DIGITAL TRANSFORMATION - ADMINISTRATION AND SERVICE DELIVERIES BY SOVEREIGN NATIONS

CMA (Dr.) Paritosh Basu
Senior Professor
NMIMS School of Business Management
Mumbai
paritosh.basu@sbm.nmims.edu

Introduction

The outset of this article should be with clarity about what is digital transformation from the perspective of a sovereign government. For a common man the perception could be that delivery of services through an App in smart phones, safe maintenance of records of events and transactions in a computerised storage system may be all and the end of it. But Digital Transformation (DT) is a journey. Perhaps that is the first step towards digitally transforming any government's systems and processes with the power of deep digital technologies.

Governments of emerging countries may not disagree that citizens in urban areas are ahead in adopting digital devices and applications. Their devices are flooded with plenty of options for receiving service from private parties. Hence, government must accelerate and catch up. Otherwise, there may be existential threats from private entities, who may encroach privileged domains and take over tasks of governments. The case in point is the financial ecosystem into which private cryptocurrencies have made inroads about a decade ago.

Digital gurus suggest that digitization of data is what enables and empowers organisations of any nature to digitally enable their policies, processes and actions to start with. For example, biometric digital identity management through *Aadhar Cards* for about 1.35 billion citizens has placed federal and state governments of India in enviable possession of an ocean of data. These can further be complemented, diversified, and powered by data from census, subject to ensuring data privacy, for effective and efficient DT of government administrations and service delivery processes. This can also help collaboration with private sector organisations for ultimate benefits of citizens simultaneously with growth and prosperity of emerging countries.

Objective

This article aims at analysing some of the dimensions of digital transformation of major functions of a country's government, and delivery of both welfare and paid services from the perspectives of both administration and citizens of an emerging country like India. It will also try to examine how government can collaborate

and enable private entities for successful delivery of specifically identified services to citizens which may not be practically feasible for government alone to handle.

The recent case in point is involvement of private hospitals for inoculating crores of citizens with vaccines for Covid-19. Government is in possession of citizen-centric data and in command of production and logistics management of vaccines. All these can be shared on a need-to-know basis, under duly executed collaboration agreements, to widen the network of digitally administered processes for prioritisation, vaccination, monitoring and tracking aftereffects and effectiveness.

The author also proposes to identify the drivers of digital transformation and understand how government, as an enabler of DT, can help to be proactively ready for what services citizens may require, assess probable risks, and essential actions for achieving a state of readiness ahead of time. All these will help reducing impacts of natural calamities, health crisis, etc., minimising value destructions and cost savings simultaneously with improved speed and quality of administration and delivered services.

Digitisation and Digital Transformation for 7 Rs

Predictive analyses by futuristic social reformers have cautioned the world about perilous and frightening shape of things to come. Andrew Winston is one of such futurists. He is the founder of Winston Eco-Strategies and an adviser to multinationals on how they can navigate humanity's biggest challenges and profit from solving them. It would be useful at this stage to know their major predictions made in May 2019 about 'The World 2030 - Nine Megatrends to Watch'[1].

1. Demographics: Humanity will add 1 Bln. more to reach 8.5 Bln. population.

2. Urbanisation: Two third of population will live in urban areas.

3. Transparency: World will become even more open and less private.

4. Climate Crisis: Will continue to change faster towards extreme weather everywhere.

5. Resource Pressure: Humanity will aggressively confront resource constraints.

6. Clean Tech: Zero carbon technology will surprisingly be far along.

7. Technology Shift: IoT will won the day and every new device will be connected.

8. Global Policy: Open questions about how important things will get done.

9. Populism: The rise of nationalism and radicalism may increase …. or won't.

Covid-19 Pandemic, global warming, glacier melting, wildfire in Australia and the western USA, etc. have already unnerved and unsettled many nations, irrespective of their degree and stage of economic and technological development, including mighty USA. Many nations have excruciatingly realised that they are under-prepared to face any crisis of that scale anywhere under the Sun. The above analyses and ongoing ghastly experience from pandemic have led us to add 'FU' after VUCA and make it VUCAFU, the last two letters representing 'Fear of Unknown' and 'Unprecedentedness'.

For peremptorily achieving a state of readiness the government of any nation must first know more about its citizens' and track the related dynamic factors in respect of:

⊙ Geo-physical whereabouts,

⊙ Sociological, medical, and economical state of affairs,

⊙ Risk factors for life, livelihood and living daily life,

⊙ Immediate minimum needs to be fulfilled on one time and recurring basis,

⊙ Essential services required just before any predicted natural or man-made calamity, e. g., evacuation, during the time and after the crisis period to save life, means of livelihood and minimise loss of properties.

Without getting into further analysis, one can conclude that DT must be the very first step for identifying the above and gathering information / data before any step is taken for efficient and effective administration, as well as service deliveries during times of both peace and crisis.

It would be useful to note here the following seven steps for information and data management as suggested by Exela with further narratives added by the author:

Seven Layers of Digital Transformation

Digital Transformation - The Task beyond ERP

7 Front-End Software
Integrate with the front end of stakeholders' devices

6 End-to-End Processing
Conduct end to end processing and ensure error free transformation

5 Platform Interface Integration
Connect and integrate the digital system with the core systems for operations

4 Process Component
Use results from algorithmic applications for digital transformation of processes

3 Workflow Automation
Apply algorithms and start utilising the data for the business process you envision

2 Data Management
Categorise and organise the digitized data and make it ready for application of further processes

1 Data Aggregation
Aggregation of business relevant data, convert to digital form and store for easy retrieval

Source: https://twitter.com/exelatech/status/1140363418450292737

Digitisation of citizens' data, collected through biometric identity management platforms like that of Aadhar, as achieved by the Unique Identification Authority of India, would help in many ways. That gigantic ocean of data continuously gets updated / modified every day through flow of new data mainly due to deaths and births. If the risks of data safety and privacy can be taken care of, such huge data can further be diversified and powered by data gathered through Census every 10th year using a common key(s). However, near error-free data governance regulations must be implemented beforehand. All such data must then be put to structured and unstructured analyses using digital tools from the stables of Artificial Intelligence, Machine Learning and Big Data Analytics.

The above actions would help making better meaning of data and drawing inferences from information churned out. Results from such exercises can be used for formulating policies, strategic planning, laying down systems, and processes for execution to ensure the following:

Proactively attaining a state of readiness and digitally transforming legacy systems and processes by	Achieving 'Seven Rs' in delivery of welfare and paid services
⊙ Amending laws, rules, regulations, code of conduct,	⊙ Of the right quality,
⊙ Recognising latent needs of the country and demands of citizens across societal levels and earning groups,	⊙ At the right time and frequency,
⊙ Identifying 'Mission Critical Objectives',	⊙ To the rightly targeted group of citizens,
⊙ Formulation of right strategies and execution plans,	⊙ At the right cost,
⊙ Selection of the right technology with flexibility and scalability,	⊙ For the right end results,
⊙ Risk-enabled performance management,	⊙ With the right impacts, and
⊙ Appropriate budgeting, monitoring, and control.	⊙ Right state of readiness for future.
⊙ Picking up learning points for future	

For overall development and sustainable prosperity of the country. Through such services citizens would be convinced that sharing their personal data has finally helped and enabled the Government to deliver those services which they need and are looking for. Impacts created by some such services could also be beyond their imagination.

OECD's Guidelines for DT of Government Services

At this stage it will be useful to consider the published document of OECD titled 'Digital Government Strategies for Transforming Public Services in the Welfare Areas', published in 2016[2]. The document suggests three cornerstones for setting objectives of DT of governments' services, viz, Good Governance, Efficiency, and Effectiveness as expressed through the following graphic.

Source: http://www.oecd.org/gov/digital-government/Digital-Government-Strategies-Welfare-Service.pdf
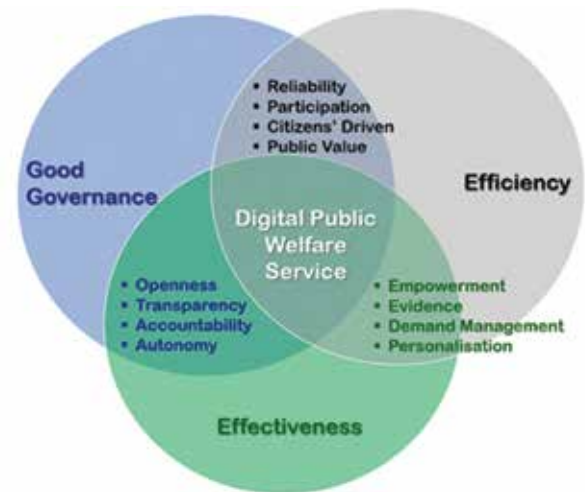
The above graphic by itself speaks thousand words about outcomes of DT when those three objectives are considered while designing citizen-centric digital solutions for government administration and providing welfare services. All the twelve outcomes as stated at the intersections of three major objectives will ultimately help a nation to be happy with inclusive smile. Both federal and state governments will also be able to garner active participations from citizens for mutual benefits.

Drivers for DT of Governmental Functions

It is now an imperative to deal with the drivers for DT, besides the aforesaid three objectives. Major drivers of DT of a commercial organisation may not necessarily be the drivers for DT of government functions at federal, state, and local self-government levels. Again, in a unique of its kind vast and diversified democratic country like India the drivers will be more in types with varying degrees of impacts and end results. It will be helpful to note the following from a research report of the Deloitte University[2]:

"The confluence of several factors ... will influence what happens in the future and ultimately, how governments evolve to meet citizens' changing needs. Understanding these factors or 'drivers of change' and their potential impact is the first step in preparing for the future" This research paper continues to state that *".....Across the world, trust in government is at an all-time low.... the gap between citizen expectations and government's ability to meet them has never been greater. The current industrial age model of government needs to change radically to close this gap."*

Anything and everything a government wants to do for DT has to be built on the foundation of 'Trust and Dependability.' It is an understood phenomenon in any societal and political system that:

⊙ What is true may not all citizens always trust and depend on, and

⊙ What all citizens trust and depend on may not always be true.

Therefore, the predominant guiding principle for the

government should be the axiom, there can be only one version of truth under a given circumstance of life in reality. Building solutions using Blockchain Platforms would certainly resolve issues around trust, dependability, security, and safety. Readers may refer this author's two articles for blockchain based solutions related to services for agriculture and healthcare [4 and 5] published in August and September 2020 issues of this Journal.

While working on this principle the government must work with the objective of deriving maximum benefits from the impacts of the following drivers:

1. Minimised Digital Divide and 'Netizenship for all

Any government's administrative team must welcome all citizens to the digital world breaking barriers of digital divide between rich and poor as well as urban and rural areas. Citizens across all strata of society must first be converted to a migrant to the internet world and then a permanent netizen. This is by no means an easy task. The first few steps for this are:

⦿ Providing uninterrupted telecom bandwidth across length and breadth of the country,

⦿ Sensitise and familiarise each citizen through suitable media for mass communication about digitally transformed systems, processes, and reliability thereof,

⦿ Helping citizens adopting the front end of the solution to receive multifarious benefits that will be made available through digital solutions.

There should be one simple but overarching '*Made for me application'* that would host and navigate for all services for a common citizen to use at ease.

2. Citizen Centricity

The focus for any initiative for DT should be the beneficiaries instead of government agencies thinking of only facilitating administrative and execution processes. How citizens will best receive at ese and be benefitted out of the services should be the critical point of concern. Such a focus on the overarching objective would lay the foundation for

framing strategies and planning actions for delivery of '*Meant for me services'* to citizens.

3. Societal Concerns

Citizens wrongly or rightly grapples with trust deficits, perceived evils of digital lifestyle, e. g., hyper connectivity and dependence, lack of digital capability, fear of unknown, fear of losing data privacy and safety, scepticism about government fulfilling commitments and so on. Government must consider these common set of societal concerns as one of the drivers for selection of technology and designing digital solutions. Cost savings due to DT must be shared through reduced charge for services. All financial benefits should directly be remitted to respective bank accounts of citizens as has already been started in India.

4. Demographic Drivers

Demographic drivers for DT will vary from countries to countries. Such drivers will depend upon average age of population, concentration of population in various age brackets, geo-physical living conditions, gender diversity, level of education, faiths, and beliefs, etc. One size fit all kind of solution for all types of problems and services would not be possible. Hence these should also be considered as a separate group of drivers

In a country like India about 65% of population will be in age bracket of 25 to 45 years by 2025. Government can design solutions in a manner that users of that age group can provide new input information which can help government machinery to constantly update and upgrade existing data base as well as weed-out unwanted data and information. However, for this structured guidelines and adequate checks and balances are to be embedded in the App itself for establishing authenticity of inputs.

5. Structured and Unstructured Data

Success of any digitally transformed system depends on quality, quantity, and timely updating of underlying data through continuous inflows of new data and weeding out of unwanted old data. Quality of data base helps ensuring quality of data analytics and inferences drawn through applications of tools from the stable of AI and ML. All these in turn

help taking the right strategic decisions and planning for execution at the right time.

Structured data are those which are 'Named Data' and identified against a named individual citizen. In the above discourse lines have been written about sourcing of structured data, e. g., citizens' identity and basic information for 'Aadhar Card' in India and various other data through Census conducted every 10th year.

Unstructured data are equally important as a set of drivers for DT. These are not named and generally relate to a geographical region, major citizen groups, etc., collected through research-based reports of expert groups of professionals. A recent example is the report that the government will receive on the reasons of disaster caused by bursting of glacier around Chamoli village in Uttarakhand, India. Governments of all countries receive such reports on many matters concerning citizens. Such unstructured and unnamed data and information must be captured and analysed before using as inputs for DT purposes and decision making

6. Collaboration with Startups

It is generally said that the government has no business to be in the business of doing a business unless it knows the business. The political set up and bureaucratic machinery of a government is not expected to engage in technological innovation, experimentation, design and build digital solutions. But more customised the solution is more would be its effectiveness. Hence government should also function as an enabler for getting customs-built solutions designed by the country's startup ecosystem. This will obviate the need for purchasing off-the-shelf solutions from other countries which may be misfit, expensive and shrouded with safety and security risks.

A recent example in India is 'Koo' which is fast emerging as an alternative of Twitter for micro blogging. The Apps developed by startups need not necessarily used by government. Private enterprises and general citizens can also use those, which will in turn help in digitally transforming the entire countries industry. trade and commerce. Therefore, facilitating the process of developing a vibrant startup ecosystem would also

server as a driver of cost-effective DT.

7. Collaboration between State and Federal Governments:
In a democratic set up the Constitution of any country allocates responsibilities between federal and state governments. Service deliverables of the federal government are also ultimately delivered, administered and or supported by governmental machinery at state level. One of the critical drivers for success is, therefore, excellent understanding, collaboration, and orchestration of actions at the said two levels of governments. Difference in political ideologies and beliefs must not dampen this driver in propelling well beings of citizens and thus growth and prosperity of the country.

Digital Technologies and Solutions

The author would like to avoid discussions, howsoever brief it is, on digital technologies that the government should suggest, adopt, and operate for building solutions. The government of Dubai has ambitiously declared that by 2022 that city will be the happiest one in the world. They have adopted Blockchain technology for building platforms supported mainly by FinTech, AI, ML and IoT. All eight deep digital technologies can be used for building solutions and delivery platforms. Selection of technologies will largely depend upon the purpose, quantum of investment, objectives, need for security, safety, flexibility, and scalability.

Research by this author indicates that sovereign governments of many countries, e. g., China, the USA, Mediterranean EU Countries, France, Estonia, Chilli, Australia, South Korea to name a few have declared policies for adopting blockchain technology and FinTech for delivering services to citizens. Countries like Gibraltar, Switzerland and the UK have even developed blockchain based platforms for running Stock Exchanges. Readers may refer to video recorded presentations on blockchain by this author hosted at his personal YouTube Channel[6].

Administrative Functions and Services

A list of government's administrative functions, welfare and / or paid services, for which solutions can be built by using digital technologies, can continue in an endless manner. An illustrative list of such solutions can be presented tin the following table:

Administrative Functions	Welfare and / or Paid Services
• Citizen's identity credentials, birth, death	• Healthcare services
• Public voting and opinion seeking	• Old age homes, orphanages, and shelters for homeless
• Land registration and documentation	• Underground water use management

• Critically important, and precious documents of Government and Judiciary	• Agriculture - soil testing, meteorological and technical advisories, crop insurance, etc.
• Tracking of offenders and management of correction houses	• Issuance and tracking of Passports, Health Cards, Certificates of Origin, etc.
• Donations and charities to political parties	• Intellectual property rights and certifications
• Predicting and tracking of natural calamities for disaster and bio-diversity management	• Environment management and Carbon Credits
• Purchase, sale, use, tracking and tracing of licensed firearms, e. g., guns and pistols	• Central Bank Digital Currency and transaction management

The above list excludes those functions and services which are discharged / rendered by the public sector undertakings and commercial organisations.

Conclusion

Readers must have appreciated the horizon, expanse, and enormity of the subject. A few pages of such an article are not enough to write about all its dimensions. The author will feel happy if any or more of the ideas, as articulated in this paper, are found to be useful for adoption by any government agency. The author remains committed to participate in an activity(ies) for adoption of some of these ideas in designing and building solutions for the benefit of citizens of any country. MA

Webliography

1. *https://sloanreview.mit.edu/article/the-world-in-2030-nine-megatrends-to-watch/?gclid=Cj0KCQiAst2BBh DJARIsAGo2ldXJJI4BS9WmCxJa1Zl9HhuEG1Ik41In 7Hwlv6rj4Pnd3_xher0kNdQaAp4MEALw_wcB*

2. *http://www.oecd.org/gov/digital-government/Digital-Government-Strategies-Welfare-Service.pdf*

3. *file:///C:/Users/DELL/Downloads/gov2020-journey-future-government2%20(1).pdf*

4. *http://www.innoventionians.com/wp-content/uploads/2020/08/12th-Monthly-Column-Digital-Transformation-August-2020.pdf*

5. *http://www.innoventionians.com/wp-content/uploads/2020/09/13th-Monthly-Column-Digital-Transformation-September-2020-1.pdf*

6. *https://www.youtube.com/channel/UCXvrvkrRuhM_6TDqM9pX3EQ/videos*