Issues, challenges, and ways ahead to develop citizen-centric e-Governance in Nepal

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Abstract

E-Governance is a mechanism to provide services to the citizens through online platform utilizing the tools of Information and Communication Technology (ICT) to ease the service delivery process. It is a technological intervention to enhance the existing working process of the organizations. The traditional working process demands a lot of time and human contacts. In addition, the service seekers need to present some vital documents like citizenship certificate and other relevant documents to receive the services. The E-government systems are online systems that citizens can access from anywhere at their convenience to request for the service. The online systems have to be citizen-centric so that they are attracted to use the systems for requesting government services. In Nepal, citizen-centric e-Governance is still at question due to the traditional governance system, lack of awareness and motivation in political leadership, lack of citizen involvement, dearth of adequate research on technology adoption, existing digital divide, difficulties in change management, insufficient ICT infrastructure, lack of integration in online services, and lack of strategic plan for the IT human resources. Exploring various literatures, lessons learned from previous experiences and existing situation of the government implanting whole-of-a-nation thought in the mind-set of leadership can help minimize these issues and move towards citizen-centric approach in e-Governance design, development and implementation.

Keywords: E-Governance, citizen-centric, integrated services, technology adaptation, business process reengineering

Introduction

The use of Information and Communication Technology (ICT) for public service delivery has become mandatory for reducing the role of bureaucracy in government organizations, as the field of ICT has been profoundly developed and simplified (Cordella & Tempini, 2015; Prakash, 2016). The use of ICT in facilitating government service delivery has given rise to e-Government systems, through which the citizens get services from the government through online digital platforms (Bhattacharya, 2011; Padmapriya, 2013; Qian, 2011). Citizens can access the e-Government systems 24 hours and 7 days a week where the citizens can fill up the required forms for services that they need at their convenience (Gupta et al., 2018). These systems redefine the new operation mechanism of the government system. Governance and public administration of a country support the sustainable socio-economic development of a country (Cordella & Tempini, 2015). The government of Nepal (GoN) envisioned the concept of e-Governance and formulated IT Policy in 2000 A.D. to take forward the vision (Kharel & Shakya, 2012; Pariyar, 2007). Many public organizations have digitized their operational processes to provide services through online platforms. The GoN released Digital Nepal Framework (DNF) in 2019 as a strategy document to move ahead in the path of digital transformation in Nepal to establish "Prosperous Nepal and Happy Nepali" and the document presents a strong urge of the GoN to all sectors to move towards E-Governance. Yet, the government is facing challenges like insufficient infrastructure development, lack of human resource development and management, digital divide, lack of funding and awareness, information insecurity and data protection problem in e-Governance implementation (Dhami & Futó, 2010; Giri et al., 2018). Despite the technological readiness and availability of the private sector competencies, the lack of vision in leadership in the government has forced to depend on the development agencies and has not been able to derive benefits from the opportunities provided (Buddhacarya et al., 2019; Shakya, 2018).

Nepal has been facing a lot of challenges in economic and social development, and the implementation of ICT can play a crucial role in developing a good governance system (Basyal et al., 2018). The government aims to provide the public services in an easier way, but in Nepal the service is supply-driven which has not been able to bring remarkable changes in the domain of public service delivery (Bhattarai, 2017). The paper-based traditional working mechanism and the structure of government are responsible for the existing situation of service delivery in Nepal (Giri et al., 2018). The effectiveness of public service delivery depends on the capability, resources, and motivation of the government in providing the service (World Bank, 2018). In Nepal, the public service delivery happens through the combined effort of line agencies, and local bodies at the district, municipal, and village level (Kharel, 2018). Therefore, the e-Governance system should be able to connect the government at every level minimizing the physical contact of the citizens with the government organizations or employees. The concept of citizen centricity is turning the focus of government to the public service delivery through the eyes of citizens rather than the operational imperatives of the government. It is a strategic approach in E-Governance that encompasses policies and processes designed to attract, acquire, serve, and retain citizens (Gupta, 2007). E-Government systems will support the effort of the government in service delivery by putting people first only if the ICT is supported by the underlying business process, and all the e-Government services should be integrated into it to be truly effective in public service delivery (King & Cotterill, 2007; Visser & Twinomurinzi, 2008).

Government should not only invest in the development of e-Government systems but should also create awareness in the public and government agencies about the e-Government services and employ skilled human resources and computers experts for the sustainability and growth of the system (Aa et al., 2015; Basyal et al., 2018; Kharel & Shakya, 2012; Shrestha et al., 2015). In the early stages of e-Government system development, there is a lack of interoperability between the systems, mainly due to the lack of coordination among the necessary stakeholders (Buddhacarya et al., 2019; Pokharel & Park, 2009; Shakya, 2018). The lack of integration into the developed systems puts a doubt whether the citizens will be ready to use the systems and benefit from it (Zhao et al, 2012). The challenges in implementing e-Governance like lack of infrastructure, digital divide and lack of leadership readiness depict that there are still challenges in developing citizen-centric e-Governance systems.

Citizen-centric approach

The citizen centric approach demands all the e-Government systems at all levels to deliver the services as per the demand of the user. Citizen-centric approach not only enhances the efficiency of public service delivery but also enhances citizen satisfaction, and improves the quality of life (Heeks, 2008). According to Gupta (2007) and Thapliyal (2008), the citizen-centric approach needs to consider accessibility, motivation and confidence to use by citizens. Accessibility is about the easiness and affordability of using the system but it requires ICT infrastructures in place, awareness on using the system, and affordable costs of the services. Motivation to citizens includes value addition on services and single window to access large number of services. Confidence in the citizens to use the system includes awareness, skills, trust, and the security related issues to use the e-Governance systems. Figure 1 shows the citizen-centric approach put forward by Gupta (2007) in developing e-Government systems. Citizen centricity is turning the focus of the government towards public service delivery through the eyes of citizens rather than the operational imperatives of the government (Gupta, 2007). E-Government systems have to encompass citizen-centric policies and processes designed to attract, acquire, serve, and retain citizens for them. E-Government system ensures accountability of collaboration and transactions among departments and stakeholders, thus improving the decision making process where perceived governance quality, perceived information quality, and perceived service quality ensure citizens' satisfaction towards these services (Singh & Singh, 2018). The citizens have to be involved as co-creators and co-owners of the public services rather than as recipients only to make the electronic services citizen-centric and demand driven (Qian, 2011). There is a gap in 'Design-Reality' between e-Government policy planners and citizens' aspirations, which is a concern to be careful of while developing citizen-centric e-Government systems as citizens are the primary stakeholders of the systems (Gupta, 2007; Kyakulumbye et al., 2019; Qian, 2011; Singh & Singh, 2018).

The development and use of e-Government systems in public organizations are increasing in Nepal. The main target of implementing such systems is to enhance the public service delivery. The successful implementation of the e-Government systems leads towards a transformed government, which is dependent on the existing governance system, use of ICT, business process reengineering and electronic citizens. The technology intervention needs to be citizen-centric to capture the citizens' attention through the online platforms for public service delivery. Nepal has been investing in the field of e-Government for the past two decades, but still there is a lot to do.

Figure 1 Citizen-centric approach
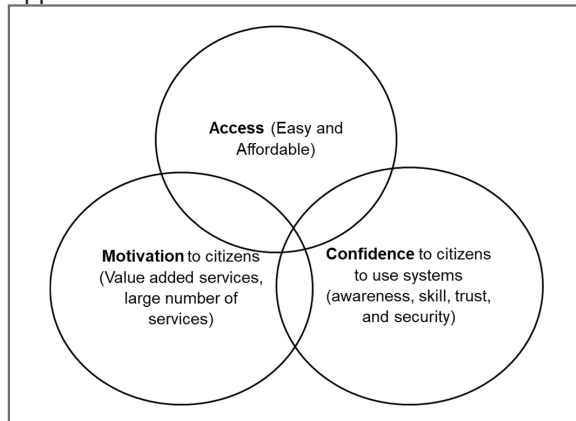
(Source: Gupta, 2007)

What remains to be done is to lay a stepping-stone to bridge the gap between the citizens and the government, so that the investment will give a better result. It is necessary to identify the issues and challenges in e-Government system implementation. The challenges and the way ahead actions are necessary in developing and implementing citizen-centric e-Governance systems in Nepal for the growth and better performance of public service delivery and establishing a transformed government system. The traditional government system requires certain cost, time and human resources to provide services to the citizens. Yet the transparency and accountability issues of the government are always in question. The citizens are the receivers of the government public services, who are also the taxpayers and they expect a good quality of life in return to the tax they are paying. To enhance the efficiency and effectiveness of the services, the government of Nepal introduced technological interventions through the e-Government systems, which need to be citizen-centric to transform the traditional government systems so that citizens will be satisfied in getting services from the government faster and at lower cost.

Figure 2 The need of citizen-centric approach
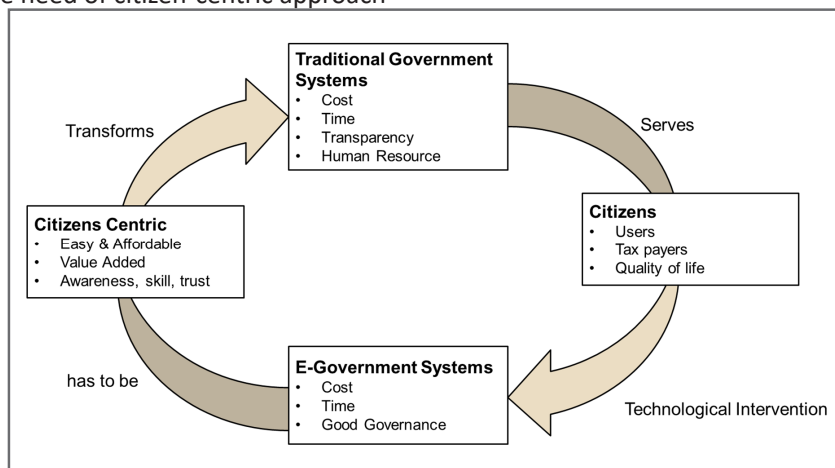
Literature review

Status of government of Nepal in implementing e-Government

The GoN started ICT development initiatives in the year 2000 A.D. with the announcement of "IT Policy 2000 A.D.". In 2002, the GoN established National Information Technology Centre (NITC) under the Ministry of Science and Technology (MoST). The main objective of establishing NITC was to build knowledge-based society by supporting knowledge based institutions and industries as well as promote and develop ICT by making it accessible to the public. In 2003, the GoN established High Level Commission of Information Technology (HLCIT) under the chair of the Prime Minister to provide crucial strategic direction, help formulate appropriate policy response for the development of ICT sector, and promote facility to automate government activities and services. Considering the continuous socio-economic changes and a new vision in ICT sector, the commission produced a revised version of the policy as "IT Policy 2004". The GoN, with the support of Korean IT Industry Promotion, prepared an e-Government Master Plan (eGMP) in November 2006. The master plan established the vision, strategy, and framework for Nepal's e-Governance, suggested some major e-Governance projects to be implemented and a road-map of e-Governance, and also defined a clear direction for executing organizations and restructuring legal framework. Asian Development Bank (ADB) provided the GoN with 'Project Preparatory Technical Assistance (PPTA)' to establish the foundation for the investment phase of the plan. The PPTA identified 23 program components, defined responsible executing/implementing agencies, assessed the risks involved, allotted priorities, and categorised the application types. As per the original plan of the GoN, the eGMP was supposed to come into implementation by 2011 materializing the proposed systems. However, the government could not implement the eGMP due to some constraints including lack of required IT infrastructure, human resources, and policy and legal aspects.

A draft 'National IT Roadmap' was presented in 2014 that stated the need for a review of the existing eGMP and transforming all the government services into e-services preparing a strategic plan in coordination with all the concerned ministries within 5 years. The eGMP 2015-2019, developed after the review of the eGMP 2007 and other related policies and regulations like IT Policy, Electronic Transaction Act (ETA), and National IT Roadmap, prioritized four streams e-Agriculture, e-Education, e-Health, and e-Tourism. The review team suggested that each government agency should have qualified IT officers and a technical team in place to support IT requirements. The vision of the updated eGMP has been built on the foundation of ICT infrastructures and legal provisions related to ICT and supported by the four pillars viz. sustainability, capacity building, service delivery and implementation leading to effective governance.

Digital Nepal framework 2019

The increment in the internet and mobile penetration rate is an advantage for Nepal to leverage the growth of digital technologies to drive accelerated growth. The GoN released Digital Nepal Framework (DNF) in 2019 to utilize the opportunity developed with the increase in the internet services and mobile penetration rate. The framework provides a roadmap on how the digital initiatives can contribute to the economic growth, and to find out innovative ways in a shorter period with limited resources to solve major challenges that our society is facing, and to identify opportunities for Nepal to participate in global economy. Nepal aims to achieve the status of a

middle-level income country by 2030, and the framework follows the vision "Prosperous Nepal, Happy Nepali" (MoCIT, 2019).

The framework emphasizes on 8 sectors and 80 digital initiatives that will support in the socio economic growth of Nepal. The eight sectors identified in the framework are digital foundation, agriculture, health, education, energy, tourism, finance, and urban structure. The framework contributes to achieving Sustainable Development Goals (SDGs) besides supporting the government's aim of good-governance. National ICT policy introduced in 2015 aims to achieve the vision of transforming Nepali society into knowledge and information based society by harnessing the rapid advancements made in the ICT sector. The National Broadband Policy announced in 2016 put forward a framework for stimulating broadband access and availability across the country. In addition, the policy emphasizes on effectively leveraging universal service access funds as a means of digital divide. This will provide a strong mechanism for expanding broadband access to communities beyond urban areas with effective implementation. The government has also developed the Government Enterprise Architecture (GEA) and Nepal e-Governance Interoperability Framework (NeGIF), which are the foundational initiatives for enabling the rollout of citizen-centric digital services and the systems that are inter-operable and provide a framework for a seamless integration.

Literacy rate

Nepal has made a remarkable progress in improving its education system and increasing in its net primary school enrolment rates from 65.9 to 96.3 percent from 1999–2019 (World Bank, 2019). Through the government's efforts by implementing the programs like School Sector Development Program (SSDP) and ICT implementation through Open Learning Exchange (OLE), Nepal has mitigated the gender and age gaps in education. The adult literacy rate of Nepal is 59.6 percent, which is still the lowest rank among the key South Asian countries (MoCIT, 2019). The majority of the youth still struggles to gain access to education at the secondary and tertiary level. To overcome this challenge, the government needs to devise better incentives and monitoring mechanism for its various programs.

E-Government challenges in developing countries

The vision of e-Government in Nepal is to achieve the following:

- Citizen centred service
- Transparent service
- Network government
- Knowledge based government

E-Government mission statement of Nepal is "Improve the quality of people's life without any discrimination, transcending regional and racial differences, and realize socio-economic development by building a transparent government and providing value added quality services through ICT."

In order to realize the vision and mission of e-Government in Nepal, the consulting team worked out strategies and selected 33 projects in the sectors comprising G2G, G2B, G2C and infrastructure. These projects were vital for the establishment of e-Governance systems in

Nepal but the limitations of time, budget, human resource and capability of implementing such projects were the hindrances in the project implementation. Therefore, the GoN prioritized the projects considering the availability of technologies, institutional readiness, emergency handling capacity as well as environmental impact. The GoN selected eight priority projects, which were government groupware systems, government portal, national identification number, online education, communication infrastructure, enterprise architecture, PKI, and data centre. Despite the advantages on implementing the e-Government systems, some researches shed light on the challenges that developing countries are facing in implanting E-Government systems. The challenges in the e-government system implementation revealed by various studies and researches conducted in different countries are listed in Table 1.

Table 1: Identified challenges

S.N	Challenges identified	Country	Research
1	Participation of stakeholders Stakeholder's need assessment Understanding the role of government	Various developing countries	(Akther et al., 2007)
2	Traditional mind set Proactive governance system Understanding the needs of citizens Integrated service delivery system Service excellence Enabling environment Timeline	India	(Thapliyal, 2008)
3	Requirement of change management Loyalty and commitments Awareness of civil servants Age group of civil servants Necessary infrastructure	Indonesia	(Furuholt & Wahid, 2008)
4	Social level Digital divide IT awareness Strategies and policies Laws and legislations Funding and business models Infrastructure Skilled human resource Bureaucracy	Libya	(Verma, 2012)
5	Political leadership Bureaucratic inertia Digital divide	India	(Padmapriya, 2013)

S.N	Challenges identified	Country	Research
6	ICT infrastructure High speed and cost effective connectivity Commitment and financial system Government process Leadership Clear roadmap Qualified human resources	Nepal	(Sharma et al., 2014)
7	Political Social Technology Economic	Nepal	(Shrestha et al., 2015)
8	Marketing and communication Lack of awareness Website design and information quality Computer self-efficacy Behaviour Intention Trustworthiness Lack of proper intention of government	Mauritius	(Lallmahomed et al., 2017)
9	System maturity Business process re-engineering Lack of integration System scalability Trust and awareness Quality of data and portal	Nepal	(Joshi & Islam, 2018)
10	Interest of powerful stakeholders Degree of publicness Coordination between various agencies	Various developing countries	(Pedersen, 2018)
11	Lack of change management strategy Limited cooperation among organizations Language and literacy barriers for citizens Incomplete automation process Difficulties in system integration Lack of intermediary management system	Rwanda	(Mukamurenzi et al., 2019)
12	Red tape/corruption and size of bureaucracy Politics of information Role of leadership Political desire, vision, change management Stakeholder involvement Continuous evaluation Citizen characteristics Service quality of systems	India	(Samuel et al., 2020)

Technology acceptance

The acceptance of technology is one of the crucial factors while designing technological solutions. E-Government is not just the implementation of technology in government process, it is also a process of pulling the government into the technological platform for effective and efficient service delivery through ICT. Various technological models exist to examine the acceptance of such systems. The factors influencing the acceptance of the system vary according to the contexts of different countries as revealed by a number of researchers which are listed in Table 2.

Table 2 Factors influencing the acceptance of online system

Model	Authors	Country of use	Results/Highlights
Modified unified model of e-Governance acceptance (UMEGA)	(Rai et al., 2020)	Nepal	Factors considered from UMEGA such as performance expectancy, effort expectancy, facilitating conditions and attitude have a significant influence on the behavioural intention to use the E-government system in the GoN. The added identified factors such as commitment from leadership, awareness among leadership and transparency have a significant influence on the behavioural intention of the users to accept the system.
UTAUT	(Maharjan, 2018)	Nepal	Effort expectancy, social influence, trust, website quality, facilitating condition, behaviour intension and use behaviour are reliable constructs.
UMEGA	(Verkijika & Wet, 2018)	Sub-Saharan Africa	Performance expectancy, social influence, perceived risk and computer self-efficacy significantly influenced attitudes, whereas attitudes, facilitating conditions, the trust of government and trust of the internet had a significant direct influence on behavioural intention.
Decomposed theory of planned behaviour (DTPB)	(Susanto et al., 2017)	Indonesia	Trust, perceived behavioural control and attitudes successfully explained the intention to use an e-Government service by the citizens

Model	Authors	Country of use	Results/Highlights
Extended UTAT (UTAT2)	(Lallmahomed et al., 2017)	Mauritius	Performance expectancy, facilitating conditions and perceived value positively influence behavioural intention. Computer self-efficacy has a significant negative relationship with behavioural intention and resistance to change. Trustworthiness also inversely affects resistance to change.
UTAT	(Rabaa'i, 2017)	Jordan	Performance expectancy, effort expectancy, social influence, facilitating conditions and behavioural intention have a significant effect on the adoption of e-government services
Social Cognitive Theory (SCT)	(Rana & Dwivedi, 2015)	India	Factors such as self-efficacy, outcome expectations, social influence, effect and anxiety toward behavioural intention to use the online e-government system influence the acceptance of e-government services.

Electronic governance development index (EGDI) ranking of Nepal

EDGI comparison of SAARC countries released by United Nations (UN) in 2018/20 showed that Nepal had come down to 132 position from 117 in 2020. The improvement of Nepal is not significant compared to other SAARC countries except Pakistan. There is a need to improve EDGI constituent factors such as online service component, telecom infrastructure component, and human capital component to improve the country's position, according to the UN report, 2022.

Study methods

It is a qualitative research based on secondary data collected through previously published research reports, historical records, and observation and report of existing web-services. Semi-structured interviews with 33 different participants representing both the government employees and citizens also helped to consolidate the findings. The methods have been adopted to confirm whether the issues and challenges identified for other developing countries are applicable in the context of Nepal or not.

Findings

There is no possibility of e-Governance without the presence of good governance, better ICT infrastructures and systems and critical examination of existing administrative procedures followed by necessary reforms which are regarded as the business process reengineering, and electronic citizens who communicate and seek public service delivery through online system from the state. The findings from the summary of previous researches and interviews are in the following section.

Issues and challenges

The issues and challenges, identified and listed in Table 1 after reviewing the existing literatures on challenges on the e-Government development and implementation in the developing countries, are relevant in the context of Nepal as well.

- The challenges like lack of pro-activeness, relying on traditional service delivery method, not considering the business process re-engineering and citizen requirement affect the governance system (Akther et al., 2007; Padmapriya, 2013; Samuel et al., 20202.
- Increasing performance expectancy, decreasing effort expectancy, lack of trust, lack of supportive and facilitating condition, privacy and security, and attitude after the use of technology, are the key challenges that are concerned with the adaptation of technology in the existing work process. (Rai et al., 2020; Maharjan, 2018; Mukamurenzi et al., 2019; Verma, 2012)to enhance the communication for coordination among government agencies. Design/methodology/approach: After reviewing the Unified Model for E-Government Acceptance (UMEGA).
- The attitude of the service providers and receivers, traditional mind set, existing literacy situation, and resistance to change are the issues of change in behaviour (Furuholt & Wahid, 2008; Rai et al., 2020; Maharjan, 2018; Mukamurenzi et al., 2019; Verma, 2012) to enhance the communication for coordination among government agencies. Design/ methodology/approach: After reviewing the Unified Model for E-Government Acceptance (UMEGA).
- The lack of system standards, interoperability framework, data centres, integration of information from all points of citizen interactions, and data sharing are some bigger challenges in the establishment of integrated service delivery through e-government system. (Maharjan, 2018; Mukamurenzi et al., 2019; Verma, 2012; Thapliyal, 2008).
- Citizens are the users of the systems but there are challenges like understanding their needs, getting their feedback, and more focus placed on technology rather than people (Padmapriya, 2013; Samuel et al., 2020
- Enabling environment is also another issue with challenges like capacity building and infrastructure establishment (Furuholt & Wahid, 2008; Rai et al., 2020; Maharjan, 2018; Mukamurenzi et al., 2019; Verma, 2012)to enhance the communication for coordination among government agencies. Design/methodology/approach: After reviewing the Unified Model for E-Government Acceptance (UMEGA).
- Digital divide is eminent everywhere even with the availability of technology in the world with the fast pace in the development of technology. Issues like literacy, infrastructure, policy, geography (urban and rural), and economy (rich and poor) contribute to the digital divide (Padmapriya, 2013; Verma, 2012).
- Lack of regular update of legislations and their implementation in given time is a challenge which is required as a policy to support the implemented systems to operate in supporting environment. The challenges like implementing laws, acts and policies, and regular amendment are prominent while implementing the e-Government systems (Akther et al., 2007; Rai et al., 2020; Maharjan, 2018; Mukamurenzi et al., 2019
- In order to develop, deploy, and run the systems human resources are very much necessary. The human resources need to be sufficient and skilled as most of the IT services

are outsourced, and this shows that there is a lack of strategic plan for IT human resource development and most of the organizations lack institutional memory and documentation (Akther et al., 2007; Furuholt & Wahid, 2008; Maharjan, 2018; Mukamurenzi et al., 2019; Verma, 2012; Thapliyal, 2008).

The observation and responses drawn from the interviews with the 33 respondents (government officials) are analysed and interpreted below.

Governance

Good governance and political will are required for the development of a country from local to the central level (Cash, 2016). The governance system is established to provide public services to its citizens in an easier way. Technology is playing a vital role in bringing government services closer to citizens through online platforms. The government is still performing and providing its services in the traditional way and has not come out of the existing cultural mind set. Some of the striking responses are quoted below.

"We are overwhelmed by our tasks or we tend to think that we have never thought about our process of service delivery. Even though technology has been introduced we have followed the same traditional service delivery process which has not provided us with the results we wanted."

"The entire government service delivery approach needs to be overhauled to upgrade the existing traditional governance system, in which the government organizations are performing in silo or isolation."

Political leadership

Political leadership counts in countries where democracy prevails. The political leaders, who are elected and selected by the people, have the authority to develop a strategic vision for a country. The political leadership in Nepal has put forward the Digital Nepal Framework to integrate technology use into public service delivery system. They do understand the need for technology but have failed to prioritize it with national interest and vision. The respondents responded with following thoughts:

"I don't think the political leadership is aware about this, they just blame bureaucracy for inefficiency of the government and the framework could be a populist way to grab the attention of citizens."

"The leadership needs to be reflective on its actions. A lot of investment has been made in the digitization process. We even developed e-government master plan but could not pass it from the House of Representatives. We need to be clear about our national goals and political aspirations."

Technology adoption

Technology adoption is another factor that plays a major role in acceptance of the e-Government systems. Technology implementation brings a shift in the existing mode of service delivery for which the provider and receiver should be ready to accept. During the interviews, most of the respondents replied that people would use the system if they are aware; and if they require the services.

"Most of the young citizens use mobile phones so they will use the system in case they need the service. Others are also bound to use the system as government is imposing the use of online systems to access the government services."

Change in behaviour

Behaviour change is required to adopt the change in service delivery. Generally, people do not want to change their behaviour as they are used to with the existing system of service delivery. During the interviews, most of them replied the need to change in behaviour by both the service provider and receiver for providing and receiving the service. Some of them expressed the rigidity of people in changing their behaviour.

"There is no alternative to the use of technology so both the service provider and receiver should change their behaviour. Use of technology is the future of public service delivery and we have to get used to it."

"People are very much used to the existing system, so they are very much rigid towards change. If there is no added incentives in any form they might not change."

Integrated service delivery

E-government systems provide the government service delivery to the public through online platform. There is a lot of possibility that many systems have to be integrated for single window service delivery system. For example, while issuing a passport the citizenship information is crucial, and for issuing citizenship certificate, his/her birth certificate is necessary. The government while designing the systems should consider this integration so that both the service provider and receiver can rely on the single window service delivery. During the interviews, many were aware on the fact that they require integrated services.

"Every time a person has to produce his/her citizenship certificate for any kind of public service. Is it necessary? Even though we have digital systems, our rule still demands paper based evidence. There might be a missing link where people do not have to provide the same document again and again for obtaining public service."

Citizen involvement

The main users of e-Government systems are the citizens, so their involvement is necessary for the successful implementation of the systems. Most of the time, the services are developed from the service provider point of view and the citizens are not involved. During the interviews, the respondents agreed on citizen involvement.

"Government is incomplete without the involvement of citizens, so when government designs and implements the digital systems, the views of citizens can support in the betterment of such systems. In Nepal, we have not focused on the citizens' views, so we have not been able to create awareness amongst the government actors and citizens."

Enabling environment

Without a suitable enabling environment, the technology implementation is not possible. It requires availability of the basic fundamental needs like internet, hardware, software and training. The

interviewees agreed on the need for an enabling environment for e-Government implementation from both the government and the citizen point of view.

"We cannot implement the e-Government systems without required technological systems and training to use the system. If citizens do not have devices to access the knowledge and services they might not be involved in using the system."

Digital divide

The digital divide occurs due to the lack of proper initiatives from the government to bring all the citizens into a single digital platform. It not only requires a good policy but also a proper infrastructure in place, education and awareness. The literacy rate of Nepal is near about 60 percent, which is less compared to the neighbouring countries of Nepal. The education can help the citizens to understand the need of digital services and the way of receiving it. During the interviews, the participants showed concern on this.

"How can a government confirm that putting a policy in place or developing a system will encourage the people to use the system? There should be a proper education and awareness amongst the people so that they can access the services by themselves. Sometimes their economic condition also comes into play."

Legislation

Without proper legislation on e-Government systems, it is always difficult to move ahead. The investments made in this sector will not yield desired results, if the system development work is carried out in isolation rather than in a combined way to provide integrated service delivery. People are also aware of the fact that lack of policy has affected the sustainable development of e-Government systems. There should be a policy effort to initiate coordinated approach to develop integrated systems for the government.

"Our systems development is not driven by a unified policy; it is mainly due to the change that is occurring in the field of technology. Why do we change the website of an organization once the leadership changes? We must have a policy that dictates the use of ICT based system; in case of our public organizations, it is dependent on the understandings of the individuals."

Human resource

The technology implementation is also not possible without capable and sufficient human resources. The GoN does not have a proper human resource plan to manage competent workforce for the IT systems development and implementation. Therefore, for most of the IT related projects, human resources are outsourced and yet the service is not as excellent as expected. This has affected the institutional memory; and in the consecutive rounds of system up-gradation, our systems have failed to realize the organizational needs. The interviewees also agreed on the need of dedicated human resources.

"For most of our IT based projects and tasks, human resources are outsourced because we have some, but they are not sufficient. Sometimes we do not get services in time too. The GoN has not been able to attract more IT based human resources, so we have to rely on the private sector of Nepal, which is a weak point of the government, and engaging private sector is also person-

oriented. Even there seems to be a fault in the recruitment and development structure of IT human resources. They are specialized human resources but the government is treating them as generalized human resources due to which they feel ignored, left out and demotivated."

Ways ahead

The issues and challenges discussed in the above sections define the ways ahead actions and the steps to be taken in the development of citizen-centric e-Governance system. There should be a proactive approach from political leaders to address the changing paradigm of technology so that the implementation of technology will get priority. The bureaucratic leadership should also join in the combined leadership to develop the vision of technology implementation. This gives a 'whole-of-a-nation' or a unified approach towards the development of the e-Government systems that can communicate and share information amongst the citizens so that they will be motivated to use a single system to access services from the government leading towards the establishment of citizen-centric e-Governance systems in Nepal.

Discussion and conclusion

With the conception of e-Government in Nepal, digitization of services started in every organizations. However, the existing isolated working culture is also apparently reflected in the design and development of e-Government systems. One of the main objectives of e-Governance is citizen-centricity. However, digitizing the traditional governance system could not adhere to the citizen-centric approach. The digitization of the service commenced but the process remained the same, which did not provide easy means to access the government services, and the citizens had to undergo the same processes. Still the citizens need to go physically for the services. There was and still is no or limited data sharing and integration between the government systems. In any government organization, a service seeker has to produce citizenship certificate physically to receive a desired service. If there were data sharing and integration systems amongst government organizations/agencies in place, then a single window system would be possible and not every time the verification and validation of a person's identity would be necessary. The implementation of e-Governance is also dependent on the socio-economic status of a country. If the social and economic status of a country is weak then it will not be possible to obtain the desired effects of e-Governance. The will of the political leadership drives this cause, as they are the primary actors to formulate the policy for national development through their political manifesto. The concept of whole-of-a-nation should germinate from the political leadership so that the policy formulated by the political leadership will support the decision making of the bureaucratic leadership.

Various existing literatures and researches on the challenges for developing citizen-centric e-Government systems in developing countries point out different issues of the concerned countries. Among them the common and most repetitive issues and challenges were derived from the in-depth analysis of the existing e-Governance situation of Nepal. They include: governance, political leadership, technology adoption, change in behaviour, integrated service delivery, citizen involvement, enabling environment, digital divide, legislation, and human resource. In developing citizen-centric e-Governance system, whole-of-a-nation approach is necessary, where all the activities interconnect with one another to provide a wholesome effect. The change in traditional mind-sets is necessary and organizations should move towards the organic approach

of technological development. Implementing the solutions that worked for other countries or a private sector may not yield the desired effect; the solution has to be developed from within the bureaucratic system of Nepal. Therefore, a national strategy is relevant in a case where the whole nation is trying to get something better out of technological interventions. Many countries have been successful in developing and implementing national strategy for the common cause of the ICT development. The approach starts with putting citizen at the centre of the electronic service development. Once the citizens are at the centre then all the means and methods used to develop the e-Government system will point towards the growth of citizen-centric approach.

Limitations

The research is done based on the secondary data and interviews conducted with limited number of participants from government organizations and citizens. Due to the ongoing pandemic face-to-face interviews (virtual) were conducted through telephone and online platforms.

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