

Linking Universal Account Number (UAN) for EPFO with Aadhaar - Linking UAN with Aadhaar helps in cleansing of EPFO Database, besides facilitating hassle free claim settlement and payment of benefits, directly to beneficiary Aadhaar linked Bank Account. Of the 6.38 crores database over 1.51 crore have been linked to Aadhaar.

Acceptance of Aadhaar for issue of passport (Launched in May 2015) - MEA has integrated Aadhaar e-KYC service with their passport system by accepting it as identity and address proof. By June 2016, around 44 Lakh eKYC transactions have been performed by MEA for passport applications.

Use of Aadhaar authentication for e-verification of Income Tax Return (Launched in July'15) - CBDT has launched e-verification service for Income Tax Return with one of the options being Aadhaar OTP authentication. Over 68.36 lakh PAN card holders are linked to Aadhaar numbers.

Aadhaar in Securities Markets - Securities Market Regulator SEBI issued circular on 22-01-2016 on KYC, allowing Aadhaar Based e-KYC (OTP based up to Rs. 50,000 investments) as accepted mode KYC. In case investments are above Rs. 50,000, resident needs to do biometric authentication based e-KYC.

Patient registration in OPD - This application of Aadhaar helps patients to book appointment for OPD in 43 hospitals across India and so far more than 3 Lac online appointments have been confirmed using Aadhaar based e-KYC.

Land Registration - A pilot was conducted in Jind, Haryana for Aadhaar based Land registration. This involves buyer, seller and witnesses to provide their Aadhaar for any sale or purchase of Land.

(For more details read the full report at:
https://uidai.gov.in/images/news/aadhaar_dynamics_of_digital_identity_19082016.pdf)

Aadhaar is a robust and secure system. Businesses are customizing their services to align with Aadhaar system for seamless identification of Indian users. Microsoft has become the first technology company to adopt Aadhaar for LinkedIn and Skype Lite. The use of Aadhaar on Skype Lite and LinkedIn will help Microsoft to attract millions of youths in tier-2/tier-3 cities and rural areas, who do not have an email ID but they are using social and digital platforms through their Smartphones.

Aadhaar has emerged as an effective social and financial inclusion and governance tool. The government is maximizing its potentials. In India, where 99% of the adult population is connected with Aadhaar, the possibilities are enormous for businesses too! Leverage the benefits that Aadhaar offers.

Digital India and Cyber Defense

For a strong digital India strong cybersecurity is crucial. With Digital India and Smart Cities kind of initiatives, we are moving toward a digital economy. Prime Minister Mr. Narendra Modi used to say that "I dream of a Digital India where cyber security becomes an integral part of our National security."

During the last 3-4 years, the scope of cybersecurity problems has increased like never before and we have seen some major attacks on India:

--A few months back nearly 32 lakh debit cards were affected following a security breach at some of the biggest banks in India such as State Bank of India, ICICI Bank, Axis Bank, Yes Bank.

--According to 2015 report by PwC, organizations in India detected an average of 6,284 cybersecurity incidents, surging up 117 per cent over the previous year's average of 2,895 incidents.

--According to a study, cybercrime cases in the country registered under the IT Act surged nearly 300 per cent between 2011 and 2014.

Apart from domestic cyber threats, India also faces tough cyber-attacks from countries including Pakistan, China, UAE, US, Turkey, Brazil, Bangladesh, Algeria and some European nations.

The approach of our government towards cybersecurity is serious. Under the leadership of Prime Minister Mr. Narendra Modi, India has changed its cybersecurity approach from reactive to pro-active. Our government is focusing on increasing its own cybersecurity capabilities by increasing the number of CERTs - national level Computer Emergency and Response Teams. IT minister Mr. Ravi Shankar Prasad has announced that we are going to start sector specific CERTs in the country, initially, three CERTs will be launched in the power sector for the generation, transmission and distribution and one in the banking sector. Beside this National Cyber Coordination Centre and Botnet Centre will be launched shortly. To increase cyber defense-related R&D, the government will also set up Rs. 1,000 crore funds, under a high-powered committee chaired by NSA **Mr. Ajit Doval**,

this committee will support the research and development of cybersecurity related products and systems.

DIGITAL DEFENSE- Digital will play a significant role in defense and security sector too. Along with Digital India, we are developing a digitally armed force. As a part of Digital India initiative, Defence Minister has launched IAF-HAL portal- the **first inter-organization information sharing system (IOIS)** between a Defense service organization and a Defense PSU. Besides this, Central Data Centre, Army Cloud, Digi Locker and a number of other digital products have been launched that are specifically designed for the Indian Army.

India has developed its first integrated defense communication network too. DCN is a strategic, highly secure and scalable system. It has a pan-India reach - from Ladakh to the North East to island territories. These steps are crucial in the process of transforming Indian Army from a platform-centric to network-centric force.

With digital transformation at this pace, the need for developing strong cyber defense systems in parallel is needed and our government is working in this direction.

Let's take a look at some cyber security related policy initiatives:

National Cyber Security Policy 2013 - Aims to create a cybersecurity framework, which leads to specific actions and programmes to enhance the security posture of country's cyber space.

Objectives:

- To create a secure cyber ecosystem in the country, generate adequate trust and confidence in IT system and transactions in cyberspace and thereby enhance adoption of IT in all sectors of the economy.
- To create an assurance framework for design of security policies and promotion and enabling actions for compliance to global security standards and best practices by way of conformity assessment (Product, process, technology & people).
- To strengthen the Regulatory Framework for ensuring a secure cyberspace ecosystem.

- To enhance and create National and Sectoral level 24X7 mechanism for obtaining strategic information regarding threats to ICT infrastructure, creating scenarios for response, resolution and crisis management through effective predictive, preventive, protective response and recovery actions.
- To improve visibility of integrity of ICT products and services by establishing infrastructure for testing & validation of security of such product.
- To create workforce for 5, 00,000 professionals skilled in next 5 years through capacity building skill development and training.
- To provide fiscal benefit to businesses for adoption of standard security practices and processes.
- To enable Protection of information while in process, handling, storage & transit so as to safeguard privacy of citizen's data and reducing economic losses due to cyber crime or data theft.
- To enable effective prevention, investigation and prosecution of cybercrime and enhancement of law enforcement capabilities through appropriate legislative intervention.
  (Source: http://meity.gov.in/sites/upload_files/dit/files/National_cyber_security_policy-2013(1).pdf)

Information Technology Act, 2000

The Information Technology Act, 2000 (also known as ITA-2000, or the IT Act) is the primary law in India dealing with cybercrime and electronic commerce.

- A major amendment was made in 2008. It introduced the Section 66A which penalized sending of "offensive messages".
- It also introduced the Section 69, which gave authorities the power of "interception or monitoring or decryption of any information through any computer resource".
- It also introduced penalties for child porn, cyber terrorism and voyeurism.

IT Amendment Act 2008

The Information Technology Amendment Act, 2008 is a substantial addition to India's Information Technology Act 2000. Changes in the Amendment include: redefining terms such as "communication device" to reflect current use; validating electronic signatures and contracts; making the owner of a given IP address

responsible for content accessed or distributed through it and making corporations responsible for implementing effective data security practices and liable for breaches.

On 13 April 2015, it was announced that the Ministry of Home Affairs would form a committee of officials from the Intelligence Bureau, Central Bureau of Investigation, National Investigation Agency, Delhi Police and ministry itself to produce a new legal framework.

Draft rules for Security of Prepaid Payment Instruments– As government is promoting digital payment systems, a need is felt to develop a framework for security of various Prepaid Payment Instruments (PPIs) active in the country. Ministry of Electronics and Information Technology (MeitY) has formulated draft rules for security of prepaid payment instruments under provisions of Information Technology Act 2000. These rules have been published on the Ministry's website to accept public suggestions/recommendations till 5th April 2017.

(For more information visit- http://meity.gov.in/content/cyber-laws-security)

National Cyber Security Coordination Centre - National Cyber Coordination Centre is a proposed cyber security and e-surveillance agency in India. It is intended to screen communication metadata and coordinate the intelligence gathering activities of other agencies. Some of the components of NCCC include a cyber crime prevention strategy, cyber crime investigation training, review of outdated laws etc.

CYBERSECURITY ALLIANCE: INDIA, U.S. AND ISRAEL

The dimensions of cyber crimes are evolving and the rise of cyber warfare, cyber terrorism and hacktivism are some of the major concerns among the world community. The current situation demands a pro-active leadership approach to protecting the cyberspace.

In an International Conference on E-Governance, IT Minister Mr. Ravi Shankar Prasad has said that "India is willing to have the widest cooperation world over in the quest of cybersecurity. If Internet has to remain powerful, it must be safe and secure. Few people are using digital technology for terrorism, for hatred, for extremism, and we need to work together[10]."

Cybersecurity is an opportunity for India, US and Israel to work together. The research reports on cybersecurity indicate that these three countries are most vulnerable to cyber attacks in the world.

Israel is a global leader in cyber security expertise and the new leadership change in the USA is a good sign too. Mr. Donald Trump's approach toward cybersecurity is appreciable; he considers cybersecurity as an immediate and top priority. I believe India, U.S. and Israel together can provide a right direction and leadership.

A few days back India's Computer Emergency Response Team and US Homeland Security department signed a MoU for cybersecurity cooperation. India and Israel's collaboration in cybersecurity are going well. This is a perfect time for India, US, and Israel to work together to counter cyber terrorism. A lot of work is going in this direction and soon we will some positive developments too.

Digital India is a transformative program of our country, in the next two-three years, we will become a true digital economy. Cybersecurity is an important aspect of our homeland security, to deal with the growing cyber challenges that our country is facing, there is a need to promote cyber patriotism and cyber defense among the youths.

Our young generation is quite energetic; their energy can be channelized toward a right direction. To deal with cyber hacktivism, Digital India would need an army of cyber patriots and the process to build this spirit should begin now!

Digital India Events

Digital India Program is full of events and happenings. In this section I'm sharing highlights of some major and noticeable events related to Digital India.

(From January 2016- March 2017)

January 2016

Mobile Health Services – On 15th January, Union Health Minister Mr. JP Nadda has launched four mobile health services- 'Kilkari, Mobile Academy, M-Cessation and TB Missed Call initiative.

February 2016

Kerala becomes the first digital state of the country- President Mr. Pranab Mukherjee has declared Kerala as the first digital state in India.

Some interesting facts related to Kerala are [18]**:**

--Kerala has achieved 100 per cent mobile connectivity and 75 per cent Internet literacy in the past few years.

--The state has the highest record of digital banking, bank accounts linked to Aadhaar card and e-governance.

--Broadband connectivity has been distributed in the Panchayat level as well.

--Kerala is the first state to successfully link its villages with broadband connectivity under the National Optical Fibre Network (NOFN) programme.

--Over 600 e-governance applications cover almost all departments of the state.

--Kerala has a mobile coverage of 95 percent and Internet access to over 60 percent of its total population - the highest among all the 29 states.

Applications launched for Indian Railways – On 10th February 2016, Indian Railways has launched 3 applications, that includes handheld terminals for Indian Railways travelling ticket examiners (TTEs), a paperless unreserved ticketing mobile application and a facility for E-booking of disposable linen on trains.

Indian Railways e-auction for Scrap- For scrap auction, Indian Railways has made e-auction mandatory. Last year Railways has earned over Rs 3,000 crore from such sales. E-auction has enabled scrap purchasers to bid on an all-India basis with digital e-payment facility.

Union Budget- 2016-17

In the Union Budget 2016-17, a number measures have been announced to boost up Digital India. Let's take a look at some major ones[19].

--Encouragement to Digital Literacy & Digital Lockers: Creation of Digital depository of school leaving certificates, college degrees and mark-sheets to encourage the use of cloud technology in the administrative process. The Budget has given a big expansion to Digital Literacy target, the goal has been set to impart digital literacy to 6 crore households in the next 3 years. Government is working aggressively toward digital literacy, as of now against the target of 52.5 lakhs more than 40 lakhs people have been trained.

--Use of Aadhaar platform for delivery of services: The Finance Minister has announced that government will now be moving a legislation to give a statutory backing to Aadhaar for delivery of services/subsidies/benefits. This will prevent leakages by identifying the beneficiaries correctly and would encourage good governance. In the budget Finance Minister has laid great stress on the use of digital platform across various departments.

 --Reforms in Postal department: Efforts to leverage the vast network of India Post for financial inclusion has received great attention in the budget announcements. The Finance Minister has shared that In May 2014, India Post had only 230 Core Banking Branches offering anywhere Banking Services and only 4 ATMs. Today India Post has not only installed more than 576 ATMs but has overtaken the SBI by becoming India's largest Core Banking Network having 18,231 branches. By March, 2016 all the 25,000 Departmental Post Offices would offer Anywhere Banking facilities using Core Banking Solutions. 1000 ATMs shall   also be installed by 31st March 2016.

As on 29th February, 2016 India Post has issued 1,26,181 ATM/Debit Cards to its account holders. Further, India Post has achieved new heights in tapping the potential of e-commerce. Its parcel revenues have witnessed a growth of 110% and it has collected more than Rs.1200 crores from 'Cash on Delivery' mode of payment for e-Commerce services.

March 2016

SBI's First Digital Bank in NorthEast - On 30th March 2016, Meghalaya's Chief Minister Mr. Mukul M Sangma inaugurated the SBI's first digital bank 'SBI - InTouch'in Shillong, the capital of Meghalaya. The digital bank offers Internet banking, Internet savings, mobile banking and other services.

Indian Railways E-catering service extended to 408 stations- Indian Railways has extended the station-based e-catering service to 408 stations giving passengers with more food choices. Indian Railway Catering and Tourism Corporation Ltd. (IRCTC) had earlier introduced the facility at 45 stations on a trial basis[20].

April 2016

UMANG App- Unified Mobile Application for New age Governance (UMANG) will be the new app where people can access e-Gov services from the Centre, states and even from local bodies and their agencies on their mobile phone. The app will integrate almost 200 government services such as passport services, land records, income tax, e-Post, Women safety, and much more. The government plans to bring this platform to people with an app, an SMS service, and IVR [21].

Indian Railways using drones for monitoring - Indian Railways has started using drones to monitor mega rail-laying projects in the country. It has officially commissioned drone service from a private operator to monitor ongoing Dedicated Freight Corridor (DFC) projects in two states - Rajasthan and Bihar for Rs. 3,000 per kilometer[22].

E-Courts Project- The Punjab and Haryana High Court have digitized all the decided cases for safekeeping and posterity. The digitization exercise had resulted in the scanning of 15.90 crore pages and disposal of 225 tonnes of waste papers, which generated revenue of Rs 22 lakh and freed valuable space of 15,000 square feet. The high courts will use e-Filing and e-Diary software too[23].

E-NAM – On 14th April 2016, Prime Minister Mr. Narendra Modi has launched a revolutionary platform for Indian agriculture market: E-NAM – Electronic National Agricultural Market. E-NAM is a turning point for the agriculture sector.

This platform will integrate 585 wholesale markets across India. The 21 mandis from eight states have been selected for the pilot launch- Uttar Pradesh (6), Gujarat (3), Telangana (5), Rajasthan (1), Madhya Pradesh (1), Haryana (2), Jharkhand (1) and Himachal Pradesh (2). This step will bring a competitive advantage and transparency in the trading; it will definitely benefit the farmers, traders, and consumers.

May 2016

Microsoft's Digital Villages in Maharashtra- Maharashtra government in partnership with Microsoft will set up digital villages and a smart industrial colony in Maharashtra. Besides this a cybersecurity centre will also setup.

MSTC to sell steel products online- The steel ministry and state-run MSTC have jointly launched an e-platform for the sale of finished and semi-finished steel products. The portal 'MSTC Metal Mandi' is aimed at improving the marketing potential of medium and small-scale steel producers.

The steel product buyers across the country can make purchases on the portal and can use e-payment or letter of credit for payment[24].

Nagpur District set to go 'digitally smart' – The Maharashtra government initiated 'Digital Gram' scheme under which five villages of the Nagpur district were declared digital village. All the 776 village panchayats of the district would be put on the national optic fibre network which would make Nagpur the first complete digital district of the nation[25].

BharatVani- India's First Multilingual Online Dictionary- Government has launched nation's first and largest multilingual online dictionary- bharatvani.in, this dictionary can right now decipher words from 22 different languages and in coming days it would include 100 more languages. Govt. has also launched an app of this dictionary, which can be downloaded from Google Playstore[26].

June 2016

URJA Mobile App- During the Conference of State Power Ministers in Goa, Power Minister Shri Piyush Goyal released URJA App. The app allows users to get information of performance of their town, DISCOMs and State level on different parameters including their ranking, pending consumer complaints, average power cuts, and percentage of consumers making e-Payments, as well as power loss or theft. The app also gives information on schemes and initiatives that are being undertaken by the Govt. of India to improve the power supply[27].

July 2016

SBI and Oracle partnership- D-Change- State Bank of India and Oracle have come together for a volunteering programme to bring digital literacy/digital fluency among the underprivileged school students. Under the programme 'D-Change' both organizations will train the students in the basics of using information, communication and technology[28].

Nasscom and Deity launched Centre of Excellence for IoT- Nasscom and Deity have launched a COE for IoT in Bangalore. The Indian IoT market grew by 28 percent in the last 12 months. According to Nasscom's estimates there are close to 120 companies offering IoT solutions in India and about 60 percent of India's IoT startups have emerged in the last five years. This Centre of Excellence will see active participation from some of the biggest global technology companies that are interested in India's smart cities and other Digital India projects[29].

August 2016

The New PMO app launched- On 6th August 2016, Prime Minister Mr. Narendra Modi has launched the new PMO app. The government had launched a two-phased contest in March 2015 on MyGov platform for the development of PMO app. A team of six engineering students from Delhi Technical University won the contest and finally got to develop the app[30].

September 2016

Digital India High Level Committee submits the report- On 26th September 2016, a high level committee (HLC) headed by Infosys cofounder Kris Gopalakrishnan has submitted its report, this committee has made some recommendations to IT minister Mr. Ravi Shankar Prasad for the transformation of the National Informatics Centre. The committee was constituted in December 2015, to draft the vision for the NIC 2.0[31].

Intel India announces the Intel & DST Innovate for Digital India Challenge 2.0- On 8th September 2016, Intel India announced the launch of the Intel & DST Innovate for Digital India Challenge 2.0 in collaboration with MyGov, ministry of electronics and information technology (MeITY), and T-Hub.

Assam will develop 25000 digital villages by 2021- During the 12th Northeast Information and Communication Technology (NICT) summit, Chief Minister Mr. Sarbananda Sonowal has said that government would develop the mission of e-gram to connect every village in the state through digital technology in the next five years. E-gram project will develop 25,000 digital villages in the next five years. Assam government has invited private players to work with government for promoting digital literacy[32].

October 2016

Ministry of Coal to go completely Digital - Ministry of Coal has announced that from the month of November it will become completely digital. This step is crucial because it will bring transparency and will eliminate leakage from system.

Surveillance System to Monitor Illegal Mining Launched- To curb illegal mining government has launched the satellite-based Mining Surveillance System. This system has been developed with the collaboration of Mining Ministry, Indian Bureau of Mines (IBM), Bhaskaracharya Institute for Space Applications and Geo-informatics (BISAG) and Ministry of Electronics and Information Technology (MEITY).

November 2016

Digital India push in Arunachal Pradesh - In November 2016, the Arunachal Pradesh government has flagged off the Digital India Outreach Campaign Van. The van outreach program is for creating awareness among the citizens about various products/services launched under digital India so that people can start using these products like Digital Lockers, E-Sign, E-governance services, Scholarship portals and other government's websites for their convenience. This campaign also conducted registration drives for Digital India services. Besides this the Department of Administrative Reforms and Public Grievances has launched a project called e-office, to improve efficiency in government processes and service delivery mechanisms. The National Informatics Centre is the technology partner in implementing e-office project. Arunachal is among one of the first states in the country to incorporate e-sign as part of the e-office[12].

Telecom Sector Skill Council and Art of Living join hands for Digital India-

Telecom sector skill council and Art of Living signed a MoU to skill youth and to create employment opportunities. Under the partnership, both entities will provide skill based training to digitally educate people all across the country within the telecom sector, through the Art of Living Digital India Movement's network of centres.

Digital Tag for toll payments- Government has asked automobile manufacturers to provide a digital identity tag in all new vehicles, including cars, to enable electronic payment at all toll plazas and ensure seamless movement at check posts[33].

December 2016

UPI enabled Aadhaar linked E-payments app- Government is going to launch a mobile app to facilitate Aadhaar linked digital payments along with a nationwide mission to train over 1 crore people on e-payments. Government will conduct workshops to train 14 lakh Village Level Entrepreneurs (VLE) across 500 districts and 6500 blocks about how to use digital payment systems.

DigiDhan Mela- Government has decided to organize DigiDhan mela across the country to spread awareness about Digital payments. One such event was organized in Delhi on 17th-18th December 2016. Among the participants in the event were 29 private and national banks, 18 electronic wallet companies and the Unique Identification Authority of India, along with several other organizations. T

The aim of DigiDhan Mela is to teach common people about cashless transactions through United Payments Interface, e-wallets, cards, PoS, Aadhaar Enabled Payment System, unstructured supplementary service data. Apart from that, the event is served as a one stop shop for people to open bank accounts, enroll in Aadhaar, and connect existing bank accounts to Aadhaar identity for Aadhaar Enabled Payment System (AEPS) [34].

January 2017

Cisco and Genpact's CoE- Genpact and Cisco have launched a Global Centre of Excellence in the Indian city of Jaipur as part of the Cisco Lighthouse City project.

Cisco has identified Jaipur as the first smart and connected Lighthouse City in South Asia. The centre will serve as an innovation lab for Genpact and its partnering technology firms to rapidly test and deploy the latest smart technology advances from Cisco to help Jaipur become a fully responsive, smart and connected city[35].

Cisco to digitally empower girl child in Rajasthan – Cisco and the Rajasthan government signed a Statement of Intent (SoI) to support and advance women working in the technology sector and the expansion of its Jaipur Lighthouse City program. In collaboration with the State Institute of Education Management And Training (SIEMAT), Cisco has deployed virtual classrooms across 12 institutes in the state to provide 50,000 man-hours of training through digital classrooms[36].

February 2017

The Ministry of Electronics and Information Technology (MEITY) has been assigned the responsibility of implementation and expansion of the Government's 'Digital India' initiative. Now the IT Ministry will manage the all matters related to

further expansion of the digital payment initiative. Earlier a committee of Niti Aayog was involved in this.

March 2017

HP's CoE - On 8th March, Hewlett-Packard unveiled its first Centre of Excellence (CoE) in India to showcase locally developed solutions. HP has built this facility in alignment with the Government's Digital India initiative, to offer solutions that solve real life problems with technological innovations[37].

Digital India program is a success. Government has released its progress report too.

You can read **Digital India Progress Report at** http://digitalindia.gov.in/ebook/

For Hindi Version visit – http://digitalindia.gov.in/ebook/hindi/

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'A GUIDE TO SCRUM DEVELOPER', it is available on Amazon: http://amzn.com/B018PGI82M

'DREAM OF A DIGITAL INDIA: RESEARCH REPORT 2014-15', it is available on Smashwords: https://www.smashwords.com/books/view/611972

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Scrum Alliance Profile
Amazon Author Profile

References

1. **Wikipedia.** Unified Payment System. *Wikipedia.org.* [Online] [Cited: March 19, 201.] https://en.wikipedia.org/wiki/Unified_Payments_Interface.

2. **PTI.** Government's helpline number 14444 for digital payments support launched. *bgr.in.* January 5, 2017.

3. **IANS.** Digital India: Government's DigiDhan Abhiyan registers 1 crore rural citizens for digital payments. *bgr.in.* December 29, 2016.

4. **Variyar, Mugdha.** USAID's Catalyst initiative to educate 6 crore Indian merchants on digital payments. *economictimes.indiatimes.com.* December 27, 2016.

5. **Gupta, Komal.** Modi govt launches digital lottery schemes in a bid to boost cashless transactions. *livemint.com.* Dec 26, 2016.

6. **DeitY.** PayOnline - Online Payment Platform. *digitalindia.gov.in.* [Online] 2017. [Cited: March 20, 2017.] http://digitalindia.gov.in/writereaddata/files/ggd/deity/4%20Launch%20of%20ePayment%20Portal.pdf.

7. E-Post Office. *epostoffice.gov.in.* [Online] [Cited: March 24, 2017.] https://www.epostoffice.gov.in/.

8. **Ghosal, Arkadev.** New IRCTC Rail Connect app replaces old ticket-booking software, brings new features. *ibtimes.co.in.* [Online] January 11, 2017. [Cited: March 25, 2017.] http://www.ibtimes.co.in/new-irctc-rail-connect-app-replaces-old-ticket-booking-software-brings-new-features-711804.

9. Home: National Rurban Mission. *rurban.gov.in.* [Online] [Cited: March 25, 2017.] http://rurban.gov.in/about.html.

10. **PTI.** India open for widest cyber security collaboration: Ravi Shankar Prasad. *economictimes.indiatimes.com.* March 07, 2017.

11. **Kalital, Prabin.** Assam starts mega exercise to go digital. *timesofindia.indiatimes.com.* Nov 30, 2016.

12. **DAS, PRANAB KUMAR.** Arunachal thrust on Digital India. *The Telegraph.* Nov 19, 2016.

13. NORTH EAST BPO PROMOTION SCHEME (NEBPS): Digital India. *digitalindia.gov.in.* [Online] [Cited: March 20, 2017.] www.digitalindia.gov.in/content/north-east-bpo-promotion-scheme-nebps-0.

14. **PTI.** State Bank of India Opens first digital branch in NorthEast. *dnaindia.com.* March 30, 2016.

15. **Northeast today.** Amazon Bids to Encourage Women Entrepreneur in Nagaland. *Northeasttoday.in.* January 23, 2017.

16. —. BSNL Bids to Boost Rural Connectivity of Assam. *northeasttoday.in.* January 09, 2017.

17. **Garcia, Meryl.** Welcome to Northeast India's First Smart Village. Here are 5 Things You Should Know About it. *thebetterindia.com.* Feb 15, 2016.

18. **IndiaToday.in.** Kerala declared first digital state in India: All you need to know. *indiatoday.intoday.in.* Feb 29, 2016.

19. **Press Information Bureau.** Budget to boost Digital India vision . *http://pib.nic.in.* [Online] March 01, 2016. [Cited: March 22, 2017.] http://pib.nic.in/newsite/PrintRelease.aspx?relid=137139.

20. **The Financial Express.** Indian Railways Ecatering service extended to 408 stations; PM's Digital India scheme gets boost. *financialexpress.com.* March 2016.

21. **Mehta, Ivan.** UMANG: Narendra Modi's Master App For Government Services. *huffingtonpost.in.* July 15, 2016.

22. **KVN, Rohit.** Digital India: Railways commence use of drones to monitor rail-laying projects. *ibtimes.co.in.* April 18, 2016.

23. **PTI.** Digital India: Over 2 crore decided case files in Punjab and Haryana High Courts digitized. *bgr.in.* April 5, 2016.

24. **Mazumdar, Rakhi.** MSTC to sell steel products on e-platform under 'Digital India' initiative. *economictimes.indiatimes.com.* May 30, 2016.

25. **FPJ Bureau.** Country's first 'Digital Grams' come up in Nagpur district. *freepressjournal.in.* May 02, 2016.

26. **Delhi School of Internet Marketing.** Digital India Initiative: BharatVani, India's First & Biggest Multilingual Dictionary Is Now Online. *dsim.in.* May 28, 2016.

27. **Mobiloitte.** Power Minister Piyush Goyal adds momentum to `Digital India' with launch of URJA Mobile App. *prnewswire.com.* [Online] June 16, 2016. [Cited: March 22, 2017.] http://www.prnewswire.com/news-releases/power-minister-piyush-goyal-adds-momentum-to-digital-india-with-launch-of-urja-mobile-app-300285909.html.

28. **Shetty, Mayur.** SBI partners Oracle to support Digital India. *timesofindia.indiatimes.com.* July 28, 2016.

29. **ARAKALI, HARICHANDAN.** Nasscom opens centre to boost IoT ecosystem, accelerate startups. *forbesindia.com.* July 8, 2016.

30. **IANS.** PM Narendra Modi to launch PMO app at MyGov anniversary event. *economictimes.indiatimes.* August 04, 2016.

31. **ET Bureau.** Digital India, headed by Kris Gopalakrishnan submits report for transformation of the National Informatics Centre. *economictimes.indiatimes.com.* September 27, 2016.

32. **Staff Reporter.** Assam eyes 25000 digital villages by 2021. *telegraphindia.com.* September 1, 2016.

33. **PTI.** New vehicles to have digital tag for toll payments. *indianexpress.com.* November 23, 2016.

34. **Lobo, Shalini.** Government organises DigiDhan Mela to spread awareness on digital payment systems. *indiatoday.intoday.in.* December 17, 2016.

35. Centre of excellence helps to progress Digital India. *smartcitiesworld.net.* Jan 9, 2017.

36. **IANS.** Cisco unveils initiatives to digitally empower girls in Rajasthan. *bgr.in.* Jan 09, 2017.

37. **ET Bureau.** HP launches 'Centre of Excellence' to support Digital India. *economictimes.indiatimes.com.* March 8, 2017.