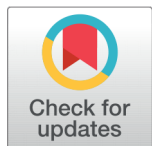


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## Websites and social media technologies as implements of E-Governance: A study of North East India

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## Abstract

**Background/Objectives:** To assess the nature and optimality of website and social media usage by state governments in Northeast India in pursuit of electronic governance. **Methods:** A case study research design has been adopted. Among the eight northeast Indian states, two states viz. Assam and Nagaland were selected. Data for the study was accumulated through the researcher's exchanges and interactivity with the selected state governments' websites and social media platforms over the month of February, 2020. The websites of Government of Assam(GoA) and Government of Nagaland(GoN) were assessed on the basis of the framework of Fan. A self-developed evaluation framework for evaluating the social media sites of GoA and GoN was used. To supplement the study, additionally, brief structured interviews were conducted with the official staff at the respective state secretariats. The respondents were selected using the snowball sampling technique. **Findings:** The findings clearly attest that e-governance in these North East Indian states has matured to the level of transactional stage or capacity in accordance with various models of e-government maturity (Gartner, UN model, Hiller and Belanger, West, Fan). The basic e-services were available on both websites, however, citizen-government interactivity and reciprocation have not reached an optimum level. Adoption of internet-based technologies involved opportunities as well as challenges. Opportunities included revolutionisation of information dissemination, increased efficiency in public service delivery, cost and time reduction in implementing administrative tasks etc. The various challenges involved were lack of training of staff in requisite ICT skills, problems in vertical integration of government entities due to lack of sound e-governance infrastructure at the lower levels of administration. **Novelty/Applications:** The findings of this study can serve as crucial input in understanding the gaps in government utilisation of the internet platform and technologies and also appreciate the accomplishments of the states in pursuit of e-governance in this region. Hopefully, this study will be successful in prompting more intensive research in this area with the larger aim towards achieving a holistic and effective framework of e-democracy in the region.

**Keywords:** Electronic governance (e-governance); electronic services (e-services); social media technologies; North East India

## 1 Introduction

In the recent decades, fast developing information and communication technologies (ICTs) have perfused into almost every facet of societal and national life. It is created, shared, and used in myriad ways that can generate both public and private value. One of the greatest boons perhaps, of this rapid evolution of ICTs is the rise of the idea and praxis of electronic governance (e-governance) in pursuit of achieving accountability, responsiveness and efficiency in public administration. The first ever official milestone in the development of e-governance in India, in a very nascent form, was the establishment of the Department of Electronics in the year 1970. The first real step however, was the formation of National Informatics Centre (NIC) in the year 1977 followed by the launch of National Informatics Centre Network (NICNET) in the year 1987 which was a national satellite based computer network. In the ensuing years, with ongoing computerization, tele-connectivity and internet connectivity, came a large number of e-governance initiatives, both at the Union and State levels<sup>(1)</sup>. A review of development of e-governance in the northeastern region of India shows that its development has been slow and largely unorganized<sup>(2)</sup>. The first step in this direction was the establishment of the state centre of NIC in Assam in the year 1986. Gradually, other north-eastern states followed suit. Presently, all the states in this region have a well functioning e-governance network modelled after the central e-governance strategy. The various implementing agencies of e-governance initiatives are the NIC (Assam, Manipur, Mizoram, Nagaland, Tripura), the Meghalaya Information Technology Society and the Department of Information Technology, Arunachal Pradesh.

## 2 Conceptual framework

### 2.1 Websites and social media technologies

In the past few years, e-government has been a topic of much interest among those excited about the advent of Web 2.0 technologies<sup>(3)</sup>. E-governance in this research article is interpreted as “the use of ICTs, and particularly the internet, as a tool to achieve better government”<sup>(4)</sup><sup>(3)</sup>. Two dominant implements in the praxis of e-governance in contemporary times are “websites” and “social media technologies”.

Rapid technological developments have induced governments at various levels, be it central, state/provincial or local, to develop and design websites for the purpose of public administration. Over time, websites and web portals have become the primary interfaces between government and citizens<sup>(5)</sup>. Websites are perceived as a “core strategic tool” and “a unique medium for communicating information and providing services”<sup>(6)</sup>. Kent et al. view websites as “channels for controlled information-sharing with stakeholders and media”<sup>(7)</sup><sup>(5)</sup>. On a similar note, Eschenfelder denotes “public websites as a means through which public administrations inform and educate the public, provide transparency and promote economic activities”<sup>(8)</sup><sup>(5)</sup>.

Social media technologies encompass social networking application like Google+, Facebook, Twitter, Youtube etc. Social media is considered to be a part of the Web 2.0 movement, which is characterized by user-generated content, online identity creation, and relational networking<sup>(9)</sup>. The Federal Web Managers Council denote social media technologies as an umbrella term that encompasses the various activities that integrate technology, social interaction, and content creation<sup>(10)</sup>. In view of the characteristics of social media technologies, it can be argued that these electronic social platforms hold immense potential for inducing electronic participation (e-participation) of citizens. Bertot et al. state that:

“Social media has four major potential strengths: collaboration, participation, empowerment, and time. Social media is collaborative and participatory by its very nature as it is defined by social interaction. It provides the ability for users to connect with each [other] and form communities to socialize, share information, or to achieve a common goal or interest. Social media can be empowering to its users as it gives them a platform to speak. It allows anyone with access to the Internet the ability to inexpensively publish or broadcast information, effectively democratizing media. In terms of time, social media technologies allow users to immediately publish information in near-real time”<sup>(11)</sup>.

### 2.2 E-government maturity

Attempts towards guiding and bench marking e-governance development has led to a burgeoning literature on e-governance maturity theories, frameworks and models. One of such generally accepted models is the “Gartner e-Governance Maturity Model”<sup>(12)</sup>. This model consists of four stages or phases. The first, being the information stage followed by the interaction and transaction stage and finally, the transformation stage. Information stage entails publication of governmental information on websites and other portals to be freely accessed by the public. In the second phase, a new kind of online public-government interaction is stimulated via various tools on websites. Citizens can download requisite forms and documents, use search engines for downloading information and communicate through e-mail. The bottom line is that more efficiency and effectiveness is achieved because a large part of the intake process is done online. However, you still have to go to the office to finalize the transaction, by paying a fee, handing over evidence or signing papers<sup>(1)</sup>. In the transaction stage, citizens can transact with the government online, for instance, pay for utilities, file income tax returns online without visiting the offices locally. The fourth phase of transformation, dubbed as integration, entails delivery of all services through a single point of contact or through a single window on the website. The United Nations classified the growth of online services of a government into four stages-a) emerging information services, (b) enhanced information services, (c) transactional services and (d) connected services<sup>(13)</sup><sup>(14)</sup>. At the stage of emerging information services, government through various portals and websites make freely available basic governmental information like policies, laws, statutes, service hours etc, enhanced information services involve greater dissemination of information to public via multimedia formats and downloadable files. The transactional services stage encompasses the gamut of online facilities for financial as well as non-financial transactions like registration and issuance of birth certificates, payment for utilities etc. Connected services involve a two-way communication

between the government and citizens in the administrative process and often make use of online surveys, one-to-one interviews (Q & A), and e-petitions<sup>(13) (14)</sup>.

Hiller and Belanger<sup>(15)</sup> developed a similar five staged e-governance maturity framework. The initial stage delineated by this model is “information” representing the availability of a basic institutional website that posts public information. The “information” stage is followed by the stage of “two-way communication” wherein conventional platforms like email systems can be used by citizens to communicate with the government. The third stage is one of “transaction” where citizens can effect online financial and non financial transactions over online web portals followed by the “integration” stage, where all electronic services(e-services) can be delivered through one single portal. The final stage of e-government maturity entailed by this model is “participation” characterised by facilities for posting comments, live interactions, online voting etc.<sup>(16)</sup>

West<sup>(17)</sup> designed an e-governance maturity model comprising of four stages. He designated the first stage as the billboard stage where government websites are used merely as electronic platforms for posting information for public reception and awareness. The second stage or the stage of “partial service delivery” entails the availability of limited online financial and non-financial services and transactions. The next stage is the “one stop shop” stage where all online services are connected and available through a unified portal. The final stage is the phase of the triumphant “interactive democracy”. The e-portal at this stage offers personalisation, push technology and feedback forms.<sup>(16)</sup>

Drawing the best features from the extant variety of e-governance maturity frameworks, Fan<sup>(18)</sup> has developed a five-staged e-governance sophistication model. Level 1 of the model entails the presence of one-way communication and information dissemination by the government through institutional websites. Level 2 indicates two-way communication through which citizens can make requests or contact the administration via available email-systems etc. Level 3 concerns with the transactional capacity of electronic governance. The fourth level denotes sophisticated websites and other electronic platforms that enable the users to participate in decision-making, submit inputs and comments along with facilities of online voting and opinion polls etc. The final level of e-governance maturity is visualised in the presence of a one stop portal which enable citizens to access all e-services through one single window effected by vertical and horizontal integration of government agencies.

### 3 Objectives and Methodology

The objective of this research paper is to assess the nature and optimality of website and social media usage by state governments in Northeast India in pursuit of electronic governance. A case study research design has been adopted. Among the eight northeast Indian states, two states viz. Assam and Nagaland were selected. The inclusion of these two states for the purpose of the study was grounded on two basic criteria. It is established that populations that are more youthful are deemed more receptive to e-government strategies<sup>(19) (20)</sup>. Assam comprises the highest youth population among the North East Indian states<sup>(21)</sup>. Further, efficient electronic public service delivery was another significant indicator of level of e-governance development. Nagaland scored the highest among all the northeastern states in the National e-Governance Service Delivery Assessment, 2019<sup>(22)</sup>.

Data for the study was accumulated through the researcher’s exchanges and interactivity with the selected state governments’ websites and social media platforms over the month of February, 2020 (vide: supplementary source). The websites of Government of Assam (GoA) and Government of Nagaland (GoN) were assessed on the basis of the framework of Fan<sup>(18)</sup> illustrated in Table 1 . A self-developed evaluation framework for evaluating the social media sites of GoA and GoN was used as illustrated in Table 2 .

To supplement the study, additionally, brief structured interviews were conducted with the official staff at the respective state secretariats. The respondents were selected using the snowball sampling technique. After the initial interviews with the officers at the IT cell and Public Relations officers, based on their suggestions, other officers relevant to the study were interviewed. A total of fifteen staff members of the respective state governments were interviewed. Interviews were recorded and transcribed. Data was analysed thematically to streamline it with the objective of the study.

### 4 Results and findings

**Table 1.** Evaluation Criteria for Websites

Website Evaluation Category	Variables
Privacy/Security	Privacy policy Security policy
Usability	Ease of use web page design Searching capabilities Multilingualism Disability access Links to external websites

*Continued on next page*

Table 1 continued

E-content	Contact details (e.g., office phone number, office address, email address) Online publications (e.g. policies, reports, plans, council meeting minutes, council forms) Directory of other government services Directory of local services Multimedia material (audio and video clips for relevant public information)
E-services (Non-financial transactions and financial transactions)	Online registration Online request for services Online application for permit Online library services E-tendering systems Online payment of rates and fees E-procurement
E-participation	FAQ Submit comments online to councilors Submit comments online to management Online consultation with councilors Online consultation with management Voting online
Feedback on website	Ability to report problems/deficiencies in the website Ability to request inclusion of facilities in the website

Source: Fan(2011)

#### 4.1 Assessment of websites

Information security and confidentiality form a crucial component of e-governance transactions. However, during the assessment period, it was found that GoN website's privacy statement was dated 2017. GoA on the other hand, had maintained an up to date copyright and security statement on their website. Web page design on both websites was simple and very convenient to use for an average user. A distinctive feature of the website of GoA was its animated content and vibrant use of multimedia supplemented by display of prominent government schemes and initiatives.

GoA website was found to be effectively linked to diverse portals like the central portal of India, Digital India, Swachh Bharat portal, Assam Police, Aadhar portal etc along with the links to various ministries within the state government. The website of GoN was, however, not as diversely linked as that of Assam government. No active links to social media accounts were visible on either websites.

With respect to the criterion of multilingualism, website content was solely in English with no option to switch to local languages. Furthermore, the websites were not disability-friendly. Contact details were sufficiently furnished by both websites. Online publications in the form of key government policies, reports, welfare schemes were made available abundantly on both the websites. Moreover, both websites had a notice bulletin updating the latest news, events and happenings of public importance. The use of multimedia for dissemination of public information was relatively more strong in GoA website. Electronic content on website of the GoN was majorly text-based.

Table 2. Yardsticks for assessment of social media utilisation

Social Media	Variables
Facebook	Time span of account's operation
	Contact information
	Number and nature of posts made
	Number of likes and followers
	Number and nature of comments by citizens
Twitter	Number of administrator's responses towards citizen's comments
	Time span of account's operation
	Contact information
	Frequency and quality of tweets
	Quantity of account following
	Number of retweets and comments by citizens
	Number of administrator's responses

**Table 3.** Findings of social media assessment

Social Media	Variables	GoA	GoN
Facebook	Time span of account's operation	5 years	3 months
	Contact information	Fully furnished	Inadequate (no phone number)
	Number of posts made	87	126
	Number of likes and followers	Likes 84,327, followers - 90817	Likes-5144, followers-5765
	Number of comments by citizens	610 comments	764 comments
	Number of administrators responses towards citizen's comments	12	39
Twitter	Time span of account's operation	3 years	3 years
	Contact information	Inadequate	Inadequate
	Frequency of tweets	5 to 7 posts per day, total -127	6 to 7 posts per day, total -162
	Quantity of account following	60.1 k	4.153 k
	Number of retweets and comments by citizens	Retweets- 1.84 k Comments-381	Retweets-563 Comments- 78
	Number of administrator's responses	2	0

Issuance of birth and death certificates, income certificates, domicile certificates, ration card etc, registration of cooperative societies, employment exchange, student scholarships and filing of RTI application were some of the common services available on both websites. It must be noted here that the magnitude of e-services provided by both governments was similar. The total number of e-services provided by GoA and GoN was 46 and 30 respectively. It must be added that the search design of e-services on GoA website was very ergonomic. E-services could be accessed service-wise as well as department wise. While E-tendering mechanisms and e-procurement systems were available on both websites, other facilities of financial transactions like payment for utilities were absent on both websites.

Concerning opportunities for citizen's participation, besides a grievance redressal portal and the ability to provide feedback on the efficiency of website, no other avenues for registering citizen's inputs and comments were available. There were no provisions for electronic forms or chat/ comment spaces to directly interact and relay messages between officials and citizens.

## 4.2 Assessment of social media platforms

Based on the variables illustrated in Table 2, the assessment results of utilization of social media technologies by the state governments are presented in a tabulated form in Table 3. Apart from the websites, both state governments maintained active social media accounts both on Facebook and Twitter. Table 3 clearly illustrates that the lifespan of the Facebook account of GoA at the time of study was much more than that of GoN. The GoA Facebook account was in operation for 3 long years (account created: 18 November 2015) while, GoN Facebook page was just created three months before the study period (account created: 18 November 2019). At the time of the study, GoA Facebook page registered around 84 k likes and 90 k followers while GoN facebook page gathered around 5k likes and followers. The degree of popularity of both the pages positively varied with the population of the respective states and the time span of the account's operation, the population of Assam being 3.12 Crores<sup>(23)</sup> which is much more than the population of Nagaland which is 19.79 Lakhs<sup>(23)</sup>. GoA Facebook page sufficiently provided contact details which included address, website, phone numbers but Facebook page of GoN did not provide the contact information adequately. There was no specification about address or contact number. Both pages did however have their own mission statements proclaiming that the objective of social media engagement was to secure "participatory governance and take democracy to the next level in their states". The Twitter account of both the state governments was created on November 2016. Within these three years of operation, the Twitter account of GoA garnered 60.1k followers while GoN's Twitter account gathered 4.153k followers. Contact information was not adequately provided by either of the two Twitter accounts.

During the investigation period, GoA published 87 posts and 127 posts on its Facebook page and Twitter account respectively. GoN posted 126 and 162 online publications on its Facebook and Twitter accounts respectively. The nature of the online publications of GoA and GoN on the social media platforms can be distinguished into the following categories: promotion of various schemes, policies and developmental activities of the state government; posts aimed at promoting public awareness and mitigation of pressing social issues; posts showcasing cultural, architectural and ethnic, literary heritage of the state including posts about eminent personalities who have contributed to enhancing the state's stature or brought honour to the state, nationally and internationally or any piece of information or event that is immensely crucial to state prestige.

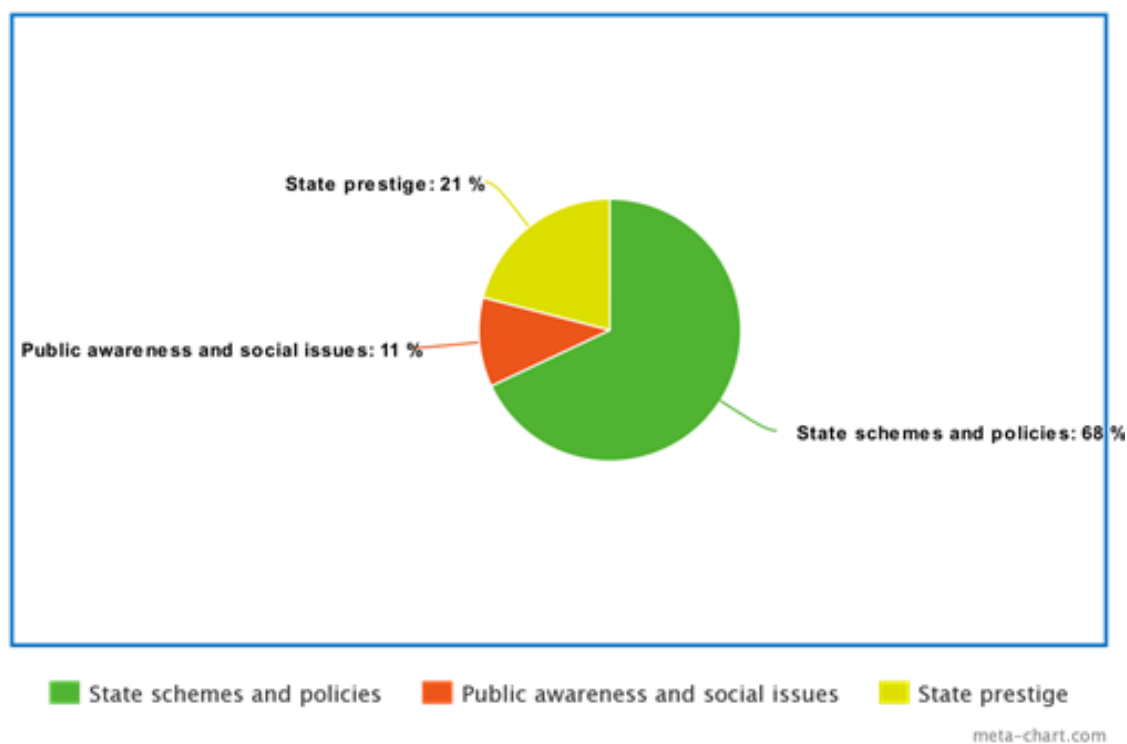


Fig 1. Nature of online publication of Government of Assam (GoA) Facebook and Twitter page

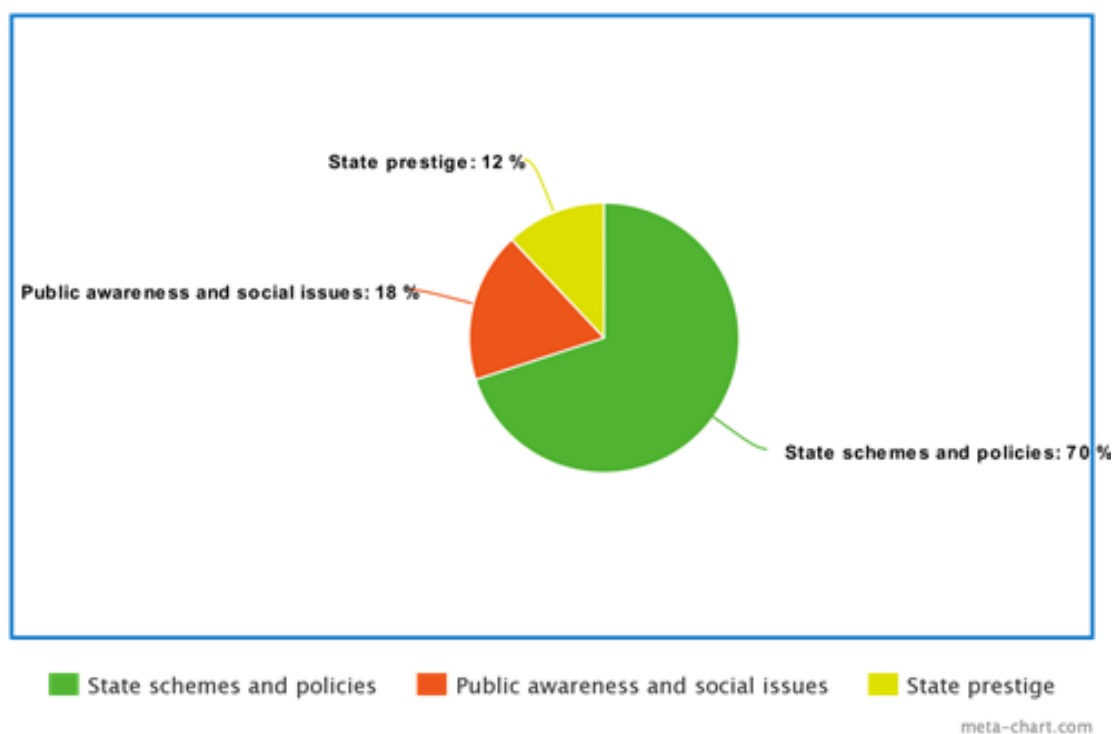


Fig 2. Nature of online publication of Government of Nagaland (GoN) Facebook and Twitter page



From Figures 1 and 2, it is clearly discernible that utilisation of social media has been majorly towards promotion and popularisation of schemes and policies of the ruling government. It has been observed that the developmental efforts and initiatives taken up by the state government have been thoroughly publicised through Facebook and Twitter platforms. Throughout the period of the researcher's interactions with the social media portals, it was found that the GoA and GoN endeavoured to create public awareness regarding various issues endemic to states. For instance, there were several posts concerning the crime of witch-hunting in Assam and legislations that punish it, environmental issues like degradation of Deeporbeel (a Ramsar site designated in 2002) and steps towards its preservation, benefits of yoga on health, the issues of drug abuse and alcoholism among Naga Youth supplemented by information of helpline numbers and agencies. Celebration of events and personalities bringing honour to the state also comprised an important section of online publication on the social media pages of both states. There were various posts commemorating eminent personalities like Bhupen Hazarika, Talimeren Ao etc.

User engagement on the social media forums was not entirely discouraging. Within the duration of study, online publications by GoA on Facebook and Twitter cumulatively garnered 991 comments (610 on Facebook and 381 on Twitter) and 1.84k retweets; GoN posts were responded with 842 comments (764 on Facebook and 78 on Twitter) and 563 retweets. The characteristics of the users' comments can be grouped into three types, firstly, a sizeable section of the comments were follow up queries, opinions and feedback, many comments were informed of an appreciative note towards the governments developmental efforts and policies and lastly, a section of the comments were also in the form of public criticism. However, it was noted that the follow up queries of the users were largely ignored and unanswered.

**Table 4.** Users' queries and administrator's response on social media sites

State	Number of comments in the form of follow up queries	Number of queries answered by the administrator and percentage share
Assam	300	14 4%
Nagaland	183	39 21%

The data from Table 4 confirms that public-government interaction on social media platforms has been largely one-sided. Public enquiries on posts remained mostly, unreciprocated. A meager 21% of follow up queries on GoN social media sites has received replies by the administrator. The record of GoA social media was worse with only 4% of queries receiving administrator's response.

It can be inferred that both GoA and GoN have been fairly active on social media, with reference to the frequency online publications as well as the amount of likes and following garnered. Evidently, Facebook, as a social media tool was pressed into service by both GoA and GoN to a greater degree as compared to Twitter. Nevertheless, it would be injudicious to posit that the state governments have made optimum use of social media platforms for the cited mission of achieving participatory governance especially, in view of the fact that the study found a great deal of negligence towards citizens' queries, opinions and feedback.

### 4.3 Challenges and opportunities

The interviews conducted with the various staff members revealed the various opportunities associated with utilisation of websites and social media networking in pursuit of e-governance. One of the foremost opportunities of internet technologies was believed to be the acceleration of information dissemination and public communication. Commenting on the advantage of e-government strategies in information sharing, a public official in Assam Secretariat stated,

"At the click of a key, crucial information can reach a wide spectrum of audience and stakeholders. Details of government schemes and policies are readily available online and even shared on our Facebook page. This pace of information dissemination was earlier impossible through the use of traditional means of mass media." (translated from local language)

It was believed that the switch to e-government platforms was enabling a shift from government-centric to citizen-centric administration. An official conveyed,

"With a large spectrum of e-services available online, ordinary citizens do not need to venture from one public office to another for simple tasks like registration of birth, ration card etc. It has saved the energy, time and money of the common man."

It was also opined that electronic services have relaxed the burden and cost of paperwork in government-citizen transaction and further, reduced lags in public service delivery.

Various insights on the challenges associated with adoption of internet-based technologies in pursuit of e-governance were also revealed through the interview. The first challenge unanimously agreed upon by public officials was the uneven and deficient levels of ICT skills among staff. An official in this regard, expressed that besides the staff of the IT cell and those associated with online information management, other officials were not well-versed with ICT use. Therefore, there was a strong demand felt for training programmes, acquainting them with ICT skills to use internet technologies even more effectively for public governance as well as internal administrative management. While the state secretariat was equipped with a sound ICT infrastructure, concerns were raised regarding the vitality of ICT infrastructure at different levels of governance. An official stated, "Various other administrative agencies and offices under the state government lack the requisite ICT foundation to employ internet-based technologies for efficient governance. Most of the local government agencies do not effectively maintain the websites or even have a social media account." Therefore, permeation of the practice of using websites and social media technologies along all levels of state government was a potent challenge.

## 5 Discussion

The findings of this study indicate that GoA and GoN's adoption of website and social media technologies has assisted the state governments in achieving a modest level of maturity in e-governance development. The findings clearly attest that e-governance in these North East Indian states has matured to the level of "transaction stage" with respect to the Gartner model and "transactional services" stage with respect to the UN model, as these websites provide a wide variety of e-services that can be availed by citizens online in an effective manner. In fact, the study also found that both websites also provide a single window for availing the e-services. In spite of that e-governance performance fell short of reaching up to the "transformation stage" (Gartner model) or "connected services" stage (UN model) as the single point of contact for e-service delivery did not encompass a wide variety of services and excluded basic services like filing of income tax returns or payment for utilities. These e-services could be availed online but on separate websites. Therefore, single window e-service delivery provided in these websites were at best, half spirited with limited transactional facility over 30 to 40 basic services. Similarly, testing the findings against the Hiller and Belanger model, reveals that e-governance sophistication in Assam and Nagaland stopped short of reaching the fourth stage of "integration" and the fifth stage of "participation". A comparison of the study findings against the West Model of E-governance maturity produces similar conclusions. The GoN and GoA e-governance levels were found to match up to the "partial service delivery" stage. The application of Fan's multidimensional schema for measuring e-governance sophistication correspondingly, points out that the cases studied have achieved the "transactional capacity" phase or Level 3 out of the five levels of e-governance maturity. The cases under study have a long way to go for achieving the "participation" stage with respect to Hiller and Belanger model and "interactive democracy" stage with respect to West's model as it was observed that opportunities for citizen's direct participation on websites were limited. There were no provisions for electronic forms or chat/ comment spaces to directly interact and relay messages between officials and citizens, let alone facilities for online voting. Similarly, in the social media space, although citizen engagement was encouraging, response and reciprocation towards citizen queries, opinions and feedback was found to be extremely incommensurate and negligent. A comparison of the findings relating to social media engagement in North East Indian governments against the pan Indian scenario reveals interesting results. In a similar study, Verma et al. found that the state departments of the five states of Uttar Pradesh, Bihar, Andhra Pradesh, Maharashtra and West Bengal had limited social media presence and low levels of e-participation. These five states represent 556.2 million people (Census 2011) and the state governments' presence on social media is not very encouraging<sup>(24)</sup>.

A critical observation made through the analysis of the findings is that despite the inherent interactivity potential of social media platforms, administrators were seen leaning more towards promoting governmental schemes and lauding the activities and initiatives of the ruling government rather than engaging into government-citizen conversations. Such trends insinuate the ruling party's ulterior intention to appease public by highlighting achievements rather than capitalising on the dialogic potential of social media technologies. A similar observation in this direction was made by Walter and Williams<sup>(25)</sup>.

The study also revealed various challenges and opportunities associated with e-government adoption in these states. Opportunities included revolution of information dissemination, increased efficiency in public service delivery, cost and time reduction in implementing administrative tasks etc. The various challenges involved were lack of training of staff in requisite ICT skills, problems in vertical integration of government entities due to lack of sound e-governance infrastructure at the lower levels of administration. Such challenges resonate with the common concerns faced by developing countries in the materialization of the e-governance dream. A review of existing literature reveals various factors impeding the digital revolution in governance in these countries. Digital divide is perhaps the most common impediment to e-governance shared by developing countries, India, being a glaring example. Inadequate network capacity and poor IT infrastructure as revealed in the findings account for another bottleneck in the journey of digitalization of governance. Other challenges involved are inadequate policy structures, investment, lack of IT skills in governmental staff, technologically dwarfed citizens, lack of education, poverty and consequentially, lack of affordability of digital gadgets and services etc<sup>(26)</sup>.

Nevertheless, the study has clearly shown that the state governments were putting in considerable efforts towards availing the citizens basic services online, widening the access of information about crucial services, policies and activities of the government towards a larger audience through the medium of websites as well as social media forums. The high frequency of online publications on the social media accounts is also a veritable sign of government's desire to reach out to the public. Such steps clearly outline that North East Indian administration is traversing a path from government centric to citizen-centric administration. Another observable trend is the slow but steady move towards collaborative transparency in public governance. E-governance initiatives based on internet technologies as evident in the case study reveals a promising trend towards promoting transparency in administration and reduction of corruption. To give a simple example that is reflective of this trend, e-services available on websites ensure that there is limited physical contact interaction between officials and citizens, this, in turn, diminishes the proclivity towards corruption, especially, corrupt practices like demand of bribes or speed money by officials to pass on documents and applications onwards for administrative processing, which are rampant in lower levels of bureaucracy in developing nations.

## 6 Conclusion

The adoption of internet based technologies in pursuit of electronic governance in the states of Assam and Nagaland exhibits modest levels of success. In the arena of electronic public service delivery, these states have been successful in providing numerous basic services to citizens online. The nature and rapidity of online publications of policy and scheme related information over social media as well as websites indicate a trend towards widening public access to information as well as promotion of transparency in governance which in turn, is an incentive for reduction of corruption. Although, the e-governance journey in the northeastern Indian states has not yet reached the optimal point of a full-fledged interactive electronic democracy (e-democracy) given that, governments have largely failed to tap on the dialogic potential of



social media for improving government-citizen interactivity, yet the journey has itself been an energetic and promising one. Furthermore, a background literature survey conducted for this study clearly revealed the near absence of research on e-governance maturity in this region. Therefore, the findings of this study can serve as crucial input in understanding the gaps in government utilisation of internet platform and technologies and also appreciate the accomplishments of the states in pursuit of e-governance in this region. Hopefully, this study will be successful in prompting more intensive research in this area with the larger aim towards achieving a holistic and effective framework of e-democracy in the region.

## Limitation of the study

The study attempts to assess the maturity of e-governance of selected state governments in North East India and to this end, employs various testable e-governance maturity models and frameworks. In this context, it must be admitted that the e-governance maturity models undertaken in this study are not free from various criticisms with respect to its usability, adoptability in developing societies, linearity of e-governance assimilation etc. This can be considered as the theoretical limitation of the study. Moreover, governance essentially is a two way process. This study however, for the most part, focused on only one side of the transaction on the basis of number of e-services provided, social media presence of state governments etc but whether these services or channels have been optimally utilised by the citizenry remains a lacuna in the study.

## Acknowledgement

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### Supplementary source

#### Websites consulted for the case study

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<https://twitter.com/MyGovNagaland> - Government of Nagaland's Twitter Page  
<https://assam.gov.in/> - Government of Assam website  
<https://www.nagaland.gov.in/> - Government of Nagaland website

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