Digital India:
IT (Indian Talent) + IT(Information Technology)
= IT (India Tomorrow - Knowledge Economy)

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Abstract:

The Make in India programme and Digital India, the target here is to achieve "net zero imports" in electronics by 2020: a rather high bar. Incentives would be offered for manufacturers and incubators and cluster would be set up for startups. The government would also procure locally. There's a long way to go to achieve this, though. Right now, India imports 65% of its current demand for electronic products, with its electronics import bill for 2013-'14 coming up to $31 billion. After petroleum products and gold, India spends the most on importing electronic items. This initiative, in a way, has an important foreign policy facet, since most of our electronics come from China with which India had a trade deficit of $36 billion in 2013-'14 It is concluded that the concept created a storm in India and the noise reached the parliament. We will try to find the answers to questions that will the Digital India program benefit computer science and IT engineering students, Will there be more jobs, what is the Digital India Campaign, will digital India be successful, is India really becoming a digital India? Are there any drawbacks in digital India and how does "Digital India" help business in the next couple of years.

Key words: Digital India , Make in India,   Information and Communication

1. Introduction

Information and Communication Technologies can enhance the transformation of work culture by serving a variety of ends, better delivery of government services to citizens, improved government interactions with business and industry, citizen empowerment through access to information and participation for decision-making and more efficient government management.

Digitalization of governance and public transactions make more comfortable work and reduce time taking. Even though India is known as a powerhouse of software, the availability of electronic government services to citizens is still comparatively low. The National e-Governance Plan approved in 2006 has made a steady progress through Mission Mode Projects and Core ICT Infrastructure, but greater thrust is required to ensure effective progress in electronics manufacturing and e-

Governance in the country. 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   and delivering good governance to citizens by synchronized and co-ordinated engagement with both Central Government and State Government.

2. What is Digital India? : National e- governance plan and knowledge future

Digital India is an ambitious programme of Government to prepare India for a knowledge future. Hon'ble Shri Narender Modi, Prime Minsiter of India has laid emphasis on National e-governance plan and has gave its approval for Digital India – A programme to transform India into digital empowered society and knowledge economy. This will be for preparing the India for the knowledge based transformation and delivering good governance to citizens by synchronized and co-ordinated engagement with both Central Government and State Government.

3. Who envisaged Digital India programme

This programme has been envisaged by Department of Electronics and Information Technology (DeitY) and will impact ministry of communications & IT, ministry of rural development, ministry of human resource development, ministry of health and others. This programme will also benefit all states and union territories. The existing/ ongoing e-Governance initiatives would be revamped to align them with the principles 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.

Digital empowerment of citizens will pay emphasis on universal digital literacy and availability of digital resources/services in Indian languages. The programme will be implemented in phases from 2014 till 2018. 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 but according to government estimate it will cost Rs 113,000 crore. To implement this government is planning to strengthen National Informatics Center (NIC) by restructuring it to support all central government departments and state governments. Positions of chief information officers (CIO) would be created in at least 10 key ministries so that e-Governance projects could be designed, developed and implemented faster. Apart from this, the DeitY would create four senior positions within the department for managing the programme say additional secretary, Digital India; joint secretary, infrastructure development; joint secretary, capacity building and digital enablement; and joint secretary, IT applications in uncovered areas & process re-engineering.

4. Scope of Digital India

The overall scope of this programme is:

- To prepare India for a knowledge future.

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

- Making technology central to enabling change.

- On being an Umbrella Programme - covering many departments

The 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. 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
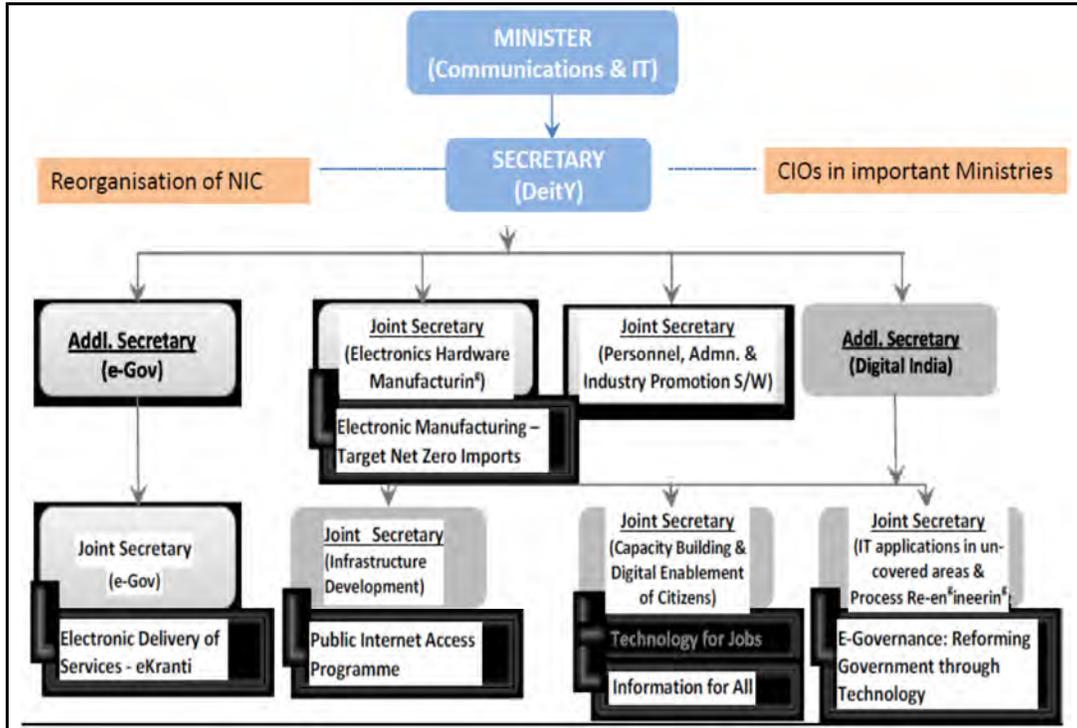
5. Vision of Digital India:

The vision of Digital India is to transform the country into a digitally empowered society and knowledge economy. It 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. Digital infrastructure will focus on providing high speed secure Internet. Governance and services on demand will stress on integrating services across departments and jurisdictions and making services available in real time for both online and mobile platform.

6. Digital India: It's making a lot of noise but what is it really? - Nine Pillars of Digital India

Infrastructure as a utility to every citizen:

High speed internet shall be made available in all gram panchayats; Cradle to grave digital identity; Mobile and Bank account would enable participation in digital and financial space at individual level; Easy access to common service centre within their locality; Shareable private space on a public cloud; and Safe and secure cyber space in the country.

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Governance and Services on Demand:

Single window access to all persons by seamlessly integrating departments or jurisdictions; availability of government services in online and mobile platforms; All citizen entitlements to be available on the Cloud to ensure easy access;

Government services to be digitally transformed for improving ease of doing business; Making financial transactions above a threshold, electronic and cashless; and Leveraging GIS for decision support systems and development.

Digital empowerment of citizens:

Universal digital literacy; All digital resources universally accessible; All government documents/certificates to be available on the Cloud; Availability of digital resources/services in Indian languages; Collaborative digital platforms for participative governance; Portability of all entitlements for individuals through the cloud under the programme.

Universal **Digital Literacy**

- Universally accessible **digital resources**
- **All documents/ certificates to be available on cloud**
- Availability of digital resources / services in **Indian languages**
- **Collaborative digital platforms** for participative governance
- **Portability** of all entitlements through **cloud**

Government-speak aside, the programme essentially aims to offer Indians better electronic connectivity, boost public e-services and push high-tech industry. Digital India functions via eight main channels. Here's a quick look at what they are and the challenges for each.

Box: Nine Pillars of Digital India

1. Broadband Highways	4. E-Governance – Reforming government through Technology	7. Electronics Manufacturing – Target NET ZERO Imports
2. Universal Access to Phones	5. eKranti – Electronic delivery of services	8. IT for Jobs
3. Public Internet Access Programme	6. Information for All	9. Early Harvest Programmes
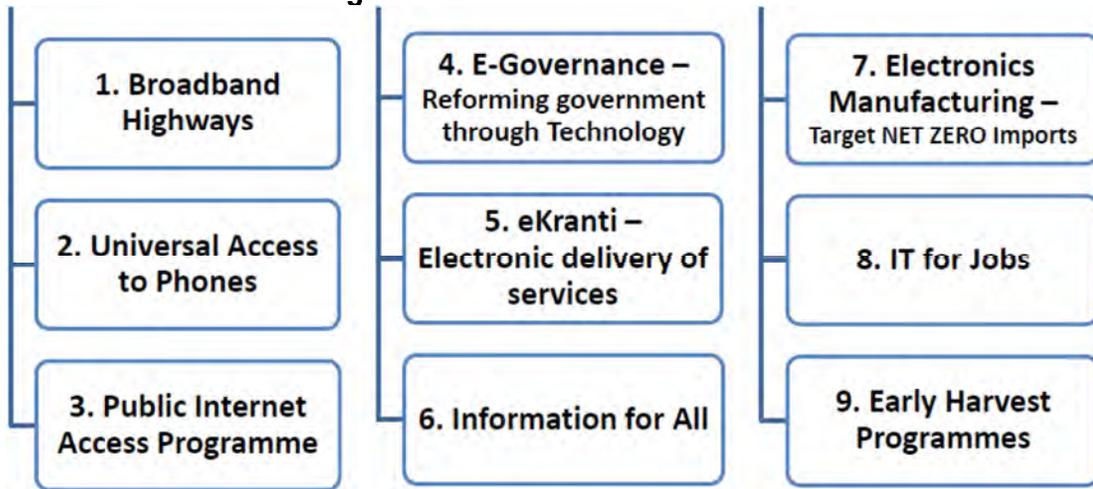
Broadband infrastructure

India has abysmal fixed line broadband numbers: The total number of broadband-enabled households is a little above 1.5 crore – which comes out to a penetration rate of 5%.

Broadband for all Rural	• Coverage: 250,000 GP • Timeline: December 2016 • CAPEX: Rs 32,000 Cr • Nodal Dept: DoT	1yr: 50,000 GP 2yr: 100,000 GP 3yr: 100,000 GP
Broadband for all Urban	• Virtual Network Operators for service delivery. • Mandate communication infrastructure in new urban development and buildings.	Changes in Rules to facilitate.
National Information Infrastructure	• Coverage: Nationwide • Timeline: March 2017 • Cost: Rs 15,686 Cr • Nodal Dept: DeitY	Integration of SWAN, NKN, NOFN. To be implemented in 2 years

The government intends to fix this and have 2.5 lakh village panchayats connected by the end of next year. The National Information Infrastructure project will also integrate and ramp up networks and data centres for use by the government. This looks great on paper and is certainly the need of the hour but the government has released

few details of its delivery mechanisms. Currently, public sector service providers such as BSNL and MTNL can barely provide connectivity in the metros. Without a minimum level of service, India's rural areas will simply leapfrog over legacy broadband and head to mobile for internet connectivity – which is more expensive but at least it will work.

Universal mobile connectivity:

Unlike fixed lines, India has done very well with mobile. It has more than 84 crore mobile users and approximately a fourth of those – 21 crore – access the internet on their devices. This means for every fixed-line broadband user, India has 14 mobile internet users.

Train people in smaller towns & villages for IT sector jobs	• Coverage: 1 Crore students • Timeline: 5 years • Cost: Rs 200 Cr for weaker sections • Nodal Agency: DeitY	New Scheme IT ready workforce
IT/ITES in NE	• Scope: Setting up of BPO per NE State • Coverage: NE States • Nodal Agency: DeitY	ICT enabled growth in NE
Train Service Delivery Agents to run viable businesses delivering IT services	• Coverage: 3,00,000 • Timeline: 2 Years • Nodal Agency: DeitY	Ongoing Skilled VLEs and Viable CSCs
Telecom service providers to train rural workforce to cater to their own needs	• Coverage: 5,00,000 • Timeline: 5 Years • Nodal Agency: DoT	Telecom ready workforce

In all this sunshine, though, there are some spots of shade. More than 42 thousand villages exist without a mobile network – something the Department of Telecom will aim to mend at a cost of Rs 16,000 crore. This might be an easy fix but the bigger issue for India here is quality, especially with mobile internet where speeds are glacial and data prices high for India's income levels.

Public internet access:

It involves setting up government – run internet centres and using 1, 50,000 post offices as a multi-service centres as long term vision. Made viable ongoing programme research of government services to all the panchayats, multi-functional end-points for service delivery by coverage of 1, 30,000 villages with the cost of Rs 4750 cr to end of the year 2017.

For common citizens, there will be the ***Digital Lockers*** initiative to help them store important documents like PAN cards, passports, mark sheets and degree certificates.

➢ The e-hospital portal will allow citizens to make appointments with the doctors.

➢ A portal on agriculture will also be unveiled as will e-basta, a platform to provide study material for students.

➢ A project aimed at digitizing land records, birth and death certificates, mark sheets and other such utilities would also be unveiled at Digital India Week.

➢ Digital India aims to build infrastructure and provide the internet as a utility to every citizen.000

➢ It promises to improve service delivery by making services available online.

➢ Digital India seeks to enable people to access the internet by building digital literacy.

➢ The e-Sign facility will allow online digital signature service

➢ BSNL targets to provide Wi-Fi hotspots in 2500 cities

➢ The project also aims to supports Daughter Funds including early stage angel funds and venture funds in the area of electronics.

➢ Resource pool of IP within the country
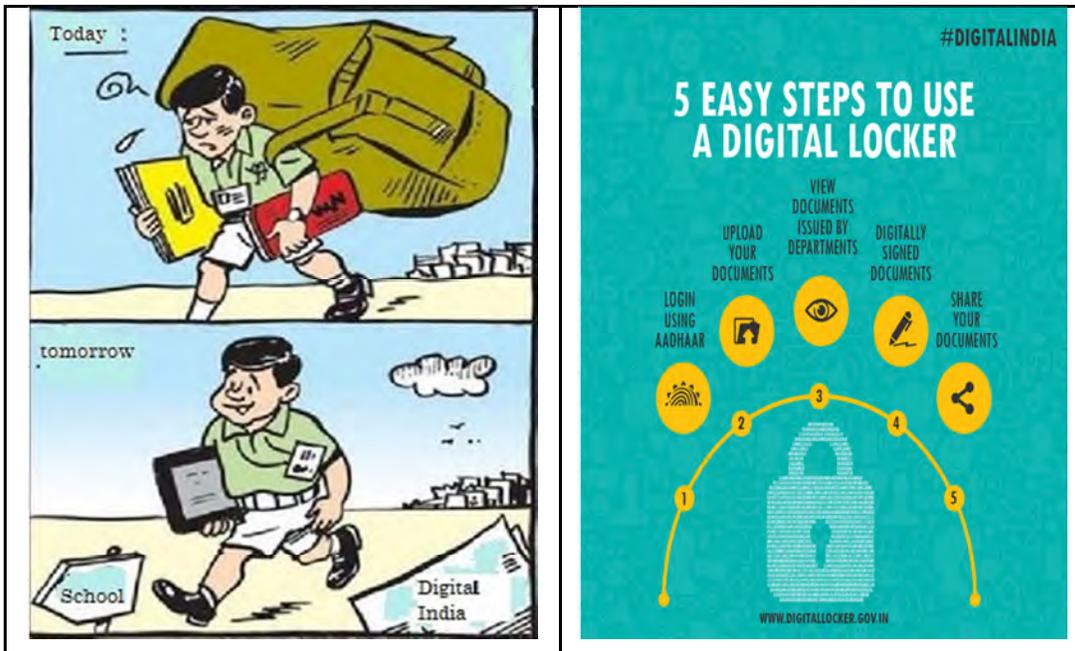
Given that for many low-income Indians, computing devices would be out of reach, these centres should fill in a crucial gap, allowing everyone to bridge the digital divide.

Information for all:

The government will move all of its communication online. Documents will be hosted on the cloud and social media will be used as a communication tool. The government has already moved well on this step, with the citizen portal MyGov.in up and running and Modi and his ministers already sharp communicators on Twitter.

Electronics manufacturing

The Make in India programme and Digital India, the target here is to achieve "net zero imports" in electronics by 2020: a rather high bar. Incentives would be offered for manufacturers and incubators and cluster would be set up for startups. The government would also procure locally. There's a long way to go to achieve this, though. Right now, India imports 65% of its current demand for electronic products, with its electronics import bill for 2013-'14 coming up to $31 billion. After petroleum products and gold, India spends the most on importing electronic items. This initiative, in a way, has an important foreign policy facet, since most of our electronics come from China with which India had a trade deficit of $36 billion in 2013-'14 – a number that Modi would be keen on seeing grow smaller.

IT jobs

India's much-vaunted information technology and business process outsourcing revolution, in reality, covers only a small part of the country – it is confined to the large metros. This initiative attempts to take this industry to India's small towns and villages. One crore students will be trained for IT jobs, while BPOs will be set up in every North Eastern state.

Early harvest programmes:

A disparate range of programmes, which have one thing in common: they're quick wins. These cover basics such as biometric attendance, public Wi-Fi hot spots, government email and, somewhat quirkily, a government e-greeting portal.

IT platform for messages	• Coverage: Elected representatives, All Govt employees • 1.36 Cr mobiles and 22 Lakh emails • Mass Messaging Application developed	Targeted Mass messaging since July 14
Government Greetings to be e-Greetings	• Basket of e-Greetings templates available • Crowd sourcing of e-Greetings thru MyGov • e-Greetings Portal ready by 14 August 2014	1st e-Greeting from PM on 15th Aug 2014
Biometric attendance	• Coverage: All Central Govt. Offices in Delhi • Operational in DeitY & Initiated in Urban Developm • On-boarding started in other depts • Procurement of devices – tender issued	To be completed by Oct 2014
Wi-fi in All Universities	• Scope: All universities on NKN • 400 additional Universities • Cost: Rs 790 Cr	Approval - Oct 2014 Implementation done by Dec 2015
Secure email within government	• Phase I upgradation for 10 Lakh employees done • Ph II for 50 Lakh employees by March 2015 • Cost: Rs 98 Cr	Email to be primary mode of communication
Standardize government email design	• Standardised templates under preparation	To be ready by October 2014

E-Governance- e-Kranti

India has hundreds of e-governance projects, which have achieved varying degrees of success. The aims of this initiative would be to simplify and reduce forms – no more triplicates and online tracking towards increase accountability for government services. Digitise government documents: this programme, named "digital locker" was launched on Wednesday. Integrate the Aadhar number as standard online identification: if you've been postponing applying for an Aadhar card, it's soon going to become very important. In addition to this, a subsection of e-governance projects, clubbed under the name e-Kranti, will be put on the fast track and rolled out on a national scale. Three notable initiatives under this are e-learning, e-healthcare and farmer training.

A. Government to Citizen

Government to Citizen Relationship is the most basic aspect of E-Governance. In modern times, Government deals with many aspects of the life of a citizen. The relation of a citizen with the Government starts with the birth and ends with the death of the citizen. A person transacts with the Government on every corner of his life, may it be birth registration, marriage registration, divorce or death registration.

The G2C relation will include the services provided by the Government to the Citizens. These services include the public utility services i.e. Telecommunication, Transportation, Post, Medical facilities, Electricity, Education and also some of the democratic services relating to the citizenship such as Certification, Registration, Licensing, Taxation, Passports, ID Cards etc.

Therefore E-Governance in G2C relationship will involve facilitation of the services flowing from Government towards Citizens with the use of Information and Communications Technology (ICT).

1. E-Citizenship - E-Citizenship will include the implementation of ICT for facilitation of Government Services relating to citizenship of an individual. It may involve online transactions relating to issue and renewal of documents like *Ration Cards, Passports, Election Cards, Identity Cards,* etc. It will require the Government to create a virtual identity of every citizen so as to

enable them to access the Government services online. For the same, Government would need to create a Citizen Database which is a huge task.

2. E-Registration - E-Registration will cover the online registration of various contracts. An individual enters into several contracts during his life. Many of these contracts and transactions require registration for giving it legality and enforceability. Such registration may also be made ICT enabled. E-registration will help to reduce a significant amount of paperwork.

3. E-Transportation - E-Transportation services would include ICT enablement of services of Government relating to Transport by Road, Rail, Water or Air. This may involve online –

1. booking and cancellation of tickets,

2. status of vehicles, railways, boats and flights,

3. issue and renewal of Driving Licences,

4. registration and renewal of vehicles,

5. transfer of vehicles,

6. payment of the fees of licences,

7. payment of fees and taxes for vehicle registration,

4. E-Health - E-Health services would be ICT enablement of the health services of the Government.

Under this interconnection of all hospitals may take place. A patient database may be created. A local pharmacy database may also be created. All this can be done.

5. E-Education - E-Education would cover the implementation of ICT in imparting of education and conducting of Courses. Distant as will as classroom education will be facilitated with the use of ICT. Use of internet can reduce the communication time required in Distance education; Internet may also help in conducting online classes.

6. E-Help - E-Help refers to facilitation of disaster and crisis management using ICT. It includes the use of technologies like internet, SMS, etc. for the purpose of reducing the response time of the Government agencies to the disasters. NGOs help Government in providing help in situations of disasters. Online information relating to disasters, warnings and calls for help can help the Government and the NGOs coordinate their work and facilitate and speed up the rescue work.

7. E-Taxation - E-Taxation will facilitate the taxing process by implementing ICT in the taxing process. Online tax due alerts and online payment of taxes would help transact faster.

Digital India: the road to Smart Governance

B. Citizen to Government

Citizen to Government relationship will include the communication of citizens with the Government arising in the Democratic process like voting, campaigning, feedback, etc.

1. E-Democracy - The true concept of Democracy includes the participation of the citizens in the democratic and governing process. Today due to the increased population the active participation of the citizens in governing process is

not possible. The ICT can help enable the true democratic process including voting, public opinion, feedback and Government accountability.

2. E-Feedback - E-Feedback includes the use of ICT for the purpose of giving feedback to the Government. Lobbying is pursuing the Government to take a certain decision. Use of ICT can enable online feedback to the Government, online debates as to the Government services.

C. Government to Government

G2G relationship would include the relationships between Central and State Government and also the relationship between two or more Government departments.

1. E-administration - E-administration would include the implementation of ICT in the functioning of the Government, internally and externally. Implementation of ICT can reduce the communication time between the Government Departments and Governments. It can substantially reduce paperwork if properly used. E-administration will also bring morality and transparency to the administration of Government Departments.

2. E-police - The concept of E-police is little different from Cyber-Police. Cyber Police require technology experts to curb the electronic/cybercrimes. E-police refers to the use of ICT for the purpose of facilitating the work of the Police department in investigation and administration. The concept of E-police includes databases of Police Officers, their performances, Criminal databases – wanted as well as in custody, the trends in crimes and much more. ICT can help reduce the response time of the Police department and also reduce cost by reducing paperwork.

3. E-courts - The concept of E-Court will include the ICT enablement of the judicial process. Technology may help distant hearing, online summons and warrants and online publication of Judgments and Decrees.

D. Government to Business

1. E-Taxation - Corporate sector pays many taxes, duties and dues to the Government. Payment of these taxes and duties will be made easier by E-Taxation. Online taxing and online payment of taxes can help reduce cost and time required for physical submission of taxes. ICT can also help crosscheck the frauds and deficiencies in payment, further bringing accuracy and revenue to the Government.

2. E-Licencing - Companies have to acquire various licences from the Government, similarly the companies have to acquire various registrations. ICT enablement of the licensing and registration can reduce time and cost.

3. E-Tendering - E-Tendering will include the facilities of online tendering and procurement. It will online alerts as to new opportunities of business with the Government and

also online submission of tenders and online allotment of work. It will reduce time and cost involved in the physical tendering system.

7. Investment expectations

The Digital India Fund incubated India's first fully integrated new media platform that can be ported onto existing cable networks in January 2014. The USD 3 Billion initiative aims to transform digital cable networks into IP broadcast networks with satellite and fiber backhaul to provide basic broadband connectivity nationally within 24 months. Overall Costs of Digital India is Rs 100,000 Cr in ongoing schemes (only DeitY, DOT & not included those in other line Ministries) and Rs 13,000 Cr for new schemes & activities. The platform is based in the indigenous HDVSL standard and delivers end to end digital NGN like connectivity with extremely low cost terminals to smart phones and flat panel television sets. The platform is device OS agnostic and delivers a cloud hosted service capable of television, low cost telephony and high speed internet on any device through the unlicensed spectrum. The connectivity to the last drop access points is provided by the coaxial network of cable operators. The Digital India Fund seeks to align with entrepreneurs, mentors and potential employees who have hands-on expertise and extensive work experience in various aspects of the semiconductor and advanced manufacturing ecosystem.

Business leaders like Airbus India CEO Peter Gutsmiedl, RIL Chairman and MD Mukesh Ambani, Tata Group Chairman Cyrus Mistry, Bharti Enterprises Chairman Sunil Bharti Mittal, Wipro Chairman Azim Premji, Reliance Group Chairman Anil Ambani, Sterlite Technologies Chairman Anil Agarwal, Adiya Birla Group Chairman Kumaramangalam Birla have confirmed their participation in the programme.

The Digital India Fund invests in Indian businesses that meet the eligibility criteria that the venture meets a critical need in the digital value chain. The business can privately place equity and convertible instruments OR the company is planning an IPO and seeks an anchor investor and/or market maker and/or underwriter. The company has commissioned a vendor due diligence report from a well-known accounting firm. The promoters of the company are premium college alumni and the management has a professional team in place. The Digital India Fund proposes to partner with a wide range of domestic and global players to help catalyze the creation of a robust digital ecosystem. These include:

- International partners with proven technologies.
- Funding agencies involved in the Indian digital ecosystem.
- Academic institutions and other developers of core technologies.

- Commercial research and development organisation.

- Agencies and organizations involved in intellectual property management.

- Other venture capital and PE funds.

- Arms of the government and multilateral development agencies

- The Digital India Fund will initially cater to the digital ecosystem entities in which IIT Alumni are involved as promoters, key executives, customers, suppliers or investors.

Tata Group chairman Cyrus Mistry, Reliance Industries chairman Mukesh Ambani, Wipro chairman Azim Premji, Bharti Group chairman Sunil Mittal and Adani Group chairman Gautam Adani are expected to attend Digital India event. The captains of industry are likely to announce their association with some of the projects, which include portals on telemedicine and e-hospitals — one partnership with the Apollo Hospital Group has already been forged.

8. **Impact of Digital India by 2019:** Under the programme, expecting significant results that

*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 Jobs

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

•e-Governance & e-Services: Across government

•India to be leader in IT use in services – health, education, banking

•Digitally empowered citizens – public cloud, internet access

9. **Challenges & Changes Needed**

The biggest hurdle here is an extremely basic one: power. So much of India receives so little electricity that even if these centres are set up; they might be of little use, if they only run for, say, one hour in the morning at a time when the farmer is out working his fields. The challenge here would be to scale this down to the grassroots, dealing with multiple levels of government. While Union cabinet ministers might be communicating online, is your local municipal corporator? And how many land records has your state government digitized? There is scope to obstacles due to the Program on this scale never conceived. Each Pillar/program has own challenges .because shortage of infrastructure facilities is a common. Qualified Human Resource Issues is essential and it should not effect on

employment opportunities. NIC - not equipped for a fraction of this task (obsolesce) - needs revamping & restructuring.   DeitY – needs program managers – at least 4 more officers at senior levels and Ministries – Need a Chief Information Officer / Chief Technology Officer (CIO/CTO) and can be anyone – from within or outside government to effective management of the programme.

Financial Resource Issues

Mostly structured around ongoing programs such as better focus, need some restructuring. Some others are process improvements or better utilisation of resources. A few new programs may be needed – particularly in Electronics manufacturing and Skill Development

Coordination Issues: Leadership and support is critical for success. The programmes have vast scope with more than ten departments. Thus, coordination and Need commitment and effort among them is very important.

10. Conclusion

It is concluded that the concept created a storm in India and the noise reached the parliament. We will try to find the answers to questions that will the Digital India program benefit computer science and IT engineering students, Will there be more jobs, what is the Digital India Campaign, will digital India be successful, is India really becoming a digital India? Are there any drawbacks in digital India and how does "Digital India" help business in the next couple of years.

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