Bhutan Plans a National Technology Drive – Are We Ready?

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Bhutan plans to move into a new era – a technology-driven phase of development and growth. Spurred by the rapid global momentum in technological innovation, the government is responding to His Majesty The King's advice – on National Day, 2019 - to articulate a 21st century economic roadmap.

So the big question – are we ready to adopt and adapt today's technology for national governance? Evidence indicates that the vision is understood but we have not built the necessary platform for the digital age.

Besides the need to change our mindsets to understand such a transformation we need the system, the people, and infrastructure which includes connectivity. Bhutan has basic Internet connectivity but no redundancy, meaning no backup like the generators we use to back up power supply. Serious use of the Internet requires what is described as 99.999 redundancy, because losing connectivity even for a split second can mean major costs and damage.

Bhutan identified a third "gateway" for connectivity, pulling a fiber optic line from Bangladesh, through northeast India, into Samdrup Jongkhar. This means that, if the current connectivity through the Siliguri "chicken neck" breaks down, we are still connected. The two current gateways, Phuentsholing and Gelephu, are both connected through Siliguri in India.

This option has been pursued with the governments of India and Bangladesh for about 10 years. It has not come through.

ICT-based governance cannot take place without ICT professionals. The Bhutanese government employs nearly 300 ICT professionals in different government agencies. Bhutan has come beyond the age where a senior official would ask the ICT officer to fix his refrigerator. We have largely past the stage where ICT officials were recruited by different ministries for different tasks, and the official network of ICT officials now works

with the Ministry of Information and Communications which had been identified as the "parent" agency. But there are the coordination problems of a disconnected bureaucracy.

In terms of infrastructure, one of the government's most expensive investments is a network of 200 community centres, one in each gewog, as a "one-stop shop" for public services. But the 200 community centres have been tossed from one agency to another and do not yet have the stability to function effectively. They need a long-term plan beyond the political whims of governments.

The two articles here, by Lungten Zangmo of the Public Service Delivery Division, Cabinet Secretariat, outline the structure and plans for the community centres and parenting of the ICT professionals by MoIC. Both are critical for the success of Bhutan's vision for ICT governance.

Community Centres to Receive a Facelift

Community Centres (CCs) are set to receive a much-awaited reinforcement. The government recently announced CC revamping efforts along with the National Cottage and Small Industry Development Bank (DCSIDB) initiative.

The CCs were established between 2011 and 2014. There are 200 CCs operating across the country (except in Soe, Naro, Laya, Lingzhi and Lunana gewogs), most of them located close to the *gewog* (block) administration. Their objectives remain largely similar over time -- to serve as single access points for a range of public services, and to contribute to community development, in pursuit of harnessing the potential of Information and Communication Technology (ICT). The CCs are connected with the Internet and equipped with computers, printers and photocopying machines. Enabled by the G2C initiative, a few agencies decongested their services by passing some to the CCs.

The CCs continue to provide a list of services, including the processing of a few selected online public services, and offline services such as printing, photocopying, scanning and binding.

With the Bhutan Development Bank Limited taking over the operations

and maintenance of the CCs from Bhutan Postal Corporation Limited (since March 2015), the CCs provide gewog banking services that facilitate deposit and withdrawal services. This change, which came because of the change in government, reduced the number of services that Bhutan Post had proposed, including the services of the other banks).

Some of the Recurrent Issues With the CCs Infrastructure, buildings, equipment, and connectivity. The CCs are easily recognisable by their standard features — one-storied, two rooms, green-tinged roof. Equipment and structures continue to face natural wear and tear, requiring a huge maintenance investment. Almost all have reached their end of shelf-life. On the other hand, over time, the CCs have received improved connectivity.

Business Model The Social Enterprise Business Model of the CC management was to bring about increased sustainability over time, with the government filling up the viability gap. A huge deficit between operational costs and revenues earned calls for a thorough review and planning effort, to decide a business model that will make the centres more sustainable. Integral to such a model would be a framework for stakeholder coordination and collaboration and diversifying the range of services offered by the centres.

Human Resources The CCs are manned by operators who are contract recruits. Besides the uncertainty of their tenure, another grievance raised by the operators concerns their remunerations. In the context of the operational cost and the huge deficit incurred, the salary component alone constituted more than 70 percent of the operating costs of the CCs in 2018. The government's plan to bring the CCs under the CSI bank can be seen as a timely intervention, especially in the context of rationalising a range of initiatives through more coordinated efforts.

A closer look at the objective tells us:

Convergence of Initiatives The National Cottage & Small Industry Development Bank, by virtue of being the rural banking service, is intended to have greater reach and spread, with closer access for citizens. The CCs already exist in the best proximity to the communities, thus there is potential to converge and coordinate efforts and save resources.

CCs as a Hub for Technology-driven Activities Numerous technological interventions in key sectors such as health, education, business and service delivery are ongoing. By the end of the 12th Five Year Plan, the Digital Drukyul Flagship Programme is intended to bring about a major digital transformation in the country. With special focus on curbing the digital divide, the CCs with their existing facilities are best placed to serve as kiosks for the communities.

Service Delivery at the Community The shift in CC management is expected to strengthen service delivery, given the opportunity to review and adopt a viable business and governance model. There are also possibilities for increasing the range of services, including those from corporate and private sectors. With an increasing number of services adopting online platforms, settings like the CCs can play a bigger role in facilitating service delivery in local government.

There are a couple of underlying factors which require review and intervention. Foremost of these are the costs involved in resetting the centres, in terms of revamping the infrastructure. For the centres to be optimally functional, some primary requirements are uninterrupted connectivity, robust equipment and a continuous supply of consumables.

Equally important would be the competencies, skills and motivation of operators who run the centres. Under a viable business model, the centres could operate to bring in better revenue. This means that the qualifications, skills and competencies of CC operators also need to be revamped, commensurate with the role and responsibility vested in the CCs.

Another look at the current situation indicates not only a need for professional development, but also adequacy of the human resource. If CCs are to achieve their objectives, there is a need for skilled personnel, such that the roles and responsibility of the operators are specialised and professional. The current system of one operator per CC is not enough for them to provide a wide range of services.

Converging with other thoughts around decentralisation, systemisation of services, an integrated approach to service delivery and rationalisation, to name a few, more services can be provided by the local governments.

Under the current form of decentralised democratic governance, the relations between the local government and CSI banks will have to be clearly defined, because it has been proposed that a number of G2C services will be provided through the CCs.

Since the conception of the CCs, there has been an evolution of technology and people's skills. It is important that services that are being provided, or can be provided, through the smart phone, for example, should be identified and not duplicated through the CCs or through government agencies.

When all is put in place, there is much to hope for from the new venture.

Parenting Initiative for ICT Professionals

Introduction

With increasing emphasis on leveraging technology for good governance and service delivery, it became apparent for the Ministry of Information and Communications (MoIC) to institute a more effective approach to managing ICT professionals in the government. In 2009, there were an estimated 350 ICT professionals and technicians in different ministries and government organisations, all functioning separately, based on the different needs of the organisations. MoIC saw the need to coordinate them into a professional team with multiple specialties to serve the government's different requirements.

Approved by the Royal Civil Service Commission, the Department of IT and Telecom (DITT) strategised an ICT Parenting Framework for ICT professionals, in order to standardise ICT human resources in government agencies, facilitate innovation through competency-based career tracks, and ensure optimal use of ICT professionals.

MoIC as the parent agency is responsible for training, transfers and coordination, through ICT head meetings and conferences. DITT is responsible for standardising technology and keeping ICT officials informed about the "whole of government initiatives", to ensure that agencies are aware of the central initiatives. Reports say that this needs to be made more effective.

The parenting strategy placed all ICT professionals under DITT, establishing ICT divisions in agencies and development frameworks for career, competency, and skills development. The department conducts communications meetings and forums with ICT professionals and government agencies, which ensure stakeholders' involvement, and also enable knowledge sharing and peer learning opportunities. This was seen as a good output of the parenting initiative.

What's Going Well

The parenting concept was part of a broader objective of meeting the aspirations of a technology-driven society, for the government to be able to achieve the vision of a knowledge-based society. A decade after functioning as a parent for all ICT professionals in the government, the department has come a long way in reaching some milestones, but it is also challenged by problems that need to be solved. A brief reflection on some of the key milestones:

A Parent for ICT Professionals DITT is the parent agency for all ICT professionals in the government. The ICT Management Division of the department maintains the data of the ICT professionals and assists in human resource management and development. Thus, the ICT professionals have gained a sense of belonging to an agency, as indicated by "a statistical significant correlation found between job satisfaction and the ICT Parenting Framework".[1]

ICT Divisions in Agencies Prior to the parenting initiative, it was common for divisions and departments to recruit and retain ICT professionals on their own, often focused on a single system, or at least, to provide technical support to systems and networks. Today, the ICT divisions in the agencies provide centralised support for system development, network, and other technical aspects.

Knowledge Sharing and Learning Platform Some ongoing activities as part of the parenting strategy are ICT Heads' meeting, ICT Conferences (conducted once in two years), and experience-sharing forums. These forums are intended for peer learning and knowledge sharing opportunities among ICT professionals.

[1]An in-house exploratory study "to study the impact of ICT parenting frameworks on job satisfaction level of the ICT professionals", 2017.

Competency Framework Capacity building and skills development frameworks a re developed to help identify competency areas for the professionals. Enhancement of the ICT sector's capacity and capability is one of the priorities under the Digital Drukyul Flagship Programme.

Experts' Pools A few experts' pools in fields of project management, networking, system analysis and design, security and space technology were formed. In one form or the other, experts' pools continue to render support in their respective fields.

Challenges Encountered in the Implementation

As it may seem apparent, the implementation of the strategy and its impact may be far from being completely successful. Therefore, it would be fair to analyse some of the underlying challenges that hinder(ed) the realistic achievement of the overall parenting initiative.

The parenting framework encourages specialised tracks with clearly defined job roles. However, the challenge remains for the ICT professionals to be able to pursue these tracks, as they are involved in a range of technical and non-technical assignments. Technical tasks are mostly in trouble shooting and providing basic technical support. This not only impedes their potential for doing actual core technical tasks, but also leads to many ICT professionals forgetting their core professions.

The multiple skills expected of an ICT professional are equally challenging, especially in agencies where there are only one or two personnel. The need for complex technical know-how, from server management to networking (and connectivity) to system development, often exhausts the professionals.

Management support is a crucial factor in achieving the role of "ICT as a service". Where ICT interventions are seen more in the form of systems (and the phobia acquired thereof due to technology-related challenges), the professionals face the challenge of getting the appropriate support to exhibit their full potential (and that of technology in service delivery).

More concerning is the alarming rate of trained professionals leaving the system for better opportunities outside the country. The deficit in numbers makes it difficult to ensure continuity of services, but it is also a problem

from a human resource management aspect (number vs. the workload). At least five well-trained ICT professionals have either resigned, or are on extraordinary leave annually (as per the data maintained by ICT Management Division, DITT).

An Ideal Stage

Bhutan has unique and favourable conditions which help to leverage our potential. With the huge emphasis on technology and its interventions, the value proposition on ICT professionals should only be escalating. "What could we do better to reach an ideal stage?" is perhaps the question we should be confronting.

Some general ideas shared during informal discussions and debates can be summed up as follows:

Central Government Agency for Technology: Given our size and number, it seems feasible to have a centralised approach to services and resources. Successful models are available in neighbouring countries, notably the National Informatics Centre, India (NIC: https://www.nic.in/) and the Government Technology Agency of Singapore (Govt Tech: https://www.tech.gov.sg/). The merit of a central agency for all technology-related interventions would be clearly in two areas: i) effective utilisation of resources (human, financial and infrastructure); and, ii) an integrated mechanism to achieve a whole-of-government approach to governance and service delivery.

Centralised Hubs for Services: The establishment of a central technology agency is ideal to create hubs for services, specialised in various skills and competencies. Some existing G2G services, example, Thimphu Wide Area Network and Government Data Centre, have proven their effectiveness. A central pool of ICT professionals can deliver services to the agencies, delegated through an effective mechanism, possibly a systemised approach to request-and-deliver services. Common requirements like security patches, network maintenance, and equipment can also be arranged through such an approach.

Specialised Career Paths: A common concern among ICT professionals is their career trajectory. The super structure framework of the Royal Civil

Service Commission intends to retain specialised technical personnel in their line of profession, to be able to optimally utilise their expertise. Aligned to this framework, the ICT professionals can be categorised by their expertise, skills, and competencies, and appropriately specialised with enhanced career opportunities.

Setting the right human resource development and management strategy can definitely be an answer to realising the quicker benefits of technology-driven reforms. This was the principle of the parenting initiative.