

# Digital India Programme : A Public Administration Reformation Initiative

*Yogesh K Dwivedi  
Nripendra P Rana  
Antonis C Simintiras  
Banita Lal*



*...the DIP can be viewed as a truly revolutionary initiative. By providing the opportunity to educate and enhance the digital skill set of potentially the whole population, the Programme has the potential to create an environment of not just digital but overall social inclusion - the optimal state of a nation is to achieve social inclusion of all citizens which can partially be attained through digital inclusion*

**P**UBLIC Administration reformation enabled by Information and Communication Technologies (ICTs) is argued to have the potential to provide several benefits and opportunities for various stakeholders (Dwivedi et al., 2013ab). Examples of such benefits include: transformation of public organisations in terms of efficiency, responsiveness, effectiveness, transparency, reduced bureaucracy, better communication and coordination, and most importantly, it can enable the delivery of, and access to, citizen-centric ICT-enabled government services anytime and anywhere (Dwivedi et al., 2013ab).

Although India initiated such reformation in the form of e-government during the late 1990s, which gained further momentum after the launch of the National e-Governance Plan (NeGP) in 2006, the country is still lagging behind 117 countries in the World E-Government Development Index (UN e-Gov Survey, 2014). A previous Yojana article by Dwivedi et al. (2013b) identified several

reasons that were arguably hampering India's effort towards becoming an equitable information society and knowledge economy. Examples of the reasons identified included: the fragmentation of ICT-based systems at the central, state and district levels; the lack of system integration; the last-mile bottleneck; insufficient locally situated common service centres (CSCs); lack of awareness, access and use of e-government services; poor digital literacy; lack of availability of e-services in regional languages, lack of trust as well as security and privacy concerns (Dwivedi et al., 2012; 2013b; Rana et al., 2013).

In addition, the said article went on to make several recommendations including: the need to map existing systems, the need to streamline and integrate emerging systems; the use of a mobile platform for service delivery; the development of voice-based mobile applications; the provision of widespread training to equip citizens with adequate ICT skills; an increase in the number of CSCs to reachable distances in all rural communities; the provision of e-services in regional

Yogesh K. Dwivedi is Professor of Digital and Social Media and Head of Management and Systems Section at the School of Management, Swansea University, UK. He is a widely published academic in the area of e-government. Nripendra P. Rana is Lecturer at the School of Management, Swansea University, UK. He is a leading researcher in the area of e-government. Antonis C. Simintiras is Professor of Marketing and Deputy Dean for Internationalisation at the School of Management, Swansea University, UK. His research interests are in the areas of sales negotiations and sales management, consumer behaviour and cross-cultural research methodology. Banita Lal is Senior Lecturer in Nottingham Business School, Nottingham Trent University, Nottingham, UK. She is a leading researcher in the area of adoption and diffusion of IS/IT.

languages; and the need to establish the perception of trust and security in the electronic environment as necessary conditions for effective ICT-enabled Public Administration reformation within the Indian context (Dwivedi et al., 2013b).

Recently, the Government of India (GoI) announced a new exemplary initiative which reflects almost all the aforementioned points as identified by Dwivedi et al. (2013b). Hereafter, this article aims to provide an overview of this landmark initiative - known as the 'Digital India Programme' - that, if executed effectively, will have a significant and a positive impact on India's socio-economic development and Public Administration reformation.

### Outlining the Digital India Programme

The Digital India Programme (DIP) is a cross-ministry initiative which aims to transform India into a digitally-enabled and empowered information society and knowledge economy (DI Presentation, 2014; PIB, 2014). The Programme, which seems like a larger-than-life-sized reincarnation of NeGP, conceived by the Department of Electronics and Information Technology (DeitY) of GoI, has been allocated more than a trillion rupees for its successful execution (DI Presentation, 2014; PIB, 2014). The DIP was approved by the Cabinet on 20th August 2014 and has set an ambitious target to be completed by the year 2018. The main goal of this colossal transformational initiative is to radically redesign and digitise government processes and make government services available and accessible electronically as well as to contribute towards new employment generation (DI Presentation, 2014; PIB, 2014).

The vision of DIP is centred around the following three key areas: (1) Infrastructure as a utility to every citizen; (2) Governance and services on demand; and (3) Digital empowerment of citizens

(DI Presentation, 2014; PIB, 2014). These three key areas are depicted in Figure 1 and further elaborated in the following paragraphs.

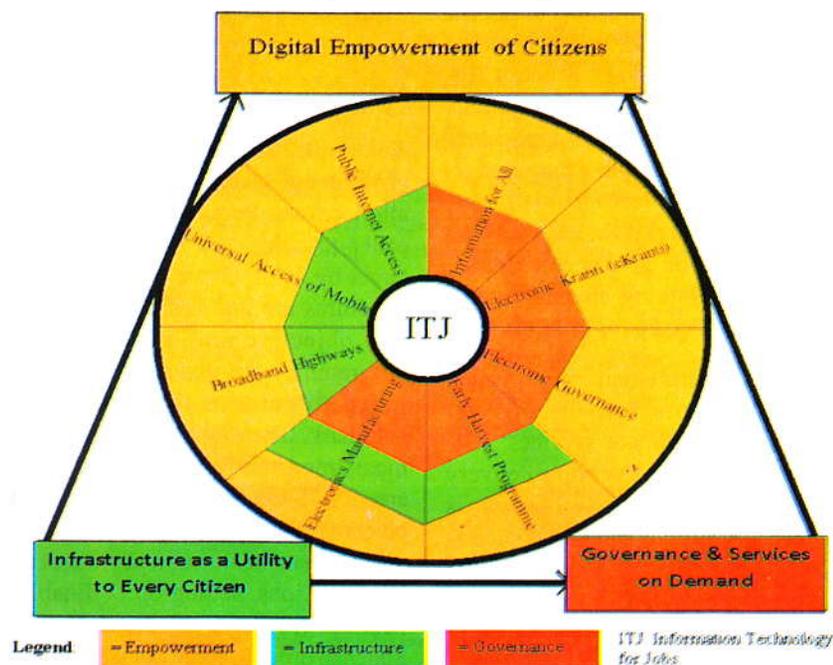
The first key area of 'infrastructure as a utility to every citizen' includes: high speed Internet access to be made available in all *gram panchayats* with the view to digitally empower citizens; the provision of vital digital identity (i.e., unique, lifelong, online, and authenticable) to citizens; enabling citizen participation in the digital and financial space by means of mobile phones and bank accounts for their socio-economic empowerment; the provision of easy access to a CSC, which is a locally situated, multi-functional end-point for service delivery to citizens; the provision of shareable private space accessible on a public cloud; and the establishment of a safe and secure cyberspace in the country that would facilitate the wider adoption and use of electronic services (DI Presentation, 2014; PIB, 2014).

The second key area of 'governance and services on demand' encompasses the following: there should be a seamless integration across departments or jurisdictions

for providing an easy and single window access of various government services to various stakeholders; and such government services should be made available in real time by utilising online and mobile platforms. In order to ensure easy access of information, various entitlements of each citizen should be available on the cloud. Furthermore, ease of doing business should be ensured and facilitated by creating digitally transformed government services, which should enable and facilitate electronic and cashless financial transactions. Finally, there should be the utilisation of integrated electronic government systems for decision support and development (DI Presentation, 2014; PIB, 2014).

The thrust of the third key area of 'digital empowerment of citizens' entails: imparting digital literacy amongst Indian citizens; making digital resources widely accessible; for easy and ubiquitous access, all government documents/certificates should be made available on the cloud; to encourage widespread adoption and use, digital resources and/or services should be made available in regional languages; in order to develop a culture

Figure 1. Digital India Programme: Three Key Areas and Nine Pillars



of participative governance, there should be the provision of collaborative digital platforms; and all entitlements for individuals should be made portable through the cloud (DI Presentation, 2014; PIB, 2014).

DIP has also identified nine pillars that are essential for achieving the three key areas described above. These pillars are: (1) Broadband Highways; (2) Universal Access to Mobile Connectivity; (3) Public Internet Access Programme; (4) e-Governance-reforming government through technology; (5) eKranti - electronic delivery of services; (6) Information for All; (7) Electronics Manufacturing; (8) IT for Jobs; and (9) Early Harvest Programmes (DI Presentation, 2014; PIB, 2014).

Broadband Highways as a pillar will cover broadband for all rural and urban areas and also the integration of the national information infrastructure. The second pillar is focused on creating infrastructure for the ubiquitous mobile connectivity. The third pillar entails the establishment of an adequate number (for a total of 2,50,000 villages) of locally situated CSCs by March 2017, as well as 1,50,000 Post Offices to become multi-service centres within the next two years. As a fourth pillar, the government has planned to reform through technology (i.e., e-Governance) coupled with Business Process Re-engineering (BPR), which includes form simplification, online application and tracking, use of online repositories, integration of services and platforms, automation of workflow, and use of an automated public grievance redressal system for resolving citizens' issues (DI Presentation, 2014; PIB, 2014).

The fifth pillar entails the provision of touch points for citizens for accessing government services. It is concerned with the electronic delivery of services using eKranti which is divided into various categories such as e-Education, e-Health, technology for planning through GIS-based decision making, technology for farmers using online ordering of inputs, technology

for security, financial-inclusion through mobile-banking and a micro ATM program, e-Court, e-Police, e-Jails and e-Prosecution. The sixth pillar is information-for-all where the government pledges to provide online hosting of information and documents as well as to proactively engage itself with social media to keep citizens updated with various important information (MyGov.in portal has already been launched for this purpose), and online messaging to citizens on special occasions (DI Presentation, 2014; PIB, 2014).

**...both infrastructure and streamlined e-services coupled with governance are essential for realising true digital empowerment of citizens, since a weakness in any of these key areas will act as an impediment in transforming India into Digital India. Even more important is a real focus on the area of 'digital literacy' as both infrastructure and streamlined e-services will be of no value if end users lack awareness of what is available to them, as well as if they lack the requisite skills and confidence to use ICT-based systems.**

The seventh pillar encompasses electronic manufacturing where the government's target is to manufacture all electronic items in the country in order to achieve a net zero import target by 2020. However, the existing structures are not sufficient to attain this objective and many ongoing programmes are planned to be fine-tuned to achieve this significant landmark. The eighth and one of the most important pillars of DIP is to create ICT-based jobs. To achieve this objective, the government plans to train people in smaller towns and villages for IT sector jobs, setting up IT Enabled Services (ITES) in the North-Eastern States in order to train service delivery

agents to run sustainable business-delivering IT services and to ensure that telecom service providers train the rural workforce to make them ready to help themselves. Finally, the ninth pillar, that is the Early Harvest Programme, has already started functioning with the aim to have an IT platform for messages, government greetings being available through e-Greetings and provisions for biometric attendance in the government offices. The initial phases of the Early Harvest Programmes have already been achieved (DI Presentation, 2014; PIB, 2014).

### **Evaluation and Recommendations**

We consciously used the terms 'Exemplary' and 'Landmark' for the Digital India initiative as, in our view, it is 'holistic' and 'inclusive' in nature and based on a long-term sustainable vision.

By 'holistic', we refer to the DIP's focus on all essential and inter-connected aspects, namely infrastructure development, integrated and streamlined electronic services, and digital literacy of citizens. As illustrated by Figure 1, both infrastructure and streamlined e-services coupled with governance are essential for realising true digital empowerment of citizens, since a weakness in any of these key areas will act as an impediment in transforming India into Digital India. Even more important is the real focus on the area of 'digital literacy' as both infrastructure and streamlined e-services will be of no value if end users lack awareness of what is available to them, as well as if they lack the requisite skills and confidence to use ICT-based systems. DIP is 'inclusive' as it is not just focusing on the development of urban areas. Rather, equal or more attention is being given to the development of the rural population. If successfully implemented as conceived, the impact of Internet connectivity (via broadband, mobile and public Internet access points) will be significant in terms of bridging the 'digital divide' between the urban and rural population and

creating an inclusive and equitable information society and knowledge economy.

We termed it ‘Landmark’ considering its scale (in terms of scope, budget, benefits and ambitious timeline for completion), its transformational nature, as well as its contribution towards skill development and employment generation on a massive scale, as the DIP has projected 1.7 crore direct job creation and 8.5 crore indirectly (DI Presentation, 2014; PIB, 2014). No previous Indian digital initiative can match the DIP on such scale. Its landmark nature is also clearly evidenced through interest shown by the largest global IT firms (such as Google, Microsoft) and associations such as NASSCOM to contribute to this initiative. Furthermore, one can term it a landmark initiative as it will have a significant influence on the dynamics and structure of consumer retailing in rural areas due to the widespread emergence of electronic commerce (a more encompassing term would be digital and social commerce) and digital marketing. It is because of its ‘Exemplary’ and ‘Landmark’ nature that the DIP is prominently lauded by industry leaders as well as covered by both Indian and the international media.

The projected benefits of the programme will only be realised when the DIP is completed, wholly or partially. Given that India currently has a strong and stable government, we believe a large part of it (particularly the technical and infrastructural aspects of it) is likely to be completed as planned since some elements have already either been piloted or implemented. For example, employees’ attendance monitoring using biometric technology is well underway in a phased manner. However, the digital literacy and human development aspects may take longer as reaching out to all, imparting skills and awareness and changing their attitudes is not only a mammoth but a complex task that can take many years to achieve at an

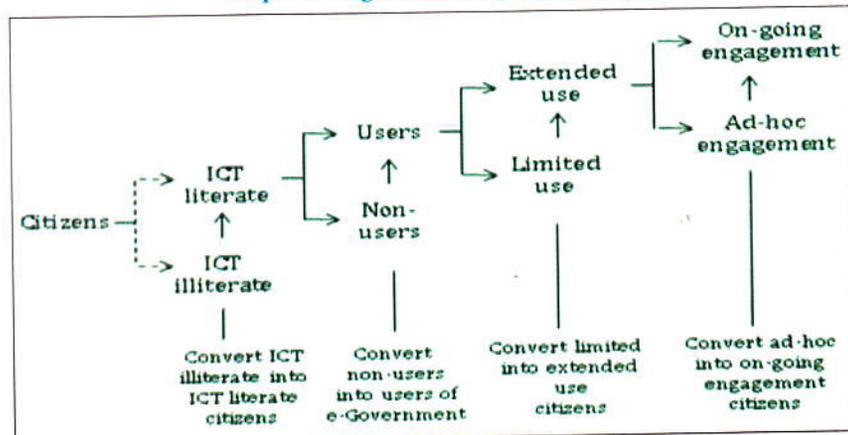
effective level. We recommend a clear, systematic and targeted approach to be used for promoting and developing digital literacy, particularly to the rural population.

Although there is no magic bullet to help yield digital literacy to all within a specific and tight timeframe, adopting a marketing-oriented segmentation and targeting strategy would more than likely facilitate the process in an effective manner. Figure 2 illustrates a Marketing-Oriented Citizen Engagement Framework (adopted from Simintiras et al., 2014) which can help in the effective promotion of digital literacy. In short, the said Citizen Engagement Framework (CEF) argues to segment citizens based on ICT literacy and the different level of usage behaviour of ICT-enabled services. CEF ‘offers a progressive pathway of “conversions” in the ladder of adoption and engagement’ as it recommends ‘three levels of usage behaviour (i.e., non-users, light users and heavy users) and two levels of engagement (i.e., ad hoc engagement and ongoing engagement)’ as a basis to direct strategic focus to: ‘1) convert non-users into users; 2) convert light users into heavy users; and 3) convert ad hoc engaged citizens into citizens with ongoing engagement’ (Simintiras et al., 2014, p.2). Readers are encouraged to refer to the Simintiras et al. (2014) article for further insight regarding the CEF.

The DIP has included different approaches (i.e. broadband, mobile, public Internet access points) to offer Internet connectivity and for the provision of CSCs for accessing government services. These are effective approaches to bridge the digital divide and ultimately, to facilitate digital inclusion. However, there is a bigger obstacle that must be given thought at this stage. A large number of Indian villages still do not have an electricity supply and power outages are common in a large part of India. Thus, home Internet connections, CSCs and public Internet access points would not be useful (hence, all investments on these will be sub-optimal) unless there is an uninterrupted electricity supply. In order to overcome this problem, CSCs and public Internet access points should be powered by a supply of electricity that has been generated by alternative means, such as solar or wind power. In order to harness the maximum potential of CSCs and to provide access to government services electronically on a 24/7 basis, each CSC should be accompanied with the installation of solar panels of adequate capacity. We believe this will not only provide sustainability and continuity to the DIP agenda, but will also create awareness and a positive public attitude towards alternative power sources.

The DIP has the provision of developing and piloting ‘Massive Online Open Courses (MOOCs)’,

**Figure 2. The Citizen Engagement Framework (CEF) for promoting effective Digital Literacy**



(Source: Adopted from Simintiras et al., 2014, p.4)

which is a cutting edge innovation yet to be tested and adopted widely. Such innovation requires attitudinal change in order to be widely adopted. For that, it is important to have user involvement during its development. Furthermore, a few large scale pilots coupled with ethnographic research should be conducted before launching the initiative on a wider scale.

The condition of state-run schools, particularly in not-so-advanced Indian states, is not promising. Teachers are not well trained and are poorly skilled for using digital technologies. In that backdrop, it is simply not enough to just connect schools with broadband. Teachers should be trained on how to utilise digital technologies for delivering education and engaging students and their parents. Perhaps a benchmarking study in this regard from South Korea, which is one of the world leaders in terms of broadband penetration, would be beneficial. Schools played an important role in encouraging the widespread adoption of broadband connectivity in South Korea that is currently ranked #1 by a recent survey on the world E-Government Development Index conducted by the United Nations (UN e-Gov Survey, 2014). Broadband connectivity, availability and use of e-books, and imparting ICT skills at the school level will be immensely valuable as it will provide Indian children with the opportunity to become 'digital natives' which, in turn, will help to remove the digital divide within the next 20 years.

Based on the available information, one area that is deficiently covered in the DIP is the provision for the evaluation of different elements as and when they will be completed. Dwivedi et al. (2013b, p.33) argued that: 'evaluation is essential in order to examine if the desired value is being achieved and if there are any lessons that need to be learned for the development of future electronic services. Without effective evaluation, similar mistakes can be made again.'

Particularly in a country like India where corruption is prevalent at all levels, evaluation of various projects through a 'third eye' is critical to ensure that the DIP is moving towards the right direction. By a 'third eye' here, we refer to academics and research scholars (both from India and overseas higher education institutions) who can conduct methodologically rigorous and independent evaluations of all individual projects. Unfortunately, there is currently little or no indication of such involvements.

**By providing the opportunity to educate and enhance the digital skill set of potentially the whole population, the Programme has the potential to create an environment of not just digital but overall social inclusion - the optimal state of a nation is to achieve social inclusion of all citizens which can partially be attained through digital inclusion.**

The DIP offers an extremely valuable opportunity to involve doctoral students from various disciplines (technology, business and management, the social sciences) and provide a unique and conducive environment to conduct interdisciplinary as well as transdisciplinary research. Such a provision will not only contribute towards the successful completion of the DIP, but would also contribute towards developing an interdisciplinary/transdisciplinary research workforce and research culture and also bring academia more closely to other public and private sector organisations. Thus, we believe academic involvement and evaluation is an essential ingredient of the DIP which is currently missing.

We now present our final thoughts about India's transformational journey which intends to reincarnate today's India into 'Digital India' by 2022. By launching the Digital India Programme, the GoI has developed a path for this transformational journey. Although the path to achieving the desired state of

'Digital India' seems largely smooth, it is by no means a straightforward one and has some stumbling blocks and impediments as discussed above. The National Informatics Centre (NIC) is largely unprepared for facing stumbling blocks and impediments that Digital India will encounter. Hence, a true metamorphosis of the NIC is essential which, in turn, can lead to a good possibility that the metamorphosis from present day India to Digital India can be achieved. However, a further condition is that this journey has to be continued uninterrupted until reaching the end destination. It is also of utmost importance that during this journey, Indian citizens should be constantly updated, engaged and skilled/trained to appreciate and prepare for the transition to transformed Digital India.

Upon reflection of the Digital India Programme and the various factors that need to be considered at all stages of the Programme - including the development, implementation and adoption - the DIP can be viewed as a truly revolutionary initiative. By providing the opportunity to educate and enhance the digital skill set of potentially the whole population, the Programme has the potential to create an environment of not just digital but overall social inclusion - the optimal state of a nation is to achieve social inclusion of all citizens which can partially be attained through digital inclusion. Thus, the DIP provides not only a promising but an exciting opportunity for the whole of India. In order to make this vision a reality, nevertheless, requires a cultural transformation of Indian citizens and their habits - possibly the most critical yet enthralling challenge facing the creators of the DIP.

We can be confident in asserting that if the Programme achieves the expected results then, in the new economy, India would be in a perfect position to succeed and to sustain positive national growth, which is a crucial element in enhancing India's global competitiveness. The future for India, as the ambitious DIP suggests, is bright.

## Readings

DI Presentation (2014). *Digital India: A programme to transform India into digital empowered society and knowledge economy*. Department of Electronics and Information Technology, Government of India. Accessed from <<http://pib.nic.in/archieve/others/2014/aug/d2014082010.pptx>> on January 5, 2015.

Dwivedi, Y. K., Shareef, M., Pandey, S. K., and Kumar, V. (2013a). *Public Administration Reformation: Market Demand from Public Organizations*, Routledge, New York, USA.

Dwivedi, Y.K., Rana, N.P., and Simintiras, A.C. (2013b). E-Government: Potential and Challenges, *Yojana*, 57, 30-33.

Dwivedi, Y. K., Weerakkody, V., and Janssen, M. (2012). Moving towards maturity: challenges to successful e-government implementation and diffusion. *ACM SIGMIS Database*, 42(4), 11-22.

PIB (2014). Digital India - A programme to transform India into digital empowered society and knowledge economy. Press Information Bureau, Government of India Cabinet. Accessed from <<http://pib.nic.in/newsite/PrintRelease.aspx?relid=108926>> on January 5, 2015.

Rana, N.P., Dwivedi, Y.K., and Williams, M.D. (2013). Analysing challenges, barriers and CSF of e-gov adoption. *Transforming Government: People, Process and Policy*, 7(2), 177-198.

Simintiras, A. C., Dwivedi, Y. K., and Rana, N. P. (2014). Can Marketing Strategies Enhance the Adoption of Electronic Government Initiatives? *International Journal of Electronic Government Research*, 10(2), 1-7.

UN e-Gov Survey (2014). United Nations e-government survey: Compare Countries. Accessed from <<http://unpan3.un.org/egovkb/en-us/Data/Compare-Countries>> on 07 January 2015.

(E-mail: [y.k.dwivedi@swansea.ac.uk](mailto:y.k.dwivedi@swansea.ac.uk)  
[n.p.rana@swansea.ac.uk](mailto:n.p.rana@swansea.ac.uk)  
[a.c.simintiras@swansea.ac.uk](mailto:a.c.simintiras@swansea.ac.uk)  
[banita.lal@ntu.ac.uk](mailto:banita.lal@ntu.ac.uk))

### 55,000 villages to get Telecom network by Dec 2016

Mobile connectivity will be given to nearly 10 per cent of Indian villages that are still unconnected by December 2016. Of the 6,00,000 villages in the country, about 55,000 are still awaiting mobile connectivity. These villages fall primarily under the red corridor - an area affected by left-wing extremism - and in the North East. This move will give a major thrust to the Digital India Programme. Under the 1.13 lakh crore mega Digital India initiative, the government aims to connect the entire country with broadband Internet and deliver services electronically through mobile phones.

Recently, the Cabinet had approved spending of Rs 5,300 crore to install 6,673 telecom towers across 8,621 villages, primarily to boost telecom network along the national highways in the Northeast. Setting up mobile phone network in the Naxal-affected regions is one of the long-pending demands of the Home Ministry.