9. E-Governance in the Age of Globalization: *Challenges Ahead for India*

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Abstract:

The study deals with the revolution of information technology in the functioning of government services in the country. Thinking about globalization, we visualize the application of technology and more specifically Information and Communication Technology (ICT) to reduce the differences in different corners of the economy and make the differentiated world into a truly integrated global village. Utilization of technology in government services has gathered endurance called as electronic governance. The old notion of administration seems to become obsolete as the government at central, state and at local levels are facing challenges posed by increased demand for better quality of governance. Electronic-governance has already been acknowledged as indispensable strength to a revolutionary development in standard, coherence, and efficacy of government. With the massive growth in population, low rate of literacy, cultural differences and above all, profound destitution has created difficulties in running the administration by the government of India. So, nothing was left but a centralized strategy driven by ICT as it seems to bring more transparency and increased accountability. Undoubtedly, in the present scenario, the progress of any government relies on the application of electronic governance. In fact, the success of a government can be judged by the reach of electronic governance to its population. Based on secondary data this study enquires into the challenges raised in front of the Government of India (GOI) to implement this system usefully, restrain challenges to implement it successfully, find out the potential opportunities available and examine the challenges encountered by it.

Keywords:

Information technology; ICT; Electronic Governance; Globalization; EGDI; EPART; GOI

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The twenty-first century is termed as an era of globalization where technologies are progressing and contributing to make an impact on different aspects of the economy. There is no doubt that technology has been used universally irrespective of businesses and other fields in different segments around the globe. India is not an exception. The government, in fact, are beginning to apply ICTs into public sectors to improve capabilities and transform their relations with citizens and businesses since the early 1990s (UN, 2002). This term is often used to describe as the employment of the ICT to each and every activity of the administration to provide better services (Ilyas, 2016). There is confusion between e-government and e-governance as competing paradigms at times during their development (Calista & Melitski, 2005). We will use the term e-governance or Electronic-Governance since it is more popular to recognize than e-government. E-governance has the capacity to improve interactions with business houses, run government more efficiently and effectively by bringing better public services to its residents, empowering them to access information and solve all the issues quickly and effectively (Heeks, 1999).

Various models of e-governance are fabricated by scholars consisting of stages[1]. But irrespective of different models, the main aim, and purpose over here is to enhance government efficiency and outreach in all private and government sectors for a developing country like India.

1. Survey of Literature

E-governance is the concept that gained coinage off late but there is no benchmark to justify it. Different administration frames its meaning in accordance with its objectives and requirements. Some widely used definitions are worth to be mentioned.

The International Monetary Fund (IMF, 2008) has mentioned that it is the power to exercise country's economic, political, and social institutions through technology. It comprises of strategies, actions, and processes through which citizens and institutions meet their obligations with the major objective to make things easier and simpler and to improve multiple aspects of governance. It is the articulation of the administrative assistance and information by using electronic means to the residence of the country. The resulting benefits are reduced delinquency; enlarge clarity, significant satisfaction, the growth of revenue and reduction of cost.

[1] For example Layne and Lee Maturity Model in United States, Andersen and Henriksen Maturity Model in Denmark etc.

In the words of UNESCO (UNESCO, 2008) e-governance is to be defined as the inclusion of technology in the legislative, financial along with administration of a country for the interest of people and exertion of judicial rights and obligations. In synonyms way, we can say that it is the performance of the government through technology to ease efficient, speedy and transparent information and performing government administrative activities for the resident of the country.

Electronic governance was adopted by many countries worldwide as it reduces government operational cost and ensures a citizen-friendly government. Countries that adopted e-governance early are Singapore and Australia (Bagga & Iqbal, 2012). But the country which is satisfyingly utilizing this technology for the first time was introduced by Chile (Prabhu, 2004). For providing improved government processes, governments keep provisions for having investments in ICT. Use of e-governance online is high in Singapore, Sweden, and Norway where people feel comfortable dealing with government electronically (Sharma, 2004).

2. Evolution in India

India has evolved as robust economies in the world at the recent time. This impressive growth is due to remarkable development in the field of scientific and technological know-how (Rajput & Nair, 2013). The process has actually been started with the establishment of a Department of Electronics (DOE) in 1970. But it actually took the shape in the year 1977[2].The entire picture of the administrative mode of function changed in the country in the year 1987 with the launching of National satellite- based Network (NICNET)[3]. In late 1990s GOI initiated government websites to provide users with information only, but more citizen interaction and participation were incorporated through online transactions and decision-making much later (Prabhu, 2004). In the year 2006, the GOI came up with e-governance plan (GOI, 2008) with national level[4] for the first time with various others projects with specified activities[5] to look after the smooth running of the government activities (Kumar, Kumar & Kumar, 2014).

Challenges for India: The government of India has faced many problems with this new system as it deals with redefining of entire government processes. India has a fixed, static and hierarchical regulated government structure but e-governance seems to be much more vigorous, horizontal and unrestricted in nature (Bagga & Iqbal, 2012). E-governance promises speed and efficiency but its

[2] By establishment of National Informatics Centre (NIC)
[3] NICNET was equipped with all latest technologies of the time like TELNET, FTP, internet along with database services given by District Information System of the National Informatics Centre (DISNIC)
[4] Called as National e-governance plan (NEGP)
[5] Called as Mission Mode Projects (MMPs)

effectiveness will only be possible if the services given to the people are infallible, low cost and unequivocal (Prabhu, 2004). The word e-governance does not symbolize an instant change from an old system to an entirely new world but it is basically an ongoing exercise where new architectures are to be designed, systems need to be evaluated and the officials have to be trained accordingly (Sharma, 2004). E-governance initiatives would be a source of potential opportunities but challenges are manifold that are usually faced in the realization of these predicted benefits in front of India after implementing the e-governance.

The population is viewed as a virtue in India but at the same time, it offers various other challenges. For example, generating distinctive identification to every individual of this huge resident of the country, keeping the records and updating databases from time to time (Mittal & Kaur, 2013) is really an arduous task in introducing a new system.

India is a country with multicultural and multilingual population. More than 80 percent of the population in India is incapable of communication through English language (Census, 2011). Moreover, there exists no single language that is spoken across the country. So, e-governance requires the native language of the targeted audience to easily access and use of these applications in their daily life[6].

The capability of reading and writing along with proper understanding a vernacular is termed as a literate person (Mittal & Kaur, 2013). Fear of failure of this technology induced by the government may be below level education among people (Rajput, & Nair, 2013). So, it is assumed that even if all the infrastructure would be provided to them, the purpose of e-governance would not be fulfilled completely[7].

E-governance is completely depended on infrastructure. Improper infrastructure may be another ground of failure behind several e-governance projects (Jeffrey, Seifert, 2003; as cited in Jon, Gant, 2008). One who is frequently accessing the internet will be in a comfort zone and can easily access any e-governance services (Safeena & Kammani, 2013). But the true picture is reverse of this in our country[8]. We shall discuss this issue in the findings part in detail.

The success of any e-governance program is mostly dependent on the awareness of it (Dwivedi & Sahu, 2008). But this change is not only awareness but acceptance also. Without accurate appliance and awareness about its offered services, the scope of acceptance becomes less because the significance of the scope must be known to the people in advance.

[6] For example, e-governance website like vikaspedia.in (NEGP) is available in 21 different languages

[7] Moreover, different state of our country have different literacy rate. For example, Kerala is the only state to have 100 percent literacy and literacy has a direct impact on the e- governance acceptance. Many successful project running in Kerala like e-Srinkhala, RDNet, FRIENDS etc.

[8] According to ITU (2011) there are about 120 million internet users in a country of 1.2 billion inhabitants — this is merely10 percent of the population

Since the government deals with information which is of national interest, their security must be of utmost importance. Security is turned to be the major issue that is prerequisites and resolved as soon as it is encountered. Security which includes sensitive statistical data is shared over various systems (Jeffrey & Seifert, 2003; Agrawal, Pandey, Kashyap, & Agarwal, 2016). People feel that transferring their personal information with public agencies electronically is not safe (Beniwal & Sikka, 2013). Trust and security are the two critical factors that limit implementation of this technology at the administrative level.

Along with privacy of data, e-governance faces a significant challenge in terms of network security structure. These networking and database security issues are related to the potency of security software, network access management, software development, operating systems controls, service continuity etc. (Jeffrey & Seifert, 2003). Though e-governance depends on and is directly linked to building conviction and reliance of citizen of our country, the menace of fraud and misuse of sensitive data are persistent.

The financial strength of any state is measured by its GDP (Dwivedi, & Sahu, 2008). Since e-governance is a facility and its installation is very expensive, most of the developed and developing nation spends a significant part of their GDP in e-governance projects[9]. Our country holds rank 12 in this front (Census, 2011; Beniwal & Sikka, 2013)[10].

Like GDP, Per Capita Income (PCI) of India is also small unlike the different countries, which clearly states individual's low affordability of infrastructure for accessing online facilities extended under the aegis of GOI (Mittal & Kaur, 2013; Backus, 2001). According to World Bank, nearly 68.8 percent of the population of the country has a capacity to spend $2 a day (World Bank, 2010). So, it seems to be tough for them to access the facilities of e-governance.

Revolutionary changes are difficult to implement and especially if it involves government. As the e-governance is all about the administrative changes so it should pass through certain channels for the approval which is time-consuming. In some cases, approval time for projects is more in terms of implementation time. The reason behind this is a series of redefining and restructuring of all sections of the government system is required to successfully implement this programmes. Due to complexity and rigidness of government which has existed over the years, sudden changes will be difficult to adopt (Athalye, 2013).

Another difficulty in executing this programme is the difference in age of the people of India. The true fact is not every age group of the nation accesses the internet in the same way. As for example, old people not only find it difficult to adopt changes in their working lifestyle but also they resist learning. Here literacy isn't the factor. In fact, many educated old people are not interested in

[9] The United Kingdom and Singapore had spent 1percent and 0.8 percent respectively of their gross domestic product (GDP) on e-government in the year 2004.
[10] Spending only 3 percent of GDP.

digital literacy because they feel that they are too old to learn any new things which hinders the implementation process (Rajput & Nair, 2013).

The Population of India also bring major challenges like establishing individual's unique identities. Citizens of India have no authentic unique identity although our government is trying to make real efforts in providing an unique identity to the entire population (Prabhu, 2004).

3. Scope of E-Governance

With the help of a four-phase e-governance model mainly designed to study government sectors and is used to categorize projects according to their development level, we can predict the scope of this technology in India (Table – 1). Organizations in the administrative and individual level have used this e-governance model while evaluating an e-governance strategy. While using these models, the user can review strategy after each phase, and can, within bounds of time and resources, provide chances to retrace steps if required. Governments normally initiate their process of e-governance with the help of online information, and gradually turn towards more complex services, in the face of rising quest for convenience and efficiency. Because some services prove to be easier to be made available than the others so it is gradually that these changes will take effect; sometimes growing public demand becomes a driving force; pressing need of cost-effectiveness drives the process in other. E-governance is not simply presenting or using certain technological tools, rather it is basically related to bringing change in the mindset and work culture and integrate government processes and functions to serve the citizens better (Rao, 2007). It is singled out as follows:

- Government-to-Citizen (G2C): In this initiative, citizens are facilitated with citizen-centric form while communication to state (Jon & Gant, 2008).
- Government-to-Government (G2G): This interaction forms the backbone of any form of e-governance (Angela & Stefania, 2015) requires ascending and descending twain interaction between the governmental sectors.
- Government-to-Business/Commercial Sector/Community (G2B): This interaction is between government, commerce, and allied groups or in brief, government-to-Business sector (G2B) which is basically the corporate or commercial sector.
- Government-to-Employees (G2E): This interaction is within the state with employees.

Although the electronic governance embraces by activities and actors, the definite sections are singled out to narrate its collaborative alternation in between people, process, technology and resources. The flow chart is given in Table -2 (Backus, 2001).

4. Methodology

E-Governance is a concept that gets its coinage in recent years, though the inception of this concept was started way back in the year 2003-2004 (Nagamatsu & Tandon, 2004). The analysis of the performance is dependent completely upon secondary data collected from different reputed sources. The study has not tried to analyze it with model building using any sophisticated econometric techniques. On the contrary analysis, vision, strategy, findings presented is resting on a review of relevant literature based on secondary data. Different Charts and tables are framed relevant for this study for analysis of the findings. Some relevant graphs have also been presented as per requirement of understanding of the relevant facts. The time frame taken for the paper is from 2001 to 2016 depending on the availability of data, which have been collected from various reputed sources.

5. Findings

On the basis of various tables, this study has come up with some interesting findings. Proficiency level in India was found to be 74.04 percent (Census, 2011) which clearly states that 25.96 percent of the population will be not in a position to access e-governance websites at all. Table-3 gives some interesting statistics regarding the scenario on the implementation of e-governance by GOI. The statistics show that out of total population of the country, 0.70 percent of the population used to work on the internet in the year 2001 (penetration from the top) which was increased by 27.3 percent from the previous year. This increment was maximum in the year 2002 when it stood at 136.9 percent (UN, 2002). In recent year it is 51.9 percent in 2015 (Angela, & Stefania, 2015) and 30.5 percent in 2016 (UN, 2016). On the other hand, the penetration rate from the top is highest in 2016 (34.8 percent). Thus, we can conclude that 34.80 percent of the population uses internet out of 74.04 percent of the literate population of the country. In fact, the penetration from the top is visible after 2010 (Diagram – 1).

Table – 4 shows the E-governance development index (EGDI) and E-participation index (EPART) of our country from the year 2003 to 2016. When EGDI gives the development of e-governance of the nation, EPART works as supplementary measurement shows online service facilities in G2C mode. Both of these indexes show the ability to use ICT for progress concerning the economy and to abet welfare. The e-governance development index (EGDI) of India was 0.3731 in the year 2003 when it ranked at 87 out of 193 countries and it becomes 0.4638 in 2016 with rank 107 (Table-4). As far as E–participation index (EPART) is concerned, India stood at 41 in 2003 with index 0.2586 and 0.7627 in 2016 with rank 47. It is seen that the rank has diminished in last three years in both EGDI as well as EPART. The highest improvement in EGDI, as well as EPART, was in the year

2012 (with 125 and 75 ranks respectively with an index of 0.3829 and 0.1842). Diagram – 2 which is based on Table – 4 shows the trends the development of both EGDI and EPART in the period 2003 to 2016.

It is worth to be mentioned that our country has been unable to show much progress on e-governance front when compared with other developed countries (UN, 2016). Many countries rank high in terms of execution of this technology and have robust e-governance delivery mechanisms. According to United Nations Survey based on e-governance indices, if we take the apex states, the UK is the world leader (0.9193) followed by Australia (0.9143), Korean Commonwealth (0.8915). Finland (0.8817) and Sweden (0.8704) are close behind as far EGDI is concerned. India lags at a lowly rank of 107 out of 193 countries surveyed with an index of 0.4638 in 2016 (UN, 2016). If we talk about EPART then the UK (with 1.00) was again the front runner followed by Japan and Australia (both having 0.9831) in 2016 (UN, 2016). India again lags at a lowly rank of 27 with an index of 0.7627 which was lowered by 13 ranks compared with previous year.

The information discovered in these substances reveal that India encounters difficulty to utilize ICT services though it has started the initiative long before in its different state- centric programmes (GOI, 2008) (Table – 5). It offers the potential which is not in terms of gathering enormous quantities of information at a minimal cost but also to interact and communicate throughout the globe. In fact, it can transform old challenges and create all possibilities for economic development which is sustainable.

6. Implications

The foremost aim of any technological revolution is enhancing the standard of human life. The requirements of e-governance are to furnish a manifold scale and assistance that help the people of the country in their everyday life. This would be of importance for future success and which is believed to be the most advanced and comprehensive. After analyzing the performances thoroughly (GOI, 2008), India's plans and assessment of its level of readiness for delivery of e-governance services should comprise with various implications. The following initiatives are identified to achieve the objectives (Jalta, 2012):

- E-governance services across the country
- Re-engineering of administrative processes
- Provide the communication backbone
- Computerize administrative workflow of national level
- Connecting all parts of the country through ICT
- Maintaining an index of the residence of the country
- Boosting the e-literacy of a government official in different levels

Benefits of E-Governance

The benefits of the initiative if rightly implemented are also manifold:

- Speedy, suitable, economical amenity to the people
- Clarity, liability, diminishing duplicity
- Increased Participation by People
- Standard facility for businesses and customers
- Increase the capacity of government

Challenges: The challenges for e-governance in our country are identified as political, social, economic and technological aspects (Malik, Dhillon & Verma, 2014) which can be summarized as:

- Political aspects are associated with scheme, code, rules, law enactment, supervision, and decisiveness, management support, funding issues, international affairs, political stability, policy and regulation.
- Social aspects of e-governance are related to its people, literacy rate, employment generation, income, the tradeoff between rural and urban areas between rich and poor, literacy, IT skills and culture.
- Economic aspects are interconnected with funding, financial resources, cost savings, business models, e-commerce, partnership, and collaboration.

7. Conclusion

From the implications discussed above, world economies recognize ICT by catalyzing the economic activity in an effective governance. There is less doubt about technological development leads to change in institutional operations, people's lifestyle and attitude. E-governance in this regard plays an important role in accelerating prosperity of the populace. It is now becoming an accepted methodology involving the adoption of ICT which improves transparency, administration efficiency, public services and provides information to all citizens very fast.

The Indian government is also spending a huge amount on the projects of e-governance but still many of them are unsuccessful by large. As discussed, language barrier, an insufficient acquaintance of the people, low literacy rate, security issue etc. are the major issues that hinder fruitful employment of the technology in our country. Therefore, it is required that government take some actions and make every citizen of the country aware of their latest activities which may help them to take full advantages that are provided by e-governance projects. Many awareness programs

are conducted by the government but those are unreachable in each part of our country. Not only government, citizen participation also plays a vital role in an effectual execution of electronic governance by accepting and adapting themselves to new technology.

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Tables

Table 1: E-governance Initiatives by the government.

Sl. No.	Initiatives	Services
1	**G2C Model**	Share information between government and citizens Examples: Payment of online bills (electricity, water, telephone bills etc.) Online registration of applications copies of land records Online filing of complaints
2	**G2G Model**	Sharing info between intra- governmental sectors Examples: Sharing information between police departments of various states Exchange of government document exchange Finance and budget work etc.
3	**G2B Model**	Sharing information between government and corporate sectors to increase competition Examples: Collection of taxes Rejection and approval of patent of companies Payment of all kind of bills and penalty Sharing of all kind of info, rules and data
4	**G2E Model**	Sharing information between various government employees Examples: Register all kind of working forms through online All kinds of submission of data Attendance record of employees Complaints and dissatisfaction of employees

Source: Second administrative reforms commission, 11th report, GOI, 2008

Table 2: E- governance flow chart

People	Vision	Leadership	Commitment	Competency	Change
Process	Simplicity	Efficiency	Citizen centricity	Sustainability	Cost effectiveness
Technology	Architecture	Open Standards	Reliability	Scalability	Security
Resources	Holistic	Efficient	Service oriented	Sustained	Adequate

Source: E-governance and developing countries: Introduction and examples, Backus, M, 2001

Table 3: Internet users in India

Year	Population (Total)	Internet users(Total)	Penetration (From top)	Change in population (Percentage)	Change in users (Percentage)
2001	1,071,888,190	7,076,031	0.70	1.75	27.3
2002	1,090,189,358	16,765,756	1.5	1.71	136.9
2003	1,108,369,577	18,692,542	1.7	1.67	11.5
2004	1,126,419,321	22,259,583	2.0	1.63	19.1
2005	1,144,326,293	27,327,370	2.4	1.59	22.8
2006	1,162,088,305	32,602,386	2.8	1.55	19.3
2007	1,179,685,631	46,597,582	4.0	1.51	42.9
2008	1,197,070,109	52,431,671	4.4	1.47	12.5
2009	1,214,182,182	62,166,128	5.1	1.43	18.6
2010	1,230,984,504	92,323,838	7.5	1.38	48.5
2011	1,247,446,011	125,617,813	10.1	1.34	36.1
2012	1,263,589,639	158,960,346	12.6	1.29	26.5
2013	1,279,498,874	193,204,330	15.1	1.26	21.5
2014	1,295,291,543	233,152,478	18.0	1.23	20.7
2015	1,311,050,527	354,114,747	27.0	1.22	51.9
2016*	1,326,801,576	462,124,989	34.8	1.20	30.5

Source: Internet Live Stats retrieved from www.internetlivestat.com; International Telecommunication Union (ITU), World Bank; United Nations Population Division; McKinsey and Company 2012
** Estimated on July 1, 2016*

Table- 4: E-governance development index

Year	EGDI*	Rank	Change in rank	EPART**	Rank	Change in rank
2003	0.3731	87	#	0.2586	41	#
2004	0.3879	86	(-) 1	0.1311	59	18
2005	0.4001	87	1	0.1587	57	(-) 2
2008	0.3814	113	26	0.2500	49	(-) 8
2010	0.3567	119	6	0.2000	58	9
2012	0.3829	125	6	0.1842	75	17
2014	0.3834	118	(-) 7	0.6275	40	(-) 35
2016	0.4638	107	(-) 11	0.7627	27	(-) 13

Source: UN e-government knowledge database, Department of economic and social affairs, Division for public administration and development management, 2014, 2016

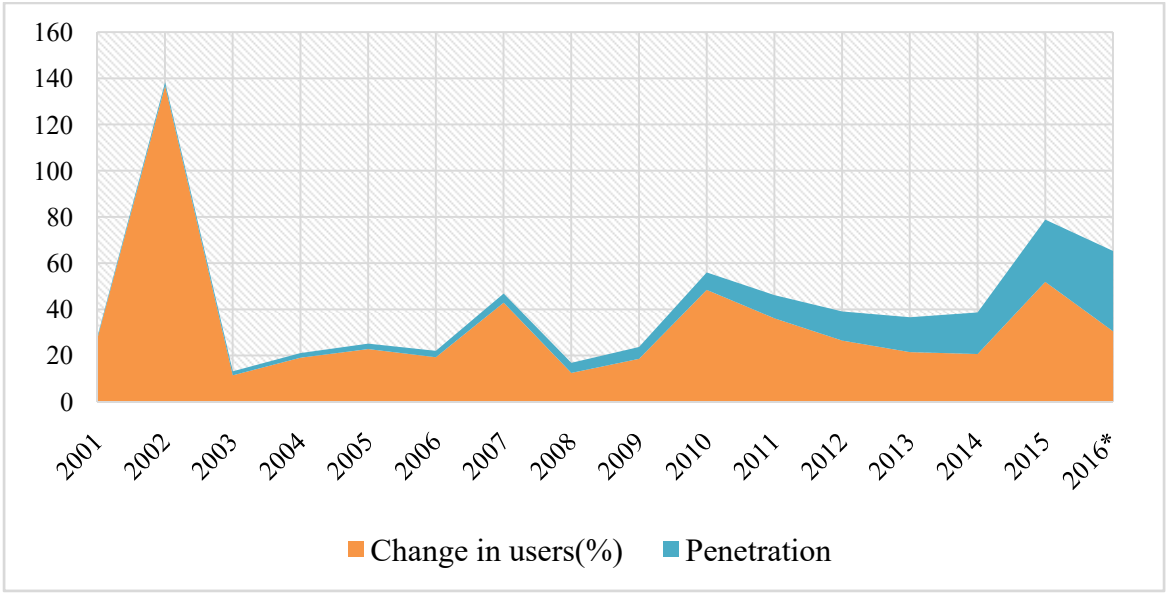
** E-governance development index*
*** E – participation index*

Note: The EGDI represents e-governance development of the country. Besides assessment of the website development patterns, EGDI access infrastructure and educational levels, to reflect how a country is using information technologies to promote access and inclusion of its people. Three important dimensions EGDI includes - provision of online services, telecommunication connectivity, and human capacity.

The EPART, on the other hand, is derived as a supplementary of EGDI index. It extends the dimension by focusing on the use of online services by G2C and G2B module. The EPART includes – E-information, E-consultation, and E-decision making (UN, 2016).

Diagrams

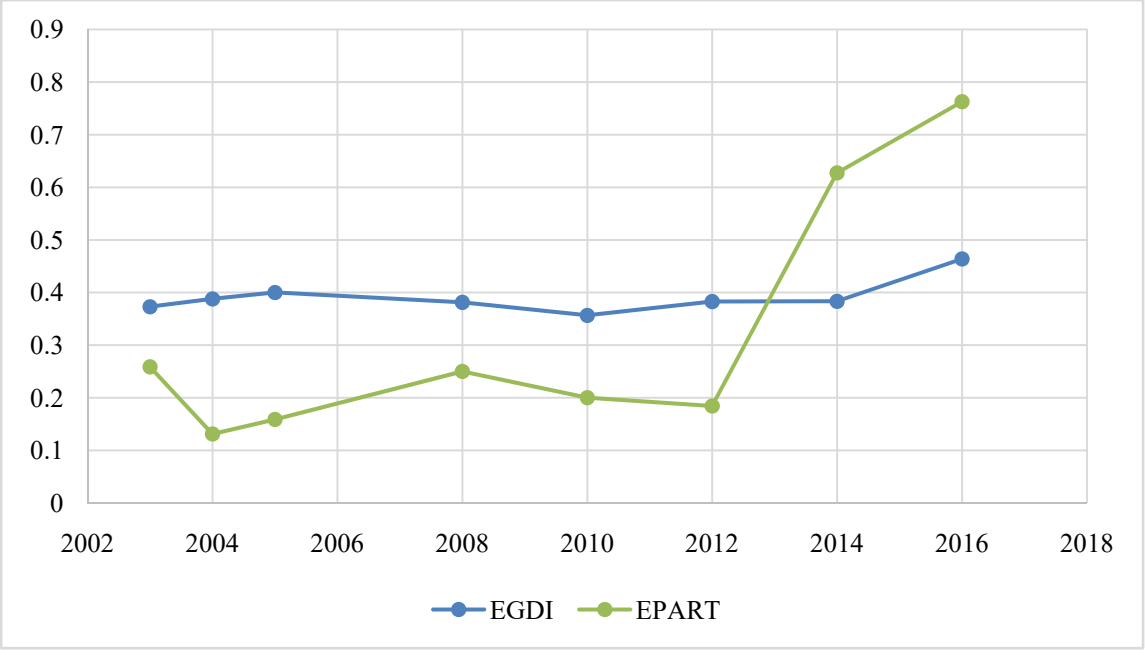
Diagram -1: Change in internet users and penetration rate



Source: Internet Live Stats retrieved from www.internetlivestat.com; International Telecommunication Union (ITU), World Bank; United Nations Population Division
** Estimated on July 1, 2016*

Note: This diagram is based on Table – 3

Diagram -2: EGDI and EPART index of India



Source: UN e-government knowledge database, Department of economic and social affairs, Division for public administration and development management, 2014, 2016
Note: This diagram is based on Table – 4

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