Digital India Initiative-To Transform India into Digital Empowered Society and Knowledge Economy

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Abstract

Prime Minister Narendra Modi launched the much ambitious 'Digital India' programme in the presence of top industrialists who shared their ideas of taking digital revolution to the masses. The Digital India programme is a flagship programme of the Government of India with a vision to India into a digitally empowered society and knowledge economy. This is a big step forward to transform the country into a digitally empowered knowledge economy. Launched various schemes worth over Rs 1 lakh crore like Digital Locker, e-education, e-health, e-sign and national scholarship portal. Bharat Net and Next Generation Network (NGN), are also a part of Digital India campaign. The programme includes projects that aim to ensure that government services are available to citizens electronically and people get benefit of the latest information and communication technology. The Ministry of Communications and IT is the nodal agency to implement the programme. Developed Apps for Digital India Digital India Portal, My Gov Mobile App, Swachh Bharat Mission App and Aadhaar Mobile Update App. Vision of Digital India Digital Infrastructure as a Utility to Every Citizen, Governance & Services on Demand Digital, Empowerment of Citizens Pillars of Digital India Broadband Highways, Universal Access to Phones, Public Internet Access Programme, e-Governance, Reforming government through Technology e-Kranti, Electronic delivery of services and Information for all are covered in this paper. Electronics Manufacturing Targets NET ZERO Imports. Extending Broadband in 2.5 lakh villages, universal phone connectivity, Net Zero Imports by 2020 is aimed. Four lakhs Public Internet Access Points, Wi-Fi in 2.5 lakh schools, all universities; Public Wi-Fi hotspots for citizens Digital Inclusion in addition to 1.7 Crores trained for IT, Telecom and Electronics Jobs. Direct 1.7 Cr. and Indirect 8.5 Core Jobs creation across India in IT use in services - health, education, banking. For Digitally empowered citizens - public cloud, internet access. Benefits of Digital Locker Digital Locker facility will help citizens to digitally store their important documents like PAN card, passport, mark sheets and degree certificates. National Optical Fiber Network (NOFN) proposes seven lakh kilometers of optical fiber to be laid to connect 250-gram panchayats in three years. Public Wi-Fi spots will be provided around the clusters after that and all villages will be provided with internet connectivity. Digital India initiative as, "India would become a very powerful digitally connected world. This would lead to a good architecture for electronic delivery service. The entire contour of India is change. India is sitting at the cusp of a big digital revolution. Post demonetization rapid progress towards digitization is also discussed at length.

Introduction

The Digital Revolution refers to the advancement of technology from analog electronic and mechanical devices to the digital technology available today. The era started to during the 1980s and is ongoing. The Digital Revolution also marks the beginning of the Information Era. The Digital Revolution is called as the Third Industrial Revolution. It is well known that Digital revolution is the backbone of economic, technological, and social prosperity after the industrial revolution. It is driven by high-speed Internet connectivity and innovative and services. The medium of communication has changed rapidly and mobile communication has become an inevitable part of...
life. The internet users rose as mobile devices enabled easy and faster connectivity. Instant messengers and chat rooms replaced the voice communication while e-commerce is bringing a paradigm shift in the way people shop. We are now getting into the era of Internet of Things and Augmented Reality. New technologies based on mobile connectivity, social media, cloud computing and big data are leading the way, driving efficiency and productivity. Indian government would be spending around $18 billion for digital revolution in the country. The government and private organizations by focusing their efforts on extending the digital technologies will enable equitable and inclusive growth of the rural and remote communities as well. According to the UNESCO, ‘The digital revolution has fundamentally altered the way in which cultural goods and services are produced, distributed and accessed. Indeed, the accelerated expansion of social networks and user generated content (UGC), the explosion of data created by cloud computing and the proliferation of connected multimedia devices – smart phones, tablets, phablets, e-readers – in the hands of the users have had a huge impact on the cultural scene, in both the global North and South. Technological changes have led to the emergence of new players and new logics [1]. The paper aims present to highlight the major initiatives and developments that has taken place so far towards digital revolution.

In the past few months, India has gone through the demonetization exercise, which has given a clear indication that the country is moving towards a cashless economy, which will curb the menace of black money. Another important area that the government is roll out of Goods and Services Tax(GST) is aligning the Indian tax system with the tax systems adopted internationally as a part of the G20 and OECD’s base erosion and profit shifting (BEPS) project. This will kick off in a big way with the general anti-avoidance rule (GAAR) being effective from financial year 2017-18. India is a supporter of the BEPS project and has also indicated that it will sign the multilateral instrument to amend its tax treaties in terms of the BEPS project. Another key project of the Centre to push digital payments was introduction of an Aadhaar-based payment system called Aadhaar Pay, through which people without any of the electronic payment tools would be able to make cashless payments. The focus of the digital push would be on rural and semi-urban areas through post offices, fair price shops and banking correspondents. A mission will be set up with a target of 2,500 crores digital transactions for 2017-18 through UPI, USSD, Aadhaar Pay, IMPS and debit cards. Banks have targeted to introduce additional 10 lakhs new PoS terminals by March 2017. They will be encouraged to introduce 20 lakh Aadhaar based PoS by September 2017.

The government is also working to strengthen the digital payment infrastructure and grievance handling mechanisms. A proposal to mandate all government receipts through digital means, beyond a prescribed limit, is also being considered by the Centre. The launch of Aadhaar Pay for people without mobile phones will spearhead the country’s transition to digital economy and perhaps make India a global exemplar in the digital arena. Renewed focus on taking digital to rural and semi-urban areas will further enhance digital inclusion, bridging the digital divide in the society and fostering financial inclusion. The government estimates that around 2,500 crores digital transactions will take place in 2017-18 via different modes of payments. Several measures to encourage transactions through Bharat Interface for Money, or BHIM, an app developed by the government to further its cashless push, formed a part of finance minister Arun Jaitley’s Union Budget 2017-18. “BHIM (Bharat Interface for Money) will unleash the power of mobile phones for digital payments and digital inclusion; around 125 lakh people have already adopted this app. Two new schemes to promote the usage of BHIM will be launched; these are, Referral Bonus Scheme for individuals and a Cash Back Scheme for merchants,” Jaitley said.

Focus on Physical Infrastructure and Allied Services for Digital Economy

The economy has faced a general slowdown during the past quarter. To energize sentiment, we need to see visible action on government initiatives such as Make in India, Skill India, Start-Up India and Stand-Up India. The government is initiating steps to benefit these programmes as well as tone up physical infrastructure. A decade ago, India had a massive problem, nearly half its people did not have any form of identification. When you are born in a village without hospitals or government services, you don’t get a birth certificate. If you can’t prove who you are, you can’t open a bank account or get a loan or insurance; you are doomed to be part of the informal economy whose members live in the shadows and don’t pay taxes. In 2009, the government launched a massive project, called Aadhaar, to solve this problem by providing a digital identity to everyone based on an individual’s fingerprints and retina scans. As of 2016, the program had issued 12-digit identification numbers to 1.1 billion people.
This was the largest and most successful IT project in the world and created the foundation for a digital economy. India’s next challenge was to provide everyone with a bank account. Its government sanctioned the opening of 11 institutions called payment banks, which can hold money but don’t do lending. To motivate people to open accounts, it offered free life insurance with them and made them a channel for social-welfare benefits. Within three years, more than 270 million bank accounts were opened, with $10 billion in deposits. And then India launched its Unified Payment Interface (UPI), a way for banks to transfer money directly to one another based on a single identifier, such as the Aadhaar number.

Take the way that credit card payments are processed, when you present your card to a store, the cashier verifies your signature and transmits your credit card information to a billing processor such as Visa, American Express or MasterCard which works with the sending and receiving banks. The billing processors act as a custodian and clearing house. In return for this service, they charge the merchants a fee of 2 to 3 percent of the transaction. This is a tax that is indirectly passed on to the customer. With a system such as UPI, the billing processor is eliminated, and transaction costs are close to zero. The mobile phone and a personal identification number take the place of the credit card as the authentication factor. All you do is download a free app and enter your identification number and bank PIN, and you can instantly transfer money to anyone, regardless of which bank he or she uses. There is no technology barrier to prevent a UPI from working in the United States. Transfers would happen within seconds, even faster than the 10 minutes that a bit coin transaction takes.

India has just introduced another innovation called India Stack. This is a series of secured and connected systems that allow people to store and share personal data such as addresses, bank statements, medical records, employment records and tax filings, and it enables the digital signing of documents. The user controls what information is shared and with whom, and electronic signature occurs through biometric authentication. With the new “know-your-customer” procedures that are part of India Stack, all which is needed is a thumbprint or retina scan, and an account can be opened within minutes. The same can be done for medical records. Imagine being able to share these with doctors and clinics as and when necessary. This is surely possible for us in the United States, but we aren’t doing it because no trusted central authority has stepped up to the task. India Stack will also transform how lending is done. The typical villager currently has no chance of getting a small-business loan because he or she lacks a credit history and verifiable credentials. Now people can share information from their digital lockers, such as bank statements, utility bill payments and life insurance policies, and loans can be approved almost instantaneously based on verified data. This is a more open system than the credit scoring services that US businesses use.

In November, in a move to curb corruption and eliminate counterfeited bills, Indian Prime Minister Narendra Modi shocked the country by announcing the discontinuation of all 500- and 1,000-rupee (about $7 and $14) notes—which account for roughly 86 percent of all money in circulation. The move disrupted the entire economy, caused pain and suffering, and was widely criticized. Yet it was a bold move that will surely produce long-term benefits because it will accelerate the push to digital currency and the modernization of the Indian economy. Details of demonetization are available [2, 3]. Nobel Prize-winning economist Joseph Stiglitz said at the World Economic Forum meeting in Davos, Switzerland, that the United States should follow Modi’s lead in phasing out currency and moving toward a digital economy because it would have “benefits that outweigh the cost.”

The Make in India initiative will greatly help the domestic equipment manufacturers. India’s import of telecom equipment in FY14 was ‘69.51 billion against exports of ‘20.48 billion, resulting in a net foreign exchange outgo of ‘49.04 billion. Forty-Four Liberal regulations and tax policies can encourage domestic and international players to make in India and hence open their R&D centers locally. This will directly impact the technology innovation as well as adoption in India with inherent benefits from local taxes and reduced / no customs duty. Recently government has allowed the telecom operators to share spectrum for efficient and optimum utilization of the limited natural resource. Mobile operators in India...
have only about a third of the spectrum compared to global
operators to serve the 2nd largest market in the world.

Government of India’s Initiative

The Cabinet at the meeting chaired by the Prime
Minister, Shri Narendra Modi gave its approval for Digital
India – A programme to transform India into digital
empowered society and knowledge economy. This is a
follow up to the key decisions taken on the design of
the programme during the meeting of the Prime Minister
on Digital India Programme on August 7, 2014, and to
sensitize all ministries to this vast programme touching
every corner of the government. This programme has been
envisioned by Department of Electronics and Information
Technology (DeitY). The vision of Digital India aims
to transform the country into a digitally empowered
society and knowledge economy. The programme will
be implemented in phases from the current year till 2018.
The Digital India is transformational in nature and would
ensure that Government services are available to citizens
electronically. It would also bring in public accountability
through mandated delivery of government’s services
electronically; a Unique ID and e-Pramaan based on
authentic and standard based interoperable and integrated
government applications and data basis [4]. The source of
funding for most of the e-Governance projects at present
is through budgetary provisions of respective Ministries/
Departments in the Central or State governments.
Requirements of funds for individual project(s) for Digital
India will be worked out by respective Nodal Ministries /
Departments.

The Vision Areas of Digital India

I. Infrastructure as Utility to Every Citizen

(i) High speed internet as a core utility shall be made
available in all Gram Panchayats.

(ii) Cradle to grave digital identity - unique, lifelong,
online and authenticable.

(iii) Mobile phone and Bank account would enable
participation in digital and financial space at individual
level.

(iv) Easy access to a Common Service Centre within their
locality.

(v) Shareable private space on a public Cloud.

(vi) Safe and secure Cyber-space in the country.

II. Governance and Services on Demand

(i) Seamlessly integrated across departments or
jurisdictions to provide easy and a single window access
to all persons.

(ii) Government services available in real time from online
and mobile platforms.

(iii) All citizen entitlements to be available on the Cloud to
ensure easy access.

(iv) Government services digitally transformed for
improving Ease of Doing Business.

(v) Making financial transactions above a threshold,
electronic and (vi) Leveraging GIS for decision support
systems and development.

III. Digital Empowerment of Citizens

(i) Universal digital literacy.

(ii) All digital resources universally accessible.

(iii) All Government documents / certificates to be
available on the Cloud.

(iv) Availability of digital resources / services in Indian
languages.

(v) Collaborative digital platforms for participative
governance.

(vi) Portability of all entitlements for individuals through
the Cloud.

IV. Scope of Digital India

The overall scope of this programme is:

(i) To prepare India for a knowledge future

(ii) On being transformative that is to realize IT (Indian
Talent) + IT (Information Technology) = IT (India Tomorrow)

(iii) Making technology central to enabling change
(iv) On being an Umbrella Programme – covering many departments

✓ The programme weaves together a large number of ideas and thoughts into a single, comprehensive vision, so that each of them is seen as part of a larger goal. Each individual element stands on its own, but is also part of the larger picture.

✓ The weaving together makes the Mission transformative in totality. (v) The Digital India Programme will pull together many existing schemes which would be restructured and re-focused and implemented in a synchronized manner. The common branding of the programmes as Digital India, highlights their transformative impact.

Digital India Aims to Provide the Much-Needed Thrust to the Nine Pillars of Growth Areas, Namely

1. Broadband Highways,
2. Universal Access to Mobile Connectivity,
3. Public Internet Access Programme,
4. e-Governance: Reforming Government through Technology,
5. e-Kranti - Electronic Delivery of Services,
6. Information for All,
7. Electronics Manufacturing,
8. IT for Jobs

Approach and Methodology

i. Ministries / Departments / States would fully leverage the Common and Support ICT Infrastructure established by the Government of India.

ii. The existing / ongoing e-Governance initiatives would be revamped to align them with the principles of Digital India. Scope enhancement, Process Reengineering, use of integrated & interoperable systems and deployment of emerging technologies like Cloud & mobile would be undertaken to enhance delivery of Government services to citizens.

iii. States would be given flexibility to identify for inclusion additional state-specific projects, which are relevant to their socio-economic needs.

iv. E-Governance would be promoted through a centralised initiative to the extent necessary, to ensure citizen centric service orientation.

v. Successes would be identified and their replication promoted proactively.

vi. Public Private Partnerships would be preferred wherever feasible.

vii. Adoption of Unique ID would be promoted to facilitate identification, authentication and delivery of benefits.

viii. Restructuring of NIC would be undertaken to strengthen the IT support to all government departments at the Centre and State levels.

ix. The positions of Chief Information Officers (CIO) would be created in at least 10 key ministries so that various e-Governance projects could be designed, developed and implemented faster.

x. Deity would create necessary senior positions within the department for managing the programme.

xi. Central Ministries / Departments and State Governments would have the overall responsibility for implementation of various Mission Mode and other projects under this Programme. Considering the need for overall aggregation and integration at the national level, it is considered appropriate to implement Digital India as a programme with well-defined roles and responsibilities of each agency involved.

Program Management Structure

A programme management structure would be established for monitoring implementation. Key components of the management structure would consist of the Cabinet Committee on Economic Affairs (CCEA) for
according approval to projects, a Monitoring Committee headed by the Prime Minister, a Digital India Advisory Group chaired by the Minister of Communications and IT, an Apex Committee chaired by the Cabinet Secretary and the Expenditure Finance Committee (EFC) / Committee on Non-Plan Expenditure (CNE) [5].

Digital India Initiatives Transforming India into a Knowledge Economy

With a clear vision, the present government is pushing ahead the Digital India initiative to transform the country into a digitally empowered society and a knowledge economy. The journey towards a digitally connected India began in the early 90s and 2000s with the introduction of a range of e-governance programmes. However, its impact was limited. With the launch of this initiative, the government aims to reach out to citizens in the remotest of locations and make them a part of India’s growth story. Since technology is a key driver in causing disruptive change, digital tools will empower citizens and prove to be a game-changer. Digital India provides the much-needed thrust to the nine pillars of growth areas, namely Broadband Highways, Universal Access to Mobile Connectivity and Public Internet Access Programme, among others.

Key Pillars

The Digital India programme is based on the following pillars:

Broadband Highways

Under this programme, high-speed broadband coverage highways will connect 250,000 villages, various government departments, universities, etc. In addition, National Information Infrastructure (NII) will ensure the integration of the network and cloud infrastructure within the country to provide high-speed connectivity to various government departments. These components include networks such as State-Wide Area Network (SWAN), National Knowledge Network (NKN), National Optical Fiber Network (NOFN), Government User Network (GUN) and the Megh Raj Cloud.

Universal Access to Mobile Connectivity

Today, there exist around 55,619 villages in India that have no mobile coverage. To cover remote villages in the northeast, a comprehensive development plan has been initiated that will be carried out in phases.

Public Internet Access Programme

The underlying principle of this initiative is to make 250,000 Common Service Centers (CSCs) operational at the gram Panchayat level for delivery of government services. In a similar move, 150,000 post offices will be converted into multi-service centers.

E-Governance: Reforming Government through Technology

The idea is to use business process re-engineering to transform government processes and make them simple, automated and efficient. Under this, forms will be simplified and only minimum and necessary information will be collected. Similarly, there will be a tracking process for the status of online applications. To further simplify the process, use of online repositories for certificates, educational degrees, identity documents will be encouraged so that these documents do not have to be submitted in the physical form.

E-kranti - Electronic Delivery of Services

This pillar emphasizes on the use of technology for service delivery such as e-education, e-healthcare, technology for planning, final inclusion etc.

Information for All

This is to provide open access to government information and documents available online. This will enable a two-way communication between the citizens and the government through online platforms and social media. The biggest success story is MyGov.in, a platform for citizen engagement in governance, which was launched by the Prime Minister Narendra Modi on 26th July 2014 as a medium to exchange ideas or suggestions with the government.

Electronics Manufacturing

Under this programme, the target is to reach net zero imports by 2020 through implementation in areas such as taxation, economies of scale, skill development, government procurement etc.

IT for Jobs

This step will provide the required skills and training to enable youth to find jobs in the IT/ITes sector. This component also emphasizes on the setting up of BPOs to enable ICT-enabled growth.
Early Harvest Programmes
These early harvest programmes consist of a range of projects to be carried out within a short timeline. This includes an IT platform for messages, e-greetings from the government, biometric attendance and Wi-Fi in all universities etc.

Vision of Digital India
The Digital India vision provides the intensified impetus for further momentum and progress for e-Governance and would promote inclusive growth that covers electronic services, products, devices, manufacturing and job opportunities.

Governance and Services on Demand
Digital India aims to create a seamless ecosystem across multiple government departments to make services available on both online and mobile platforms. As part of the initiative, financial transactions would be made cashless and entitlements would be available on the cloud.

Digital Empowerment of Citizens
This programme will provide universal digital literacy to enable citizens to use the digital platform. The government services can be accessed in local languages to help users participate in the new governance mechanism. Since technology is the key driver in India’s economic growth, it will spur growth in areas of governance and service delivery.

Successes of Digital India
E-Path Shala: Transforming Learning through Technology
The Ministry of Human Resource Development introduced the e-Path Shala programme to promote ‘learning on the go’ among students, teachers and parents. Through this initiative, free access to NCERT books would be available to students of classes 1 to 12. These books are available in both Hindi and English.

EBiz Platform
The initiative, driven by the Department of Industrial Policy and Promotion (DIPP), seeks to provide comprehensive Government-to-Business (G2B) services to business entities with transparency, speed, and certainty. The aim is to reduce several levels of points of contact between business entities and government agencies, establish single-window services and reduce the burden of compliances.

My Gov Platform
This is a platform for citizens to exchange ideas and suggestions with the government. Through this initiative, the government receives feedback, inputs and ideas from people regarding policy decisions and new initiatives like Digital India, Swachh Bharat, Make in India, among others.

Jeevan Praman
The Jeevan Praman programme enables pensioners to conveniently submit their life certificates online through this portal. The certificates are stored in the Life Certificate Repository and available to pensioners and Pension Disbursing agencies.

Digital Locker System
Digi Locker is a key initiative under Digital India. This programme is targeted at paperless governance and is a platform for issuance and verification of documents and certificates digitally. A dedicated cloud storage space is given to all those who register for the Digital Locker account. To make it an easy process, this storage is linked to their Aadhar (UIDAI) number. Organizations that are registered with Digital Locker can push electronic copies of documents and certificates (e.g. driving license, Voter ID, School certificates) directly into the citizens’ lockers. As per the official website, there are 39, 64, 008 registered users and 50, 47, 204 uploaded documents. Digital India has been introduced to ensure smooth implementation of e-governance in the country and transform the entire ecosystem of public services through the use of information technology. There is no better way to promote inclusive growth other than through the empowerment of citizens [6].

Push in Digital Initiatives Announced in Budget 2017
Promotion of digital economy is an integral part of government's strategy to weed out black money. Therefore, budgetary provisions are kept implementing the programmes as follows.

Bharat Net
The government stepped up its allocation for Bharat Net to Rs 10,000 crores to connect more than 1.5
lakh gram panchayets with Wi-Fi access in 2017-18. This will help achieve Prime Minister Narendra Modi’s Digital India mission and help reach rural areas, enabling digital transactions, education and skilling. It still will be short of its 2.5 lakh GP target.

**Digital Payments**

Government will promote use of BHIM app by offering incentives to both users and merchants. It will also push banks to introduce 10 lakh PoS systems by March and 20 lakhs Aadhaar Pay PoS systems by September. This will help it meet its target of 2,500 crores digital transactions in 2017-18.

**Local Electronics Manufacturing**

India has got 250 investment proposals for electronics manufacturing in the last two years. Arun Jaitley has earmarked Rs 745 crores as incentives to promote India as a global hub. He has increased duties on PCBs for smart phones, while reducing duties on biometric scanners for digital payment units. This will increase local manufacturing and reduce costs of devices for merchants and users.

**Skill Development**

The government plans to launch an online education platform SWAYAM with 350 courses that will act as virtual classrooms. Students will be able to participate in discussions, take tests and earn grades. SWAYAM will also be accessible through DTH channels. This will help the government address the lack of high quality teaching for millions of Indian students.

**Banking Backbone**

The government is looking to get primary agriculture credit societies (PACs), crucial for loan disbursements in rural areas integrated with the backend of district central cooperative banks. It would take Rs. 1,900 crores to get the 65,000 PACs online. The integration would help government to provide subsidies directly to farmers at their market places.

**Tech in Governance**

The government has increased budget provisions under MNREGA to Rs. 48,000 crores, the highest ever allocation under the scheme. The increased budget will go into geo-tagging all MNREGA assets and putting them in the public domain. The use of satellite data would help in better monitoring and accountability of funds. Budget 2017 is significant as it comes on the back of Prime Minister Modi's demonetization drive which created chaos all over the country. Some of the key areas which everyone especially the tech industry wanted to see actions included governments’ renewed pledge with its tech initiatives including smart city, digital and make in India.

A lot of hopes are tied with rollout of Goods & Services Tax (GST). With increase in digitization, cyber security is another area which many leaders cited as one of the top expectation from finance minister Arun Jaitley. Ensuring safety of online transactions would be critical as we brace for digitalization and a cashless economy. Overall, a renewed focus on IT is the much-needed fillip the industries were looking for. In one of the longest budget speech ever, Arun Jaitley laid out 10 themes of the budget this year. This concludes Farmers, Rural population, Youth, Poor and the underprivileged, Infrastructure, Financial sector, Digital economy, Public services, effective governance, prudent fiscal management, and Tax administration “honouring the honest”.

**Key ‘Tech’ Announcements from the Budget of 2017**

The Modi government continues the push for less-cash economy after announcing the much talked about demonetization drive in November last year. Budget 2017 comes up with several steps to promote digital transactions.

125 lakh people have embraced the BHIM wallet app so far, says Jaitley. He also announced that the government will roll out two new schemes to further escalate the adoption of the app – Referral Bonus Scheme for individuals and a Cash Back Scheme for merchants. As we have reported earlier, the government will also launch Aadhar Pay, which is a merchant version of Aadhaar Enabled Payment System, shortly.

The government will set up a mission with a target of 2,500 crores digital transactions for 2017-18 through UPI, USSD, IMPS, Aadhar Pay, and debit cards. The government is working on a proposal to mandate government receipts through digital means. There will be a Payments Regulatory Board in the RBI which will replace the existing Board for supervision of payment and settlement systems. Aadhaar based smart card will be provided for senior citizens. The government will also roll out scheme for senior citizens to give them assured income and health benefits.
By 2019, all coaches of Indian Railways will be fitted with bio-toilets. The Finance Minister announced a new initiative called DigiGaon to provide tele-medicine, education, and skills, through digital technology. Space technology will be used for monitoring MNREGA implementation.

No transaction above three lakhs will be permitted in cash. Political parties will be entitled to receive donations by cheque or digital mode. A proposal to receive all government receipts beyond a certain threshold through e-modes is also under consideration.

Greater usage of digital payments will save trillions of rupees for the Indian economy as it will help bring down the cost of cash, according to a report by payments company Visa Inc. Titled ‘Accelerating the Growth of Digital Payments in India: A Five–year outlook,’ the report looks at the challenge of transitioning India to a less–cash society over the next five years and outlines an action roadmap for lowering the cost of cash to 1.3% of gross domestic product from 1.7% now [7, 8].

Budgetary Provision for Digital Economy

The digital economy is one of clear winners in Union Budget 2017-18. This is unique. There are literally a dozen measures in this budget to promote digital economy.

1. The allocation for Bharat Net Project has been stepped up to Rs 10,000 crores in 2017-18. Finance Minister, Jaitley said that by the end of 2017-18, high speed broadband connectivity on optical fibre will be available in more than 1, 50, 000-gra panchayats, with WiFi hot spots and access to digital services at low tariffs. A Digi Gaon initiative is also to be launched to provide telemedicine, education and skills.

2. Schemes to promote the usage of BHIM: a) referral bonus scheme for individuals; b) cash back scheme for merchants

3. Aadhar Pay, a merchant version of the Aadhar Enabled Payment System, is to be launched for those who do not have debit cards, mobile wallets and mobile phones. A mission will be set up with a target of 2,500 crore digital transactions for 2017-18 through UPI, USSD, Aadhar Pay, IMPS and debit cards. Banks have targeted to introduce additional 10 lakhs new PoS terminals by March 2017. They will be encouraged to introduce 20 lakh Aadhar-based PoS by September 2017.

4. The digital payment infrastructure and grievance handling mechanisms is to be strengthened, with a focus on rural and semi urban areas through post offices, fair price shops and banking correspondents. Petrol pumps, fertilizer depots, municipalities, block offices, road transport offices, universities, colleges, hospitals and other institutions will be encouraged to have facilities for digital payments, including through the BHIM App.

5. There is a proposal to mandate all government receipts, beyond a prescribed limit, through digital means.

6. The Financial Inclusion Fund is to more resources for taking up these initiatives.

7. The Payment and Settlement Systems Act, 2007, is to be reviewed and amended to push digital payments.

8. A Payments Regulatory Board is to be set up in the Reserve Bank of India by replacing the existing Board for Regulation and Supervision of Payment and Settlement Systems.

9. There is a proposal to amend the Negotiable Instruments Act to ensure that payees of dishonoured cheques are able to realise payments.

10. There are plans to limit cash expenditure allowable as deduction, both for revenue as well as capital expenditure, to Rs 10,000. Similarly, the limit of cash donation which can be received by a charitable trust is being reduced from Rs 10,000 to Rs 2,000.

11. The government has accepted the suggestion of the Special Investigation Team (SIT) on black money that no transaction above Rs 3 lakh should be permitted in cash.

12. Various tax sops have been given to miniaturised POS card reader for m-POS, micro ATMs, fingerprint readers/scanners and iris scanners. There is also a push to encourage domestic manufacturing of these devices [8].

Duties on POS, Biometric Scanners Removed in Budget 2017

The Finance Minister said that India is building a
ecosystem to make the country a global hub for electronics manufacturing India has removed duties on components and devices for point of sale machines, biometric readers and iris scanners to encourage local production of point of sale devices and encourage digital payments. “To promote cashless transactions, I propose to exempt BCD (basic custom duties), excise duties, CVD (countervailing duties), SAD (special additional duty) on miniaturized card readers and mPOS micro ATMs standards for version 1.5.1, finger print readers, scanners and iris scanners,” said Jaitley in his Budget speech. "Simultaneously, I propose to exempt parts... components for manufacturing of such device so as to encourage domestic manufacturing of these items,” Jaitley said. Over 250 investment proposals for electronics manufacturing have been received in the last 2 years, totaling an investment of Rs 1.26 lakh crores. A number of global leaders and mobile manufacturers have set up production facilities in India. I have therefore exponentially increased the allocation for incentive schemes like MSIPS and EDF to Rs 745 crores in 2017-18. This is an all-time high,” he said.

At the same time, he increased duties from nil to 2 per cent on populated printed circuit boards (PCBs) for use in the manufacture of mobile phone to encourage local production [9].

Some Facts and Figures on Indian Telecom [10]

I. Number of telecom (mobile and landline) subscribers: ~1074 million (as on 30.9.16)

II. Number of fixed line subscribers: 24.5 m (as on 30.9.16)

III. Number of cellular (GSM, CDMA and WLL-Fixed) subscribers: 1050 m (as on 30.9.16)

IV. Number of broadband (incl. wireless) subscribers: 192 m (as on 30.9.16)

V. Number of GSM cellular subscribers: 712 m (as on 30.4.15)

VI. Number of CDMA cellular subscribers: 155 m (as on 31.12.09)

VII. Overall tele density: 841/1000 inhabitants (as on 30.9.16)

VIII. Number of PCO's (Public Call Offices): 5.5 m (as on 31.12.09)

IX. Number of VPT's (Village Public Telephones): 0.55 m (as on 31.3.06)

X. More facts on telecom are available at the Department of Telecommunications network status page.

XI. Total revenues of telecom service providers (2005-06): Rupees 880 billion

XII. Telecom equipment production (2007-08): Rupees 954 billion

XIII. Smartphone market (2015): estimate 97 million

Opportunities for India in the Digital Economy

Speaking at the 104th Indian Science Congress in Tirupati mentioned that as innovation takes deep roots, the knowledge-based century is set to throw open a bundle of opportunities, said French Nobel laureate Jean Tirole. What is required to excel are scientific insight and economic sense, he added. As promoting innovation became the buzzword, having its echoes in India as well, Prof. Tirole saw the emergence of schools and universities as holding the key in this process. He however felt that the universities or the highly educated alone could not usher in the era of innovation, as several start-ups had started off with a humble beginning to make it big. Even while creating wealth, the digital economy also offered its share of crime and asked the stakeholders to be wary of it. Prof. Tirole also spoke on the creation and destruction of jobs in the new economy, akin to job losers due to globalization and technology change. “The advent of robots and online marketing could lead to job loss, but there will be more jobs in delivery and highly-skilled areas,” he predicted [11].

V C Gopalratnam, CIO, Cisco opined that the digital economy is the new productivity platform that some experts regard as the third industrial revolution. Digital revolution, also known as ‘The Internet Economy’ or Internet of Everything (IoE), is expected to generate new market growth opportunities, jobs and become the biggest business opportunity of mankind in the next 30 to 40 years.

Goldman Sachs Predicts that India- comprising
15% of the world population, with a growth rate of 7 to 8%, could be the second largest economy by 2030. India’s new leadership considers the digital economy as a major growth enabler. When Prime Minister Narendra Modi strategically listed “Digital India” among the top priorities for the new central government, he delivered a resounding nod to the digital economy’s opportunities.

The Department of Electronics and Information Technology of India published Internet of Things policy estimating IoT industry in India grows up to INR 940 billion, by 2020. Focus areas include agriculture, health, water quality, natural disasters, transportation, security, automobile, supply chain management, smart cities, automated metering and monitoring of utilities, waste management, oil and gas.

Cisco estimates that all IoE pillars - Internet of things, Internet of people, Internet of data, and Internet of Process for India have a value at stake (VAS) of INR 31.880 trillion (about half a trillion U.S. dollars) for the next ten years. From that INR 7.263 trillion is in the public sector and INR 24.616 trillion is in the private sector during the next decade.

The estimated biggest opportunities listed are connected learning, smart grid, gas onitoring, and travel avoidance. The so-called “Payment” opportunity is listed with VAS of INR 1030 billion and “Connected Learning” is listed with VAS of INR 818 billion. The India opportunities are among two major groups: people/citizens with INR 1447 billion opportunity and cities with INR 5816 billion. Primary benefits of India’s public sector are increased revenue; reduced costs; higher employee productivity; improved safety and security; improved environment; enhanced citizen experience, and better health and well-being.

Overall VAS in India’s private sector is calculated to be INR 24. 616 billion. For the private sector, there are two categories of opportunities: cross-industry use cases with INR 5.860 trillion and vertical-industry use cases with INR 18.756 trillion.

Prime Minister Modi’s vision for a Digital India is a strategic call to embrace the opportunity for India as one of the leaders in the third industrial revolution, and the use of Information and Communication Technologies (ICTs) that has never been greater.

India’s leaders also acknowledge the digital economy’s potential and have substantially invested in digitalization for public and private sectors. The commitment of India’s government to spend Rs1.13T (US$19 billion) within the next five years strategically acknowledges the increasing value of Communication Technologies (ICTs).

Nearly 40 percent of the global value at stake will have new winners and vendors in the next decade. This major opportunity of the digital economy has the power to change the lives of millions of people of India. It could be an important vehicle for change and it could provide the opportunity for India to dramatically expand its role and influence in the global economy and become a powerhouse of digital innovation [12].

Advantages and Disadvantages of Digital Revolution

Internet is an essential enabler of the digital economy. Some may claim that the digital economy is rapidly becoming the economy with very little commerce being possible without some Internet participation. The ubiquitous Internet allows anyone to participate in the economy wherever they are in the world. It’s a truly global village with new opportunities as well as threats. Leveraging the opportunities of the Internet will become increasingly important for remaining competitive in the global economy. The internet enables innovation and it is essential for competitive economies to continually innovate. Without innovation, other economies will be able to take competitive advantages from the application of the Internet. Telecommunications is an essential enabler with increasing reliance being placed on networks to support changing approaches to business operations including computing in the cloud. Opportunity knocks for those prepared for change by embracing the digital economy. Not unlike the agricultural and industrial revolutions that preceded it, there will be little choice but to embrace the digital economy. Those who ignore the changes, which are happening now, will inevitably decline economically and competitively relative to the adopters. That is not to ignore the risks of a highly-connected society on a global scale. It is essential that society is eternally vigilant to suppress undesirable consequences of the digital economy, and ensure that suitable safeguards are available to avoid exploitation of the kind, which was enabled by the agricultural and industrial revolutions [13-18].

Impact of Digital India

- By 2019 Broadband in 2.5 lakh villages,
- Universal phone connectivity Net Zero Imports by 2020
400,000 ➢ Public Internet Access Points

➢ Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens

➢ Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics J

➢ Obs Job creation: Direct 1.7 Cr. and Indirect at least 8.5 Cr.

➢ E-Governance and eServices: Across government

➢ India to be leader in IT use in services - health, education, banking

➢ Digitally empowered citizens - public cloud, internet access

➢ Digital payments recorded 55 per cent increase in 2016-17 and the trend is likely to continue in the coming years indicating that India is at 'the cusp of revolution' in this area, Niti Aayog Principal Advisor Ratan P Watal said. The spurt, over 2015-16, came in the financial year during which the government demonetised high-value currency.

➢ India is during a digital revolution with Internet users going beyond just search and social networking and moving to more mature activities like online shopping and banking. Already 70% urban internet users are digitally influenced during financial product purchase i.e. they use at least one digital channel during the purchase journey of a financial product.

Conclusion

The Digital India vision provides the intensified impetus for further momentum and progress for this initiative and this would promote inclusive growth that covers electronic services, products, devices, manufacturing and job opportunities. India in the 21st Century must strive to meet the aspirations of its citizens where government and its services reach the doorsteps of citizens and contribute towards a long-lasting positive impact. The Digital India Programme aims to transform India into a digitally empowered society and knowledge economy by leveraging IT as a growth engine of new India. The aim of the paper is to present the Government of India’s initiative in digital movement.

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References


5. Press Information Bureau Government of India Cabinet

6. Make in India (2017) Digital India: Transforming India into a knowledge economy


8. Union Budget (2017-18) Has Set. The Stage for India’s Digital Revolution


10. Indian Telecom (2017) India’s largest wireless telecom operators as on march.


12. Opportunities for India in the Digital Economy.


14. All you need to know about Digital India programme: Explained


16. Roy Ajit (2017) GST-A Revolution in India's Tax System:

17. Wavier p (2001) Bridging the digital divide: Refocusing on a market-based approach, An AEC perspective. The Australian AEC Study Centre, Months University, Melbourne, Australia.

18. Peter Hitchiner (2010) Digital Economy: Where are, we are heading, Presentation to Australian Computer Society TSIG 26.