

DIGITAL MATURITY MODEL FOR THE GOVERNMENT OF SRI LANKA



Digital Maturity Model for the Government of Sri Lanka, First Edition (2022)

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List of Abbreviations

DMM	Digital Maturity Model
GoSL	Government of Sri Lanka
ICTA	Information and Communication technology Agency of Sri Lanka
Q & A	Question and Answer

1 Executive Summary

The penetration of technology has taken a faster pace than anticipated, making a transformation everywhere, including governments. Governments, in different international landscapes, have effectively utilized technology to reap its benefits for the furtherance of their operational efficiency.

However, in comparison to the global context; government organizations in Sri Lanka are still far behind in technology adoption due to an array of reasons such as resource limitations, geographical conditions, lack of adoption opportunities and more importantly lack of a proper mechanism to identify the gaps, which prevents them from accelerating their digital transformation initiatives, and introduce improvements to bridge the same.

In order to digitally transform the government organizations to ensure a citizen centric and citizen friendly service delivery, it is essential to assess the existing strengths and improvements, which defines their current digital maturity level.

However, the identification of an organization's digital maturity status cannot be accomplished in the absence of a well-defined mechanism which enables it to understand the improvements needed and aptly adopt technology to realize the same.

In terms of Sri Lanka public service, government organizations do not have such a mechanism to evaluate their current position and identify the missing pieces to accelerate their digital transformation journey to become more citizen friendly and citizen centric in its service delivery. And that is where the availability of a 'Digital Maturity Model' becomes beneficial.

Thus, the focus of this document exclusively lies on the importance of introducing a 'Digital Maturity Model' for the GoSL to identify the digital maturity level of its network of organizations and provide necessary guidance to absorb transformational needs to achieve the expected maturity level.

2 Introduction

The spread of technology has transformed societies to become increasingly digital and its adoption is visible everywhere thus, one cannot neglect its impact on governments and how they have effectively utilized technology to achieve operational excellence and improved service delivery. A government organization to gain the best out of technology adoption; the existence of a framework, indicator or guideline to provide an understanding on its current status, depicting where it presently positioned, is of grave importance.

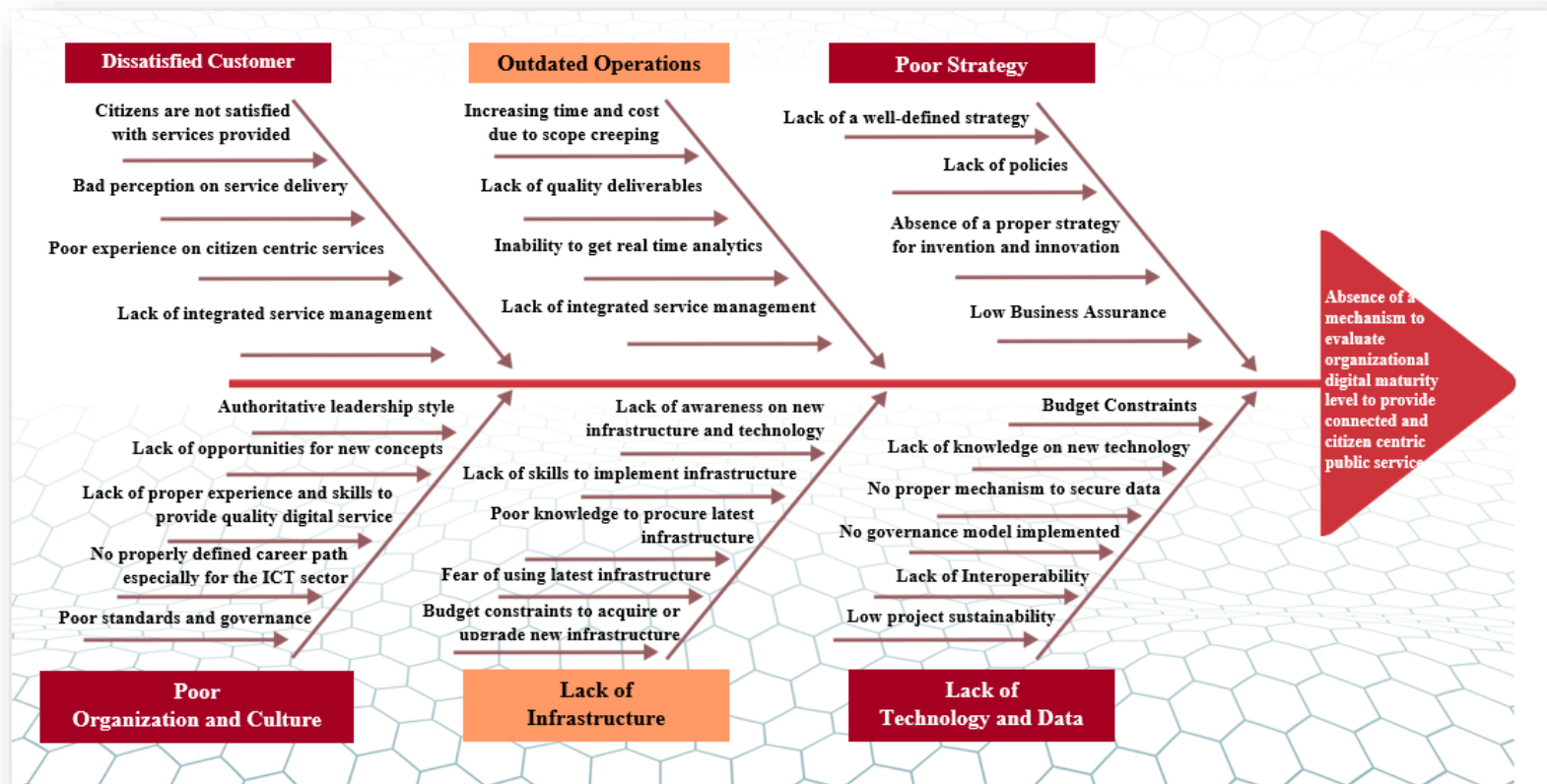
The government of Sri Lanka owns a network of government organizations to provide its wide range of services. These organizations are operating at varied maturity levels as a result of many practical challenges such as location, unequal resource distribution, lack of opportunities, lack of technology etc. This uneven maturity levels have hindered the operational excellence, efficiency and productivity expected from the government organizations to provide citizen centric and citizen friendly public services. Furthermore, GoSL owns no proper mechanism to evaluate the existing level of digital maturity in government organizations. Thus, GoSL is unable to navigate its digital transformation in the absence of an understanding on the current environment and areas for improvements.

ICTA as the apex government body entrusted with the mandate to spearhead the digital transformation journey of the country, is focused on elevating the digital maturity of government organizations through the introduction of the DMM. ICTA finds a situational analysis as a prerequisite in devising and proposing a suitable mechanisms for the GoSL to strengthen their resources, skills and capabilities, for the achievement of a digitally capable public service that delivers citizen centric and citizen friendly services. Upon referring to the global models on digital maturity assessment and countries who have implemented such assessment models, ICTA in collaboration with the government, industry and academia has developed a DMM for the GoSL to facilitate and expedite its digital transformation process.

3 The Problem Statement

The poor acceleration of digital transformation in government organizations, due to the absence of a mechanism to evaluate their digital maturity level and identify areas for improvement, has prevented them from ensuring a connected and a citizen centric public service.

3.1 Root Cause Analysis



4 Literature Review

The notion of ‘Digital Maturity Model’ has received attention by different international organizations where they have developed and introduced several models to measure the state of organizations in digital government from varied perspectives such as innovation, infrastructure, systems and tools, software, human capital etc.

4.1 Overview of Existing Digital Maturity Models

ICTA referred some key global digital maturity models, as explained in this section, in order to ensure that the proposed model for the GoSL is a best fit for the purpose.

4.1.1 Digital Maturity Model (DMM) by Deloitte

Deloitte and the TM Forum introduced their Digital Maturity Model (DMM) in 2018, describing digital maturity pertaining to digital capability across five dimensions as follows.

Business Dimension	Goal
Customer	To be viewed by customers as their digital partner that helps them control their connected future using their preferred channels.
Strategy	How a business operates to increase its competitive advantage through digital initiatives, as embedded in the company’s overall business strategy.
Technology	How successfully a business uses digital technologies to meet customer needs while reducing cost and overheads
Operations	Devising and executing digitally-driven processes and activities that increase business efficiency and power strategic management.

Business Dimension	Goal
Organization & Culture	Visualizing and developing a company culture including talent processes and management practices that supports digital transformation and progress along the digital maturity continuum

Table 1 - Deloitte Digital Maturity Dimensions

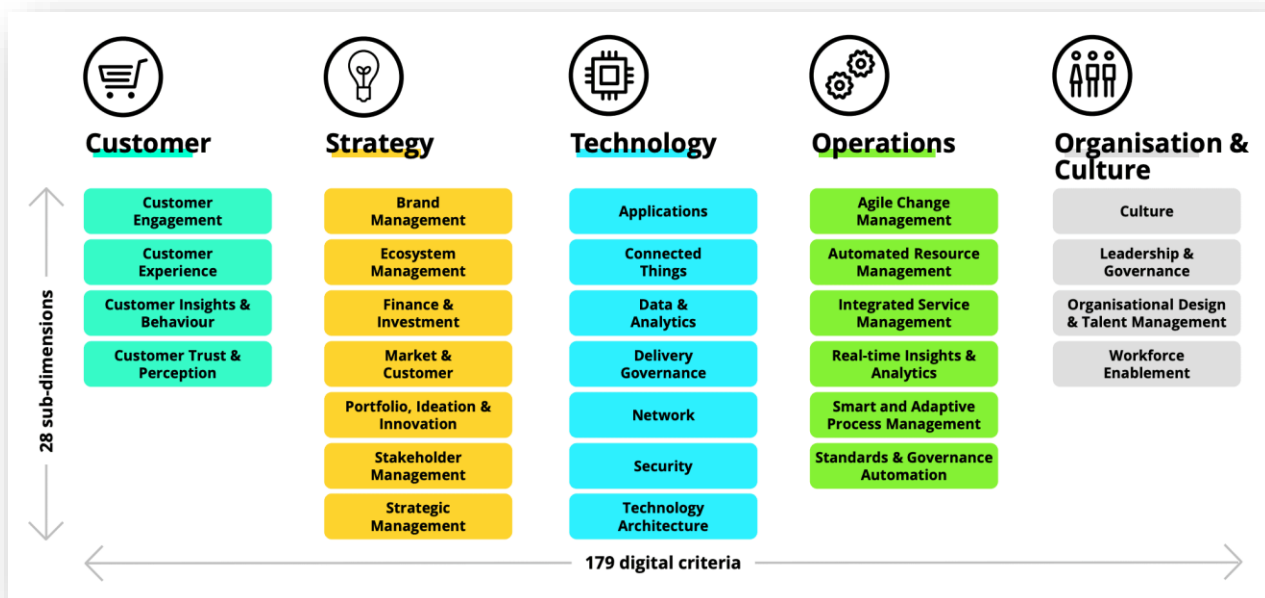


Figure 4-1 : Deloitte Maturity Framework

Source: Deloitte

4.1.2 Digital Maturity Model (DMM) by TM Forum

The TM Forum's Digital Transformation Model (DMM), was initially launched in May 2017. TM Forum model spans over six dimensions as described below.

Area	Goal
Customer	Providing an experience where customers view the organization as their digital partner using their preferred channels of interaction to control their connected future on and offline
Strategy	Focuses on how the business transforms or operates to increase its competitive advantage through digital

Area	Goal
	initiatives; it is embedded within the overall business strategy.
Technology	Underpins the success of digital strategy by helping to create, process, store, secure and exchange data to meet the needs of customers at low cost and low overheads.
Operations	Executing and evolving processes and tasks by utilizing digital technologies to drive strategic management and enhance business efficiency and effectiveness.
Culture, People, and Organization	Defining and developing an organizational culture with governance and talent processes to support progress along the digital maturity curve and the flexibility to achieve its growth and innovation objectives.
Data	Evaluates the organization's ability both strategically and operationally to ethically and effectively use data and information assets to maximize business value.

Table 2 - TM Forum Digital Maturity Dimensions

TM Forum model is similar in its concept to the Deloitte model, except for the element of 'Data' as the sixth dimension to the model, which evaluates an organization's ability to make use of data on a strategic and operational level to further enhance its business value.

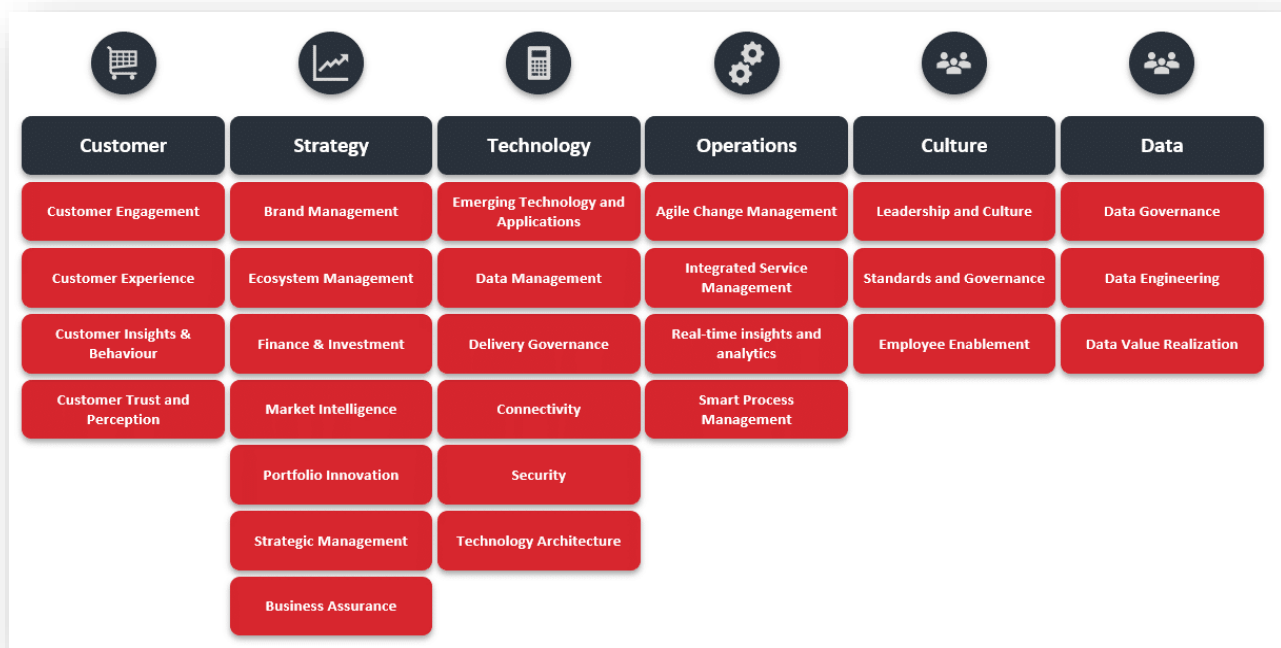


Figure 4-2 : TM Forum Digital Maturity Framework

Source: TM Forum

4.1.3 Boston Consulting Group's Digital Acceleration Index

The Boston Consulting Group (BCG), in partnership with Infocomm Media Development Authority (IMDA) of Singapore, has developed a framework to help organizations conduct an evaluation on their current digital capabilities. The Digital Acceleration Index (DAI) facilitates organizations to assess and evaluate their digital strengths and weaknesses in order to understand how digitally mature they are in comparison to their competitors, digital leaders and the industry average.

The evaluation of digital maturity under the model involves six fundamental areas, as discussed below.

Area	Goal
Business Strategy is Driven by Digital	The vision, ambition level, priorities & alignment, and digital roadmap of an organization

Area	Goal
Digitize the Core	The degree of digital maturity along the core value chain from customer offer and go-to-market, to operations, and support functions.
New Digital Growth	Developing new digital products and services, pilots and venture capital, and incubator programs.
Changing Ways of Working	An organization's digital culture and governance as well as its people improvement policies and training opportunities
Data & Technology	The management of data – from strategy to governance, from digital platforms to artificial intelligence, and the future-readiness of the world-class technology function, plus Develop Ops, cyber security, and internet of things
Integrating Eco-systems	Orchestration of digital-related partnerships and how joint value is created from it, e.g., by complementing digital offerings Broadly, through the DAI, companies can better understand their DAI maturity stages

Table 3 - Boston Consulting Group's Digital Acceleration Dimensions

These six areas are further sub-divided into 36 categories to measure and track an organization's digital maturity.

The maturity index consists of three versions namely;

1. Light
2. Full
3. Extended

4.1.4 PWC Digital Maturity Model

The digital business maturity model measures digital maturity across two axes as follows;

1. Digital Capabilities: Measure the strength of the organization's digital foundation.
2. Digital Impacts: Measure how digital technologies are used to respond to consumer demand and changes in the environment through improved product and service delivery.

Capability Indicators	Impact Indicators
Strategy	Vision
Digital Infrastructure and Platforms	Leadership
Risk Management	Governance
Talent and Skills	Innovation Culture
Customer Experience Design	Value Alignment
Technology Ecosystem Design	Business Agility
	Revenue Resilience

Table 4 - PWC Digital Maturity Model

The global models discussed in this section and their coherent principles are carefully analyzed and absorbed, where necessary, in devising the model for GoSL in order to ensure that it conserves and are in alignment of the essentials of the globally acknowledged models. The GoSL model principally follows the Deloitte/TM Forum models in its structure and design.

4.2 Country Adoption

4.2.1 New Zealand

New Zealand follows the approach of having a unique assessment framework for segregated aspects in their digital transformation journey and these areas include;

- Privacy Maturity Assessment Framework (PMAF)

Enables government agencies to understand their current level of privacy maturity in managing personal information, and identify where they can improve.

- All-of-Government (AoG) Enterprise Risk Maturity Assessment Framework (gERMAF)

Enables agencies to assess their current level of risk maturity and identify ways they can improve.

- All-of-Government ICT Operations Assurance Framework

Facilitates how to implement a fit-for-purpose assurance approach for managing information and communications technology (ICT) risks.

4.2.2 UAE

UAE launched their digital government maturity model in 2018. It consists of two sections namely;

1. Digital Government Readiness Assessment Survey
2. Digital Government Maturity Framework

The UAE model classifies government entities according to five levels from very low maturity to very high maturity and the final result provides a guidance for improvements to achieve a more mature state of digital maturity.

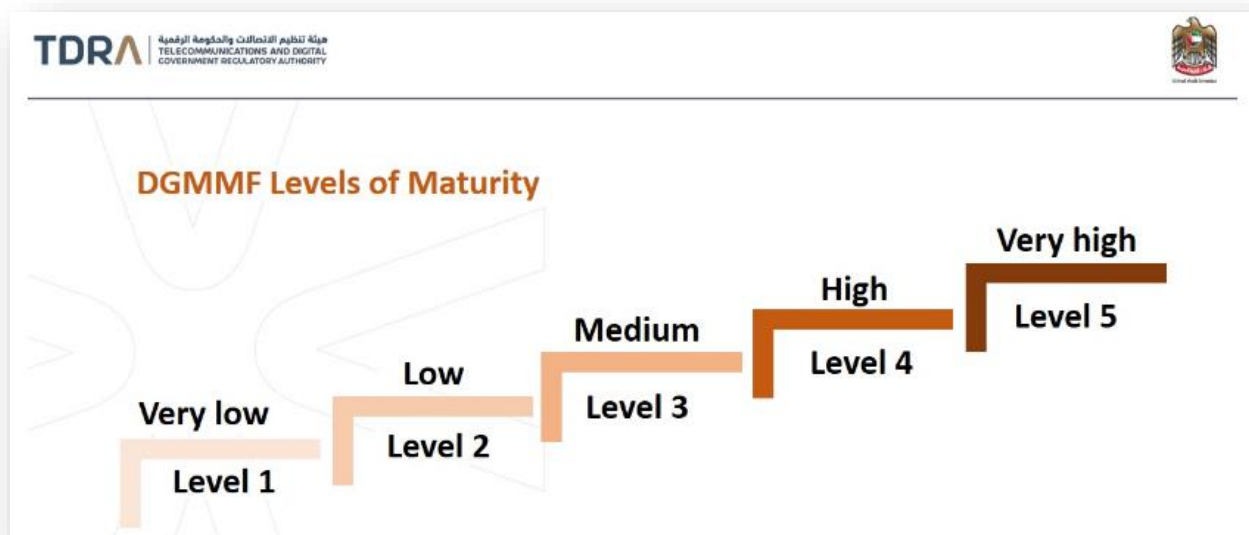


Figure 4-3: UAE Digital Government Maturity Levels

Source: UAE Government Portal

UAE maturity model comprises of three pillars and nine dimensions as follows.

Pillar 1	Pillar 2	Pillar 3
Leadership and Policies	Technological Accelerator	Organizations and Data
Leadership	Technology	API Ecosystem Management
Strategy	Cyber security	Ministry/Authority Specific
Governance	Specific Technologies and New Trends	
Legal		

Table 5 - UAE Government Digital Maturity Pillars and Dimensions

5 Digital Maturity Model of Sri Lanka

5.1 Overall Objective

Facilitate government sector digital transformation through identifying the digital maturity and capability of government organizations.

5.2 Specific Objective

Develop a model to assess the level of digital maturity of the government organizations and publish the maturity status of GoSL on an annual basis.

5.3 Definitions

A ‘Digital Maturity Model’ can be defined as;

Name	Definition
Deloitte-TM Forum	Digital Maturity Model is an effective tool to provide guidelines for a clear path throughout the transformation journey.
Boston Consulting Group and Google	Digital Maturity Model (DMM) places the organization on a digital maturity scale through rigorous evaluation to help generate a model to follow and reach company goals moving forward. ¹
PWC	Enables organizations to assess their data maturity and highlights gaps and areas for improvement across a number of different data dimensions. ²

Table 6 - Definitions for Digital Maturity Model

5.4 GoSL Digital Maturity Model

The GoSL ‘Digital Maturity Model’ comprises of five (5) dimensions as discussed below.

1. Strategy
2. Operations
3. Technology and Data

¹ (Google, 2020)

² <https://digitalstore.pwc.com.sg/maturity-assessment>

4. Organization & Culture

5. Customer

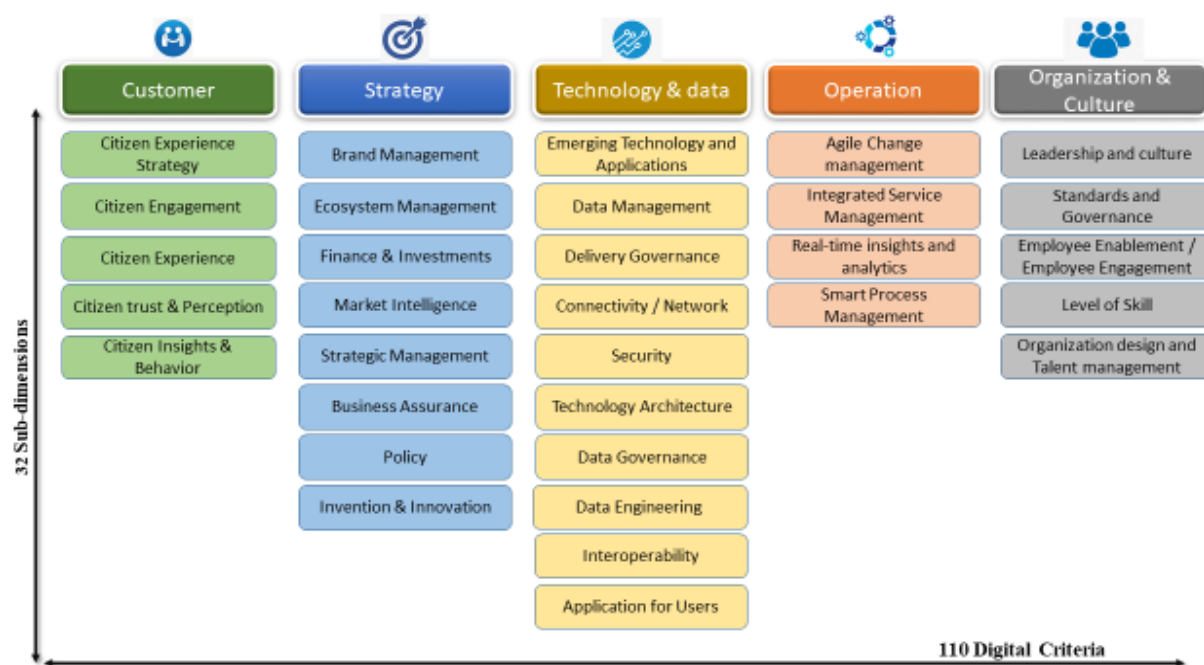


Figure 5-1: Digital Maturity Model for GoSL

Each dimension is further divided into sub-dimensions and each sub-dimension is split into three or five digital criteria. Accordingly, the model consists of 32 sub-dimensions and 110 digital criteria to understand the organizational maturity in terms of each dimension specified above (Refer Annexure 1 – Digital Maturity Model for the Government of Sri Lanka, Dimensions & Sub – Dimensions).

5.5 Maturity Levels of GoSL Digital Maturity Model

The GoSL digital maturity model identifies five (5) maturity levels as discussed below.

Level	Name	Definition
1	Initial	<ul style="list-style-type: none"> Disorganized and chaotic capability. Success depends on individual efforts and is not considered repeatable since capability is not sufficiently defined and documented to allow them to be replicated.

Level	Name	Definition
2	Repeatable	<ul style="list-style-type: none"> Basic capability techniques are established Success can be repeated since required capability is made, established, defined, and documented.
3	Defined	<ul style="list-style-type: none"> Standardized capability practices are established. Greater attention to documentation, standardization, and integration.
4	Managed	<ul style="list-style-type: none"> Organization monitors and controls its capability processes through data collection and analysis.
5	Optimizing	<ul style="list-style-type: none"> Capability is constantly getting improved through monitoring feedback from current practices and introducing innovative practices to better serve the organizational needs.

Table 7 - Maturity Levels of GoSL Digital Maturity Model

5.6 Benefits of the GoSL Model

Government organizations would be able to achieve the following key benefits through the successful adoption of the GoSL Digital Maturity Model.

1. Consistency
2. Cost Saving
3. Self–Improvement
4. Market Demand
5. Performance Demand
6. Process Improvements

5.6.1 Consistency

The model enables government organizations to organize their future plans on identified areas for improvements in a consistent manner with an improved prediction on the targeted milestones to achieve.

5.6.2 Cost Saving

Cost saving is another benefit that government organizations would achieve upon the successful deployment of the model. The maturity model identifies the instances where government organizations should bring-in the five assessment aspects enshrined in the DMM to public service which would lead to cost saving. For an example, the increased maturity in the five DMM domains would ensure cost saving, higher operational accuracy, minimization of the duplication of work etc.

5.6.3 Self-Improvement

The maturity model would enable the government organizations to explore the areas which need improvements to achieve enhanced performance. It would act as an indicator for the organizations to decide their priorities to elevate from its current maturity level to the expected level. This would naturally drive the organizations towards an effective and efficient public service which would differentiate it from rest of the government organizations.

5.6.4 Market Demand

Increased market demand is another benefit that government organizations could achieve from the model. It helps government organizations to adopt best practices and streamline their processes to cater end user expectations.

5.6.5 Performance Demand

Performance is another key area which gets benefitted from the model. The model would highlight the organizational processes, standards and procedures which need improvements for the organization to reach the expected performance level. It is important to note is that the DMM would not encourage government organizations to re-define the existing processes, standards and procedures yet; introduce value additions to shape what is existing for the betterment of organizational performance.

5.6.6 Process Improvements

The maturity model enables government organizations to standardize their processes, ensuring that the best practices are captured, shared, and adopted. The adoption of

best practices would enable government organizations to gain its optimal benefit for them as well as the citizens.

6 Assessment Methodology

The assessment mechanism of the model takes place under two (2) phases as specified below.

1. Preliminary Assessment
2. Deep Assessment

6.1 Preliminary Assessment

- The preliminary assessment is focused on evaluating the readiness of government organizations to apply the digital maturity model to their organization. Any government organization can perform the preliminary assessment and if it fulfills the expected entry requirements to conduct the ‘Deep Assessment’.
- It involves a questionnaire which is an information gathering exercise on the government organizations, which enables the implementation agency to decide on their capability to take-up the ‘Deep Assessment’.
- The decision on selecting the suitable government organizations for the ‘Deep Assessment’ is at the discretion of the implementation agency, in consideration of the results of the preliminary assessment.

6.2 Deep Assessment

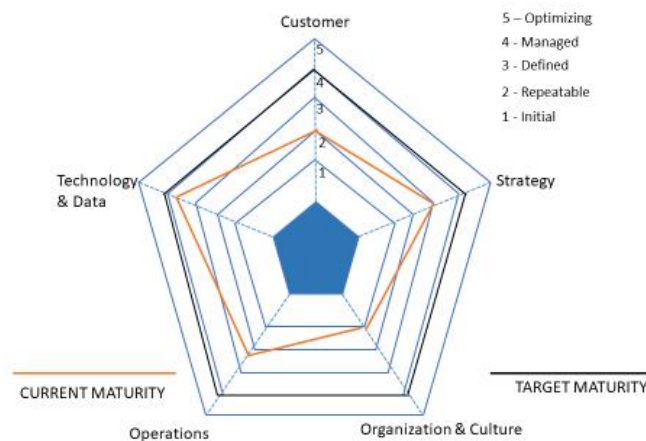
- The deep assessment is a detailed evaluation of the existing set-up within the qualified government organizations, from the preliminary assessment.
- Government organizations are assessed on the five maturity areas depicted in the DMM. The assessment is based on 110 criteria.
- The assessment is twofold where government organizations have to perform an online assessment via an interface provided by the implementation agency as well

as face an interview process (one-to-one interviews or group interviews) with a representative of the implementation agency by way of a ‘Q&A’ session.

- The implementation agency would validate the answers provided by the government organizations and assign a scoring scheme for every parameter in the assessment model.
- The individual scoring of the parameters under every sub-dimension would collectively contribute to the final grading of the respective key dimension.
- The implementation agency would organize the final grading of the five (5) key dimensions and present the current digital maturity level of the organization.

6.3 Targeted Improvements

The successful implementation of the DMM for GoSL would provide, government organizations, its results as shown in the following diagram; clearly demarcating the current maturity against the expected maturity in each sub-dimension.



As per the above diagram, the ‘Red’ colour line depicts the current maturity level whilst the ‘Black’ colour line depicts the expected maturity level.

Accordingly, in this scenario; the organization is very much in par with the expected maturity level in terms of ‘Technology and Data’ component. The ‘Strategy’ component has also reached a better maturity status yet, further improvements are needed. However, it is far behind the expected level in terms of ‘Organization and Culture’ component. And its ‘Customer’ and ‘Operations’ components are at a similar footing which needs further improvements to achieve the expected maturity level.

The results enable government organizations to decide on priority areas for improvements based on their need.

7 Outcomes of the DMM Assessment

The expected outcomes of the assessment are as follows.

- a. Introduce a mechanism which enables the government organizations to understand their present digital maturity level.
- b. Identify the gaps in the existing organizational set-up which delays or impacts the technology transformation.
- c. Enable the government organizations to expedite their digital transformation journey.

8 List of Contributors

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Dr. Athukorale is a Senior Lecturer and Director at the University of Colombo, School of Computing (UCSC) and conducts lectures for undergraduate and postgraduate programs of the university.

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Mr. Aminda James is a Senior Manager at ICTA working on ensuring equity and equality in education through digital mediation. He has over 15 years of experience in diverse fields including engineering, business development, and capacity building. He holds a Bachelor's Degree in Electrical Engineering and a Master's Degree in Business Administration.

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Mr. Anura de Alwis is a highly acclaimed business transformation strategist with a penchant for digital renovation, maximizing an organization's ROI and delivering augmented shareholder value who has over 30 years of experience in the corporate arena. Armed with experience in strategy, advisory, business transformation and governance functions across Asia Pacific, Europe and North America, he has served for many multinational corporations including Pearson, EY, Telstra, Hewlett Packard, Nokia, Tabcorp, British Telecom, Verizon, Singapore Power and Virtusa in his three-decade spanning career. As an expert in leading businesses towards sustainable transformation, he has spearheaded the growth of global organizations from start-ups to large enterprises, and has helped set-up three technology start-ups successfully, and inspired their growth. Having insights and an understanding on facing the challenges posed by a digital and dynamic economy, his vision for the next chapter of businesses is one of strategy, execution and innovation.

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Ms. Bhagya Kumarasinghe is an experienced Project Manager with a demonstrated history of working in the information technology and services in the Government sector. Skilled in Requirements Analysis, HTML, Project Coordination, JavaScript, and C#; she is a strong program and project management professional holding a BSc (IT) in Information Systems from Sri Lanka Institute of Information Technology.

- **Mr. Chamendra Perera**

Mr. Chamendra Perera has more than 18+ years of experience in the IT field and currently succeeding as a senior manager at ICTA. He is an MBA holder with special postgraduate qualifications in Project Management, whilst having a degree in Bachelor of Information Technology (BIT). Further, he is a qualified Scrum Master and has experience in Project Management, Development, Customer Support, Mentoring, Coaching, and many diverse soft skills pertaining to communication and teamwork in a multinational environment. He is a qualified Microsoft trainer and certified in Microsoft Software Development (MCSD). He also holds a Certificate in Web Mastering Currently (CIW) and is certified in Microsoft Project Management Specialized. He is a member of the Regional Scrum gathering review committee. He was a Microsoft Certified Trainer up to 2012.

- **Ms. Chandi Dharmarathne**

Ms. Chandi holds an MBA and a bachelor's degree in Business Administration and Economics. She has also attended executive education held by INSEAD business school. She joined Virtusa in 2013 and is currently serving as Vice President HR. She was previously heading MAS Holdings Group, Learning and Development function across all subsidiaries.

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In the past years she has also served on many boards, namely SLASSCOM, American Chamber of Commerce and Association of HR Professionals, Sri Lanka.

- **Mr. Chanuka Wattegama**

Mr. Chanuka Wattegama is a Policy Researcher, Academic, Business Consultant, Business Writer and by training an Engineer. He has over 26 years' experience under specialist and management levels in government, private sector and international non-government organizations. He has also been a visiting lecturer at the University of Colombo, Open University, and University of Moratuwa.

Chanuka heads the Policy Division at Information and Communication Technology Agency (ICTA) in Sri Lanka. He has worked as the Learning Solutions Manager at Distance Learning Center (A World Bank project now under Sri Lanka Government). His job responsibilities included designing new courses, marketing and conducting training courses based on video conferencing as well as face to face and liaise with resource persons. In addition, he also taught in some of the courses.

He has worked as an independent policy researcher and consultant for the World Bank, UNESCAP and UNDP. His expertise is in Telecom, Policy and Regulations, ICT for Development, Development Economics, Disaster Risk Reduction and Development Evaluation. Chanuka obtained his Master of Business Administration (MBA) Degree from the University of Colombo.

- **Mr. Dammika Premarathna**

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- **Mr. Duleep Priyasekara**

- **Mr. Hiranya Samarasekera**

Mr. Hiranya Samarasekera is the Principal Advisor to the Ministry of Technology and is the former CTO of the Government of Sri Lanka. He has over 22 years of experience in the IT industry and has served as a VP of Engineering at Sysco LABS (a Silicon Valley based company), which is a subsidiary of Sysco Corporation (NYSE:SSY) company.

Hiranya is currently a PhD Student at the University of Oslo (UiO), Norway researching on Information Systems and Digital Public Goods (DPGs). Further, he is learnings towards his Masters in Public Policy at the O. P. Jindal Global University (India). He is a B.Sc graduate from the Edith Cowan University (Australia) in Computer Science and Software Engineering and also holds an MBA from the same university. He is a certified Project Management Professional (PMI PMP).

- **Mr. Jayantha Fernando**

Mr. Jayantha Fernando has over 20 years of international experience in ICT Legal and Policy Issues. He has a specialized Master's Degree in Telecommunications and Internet Law (LL.M). He pioneered drafting several pieces of legislation impacting Digital Transformation, including Electronic Transactions, Digital & Mobile Payments, Cybercrime, Cyber Security and Data Protection. He led Sri Lanka's entry into the Budapest Cybercrime Convention (2015) and the UN Electronic Communications Convention (2015), both firsts in South Asia. At present, he holds the positions of the General Counsel of ICTA, founder Director of Sri Lanka CERT where he also served as its Chairman. Mr. Fernando was a Director and past Chairman of .LK Domain Name Registry, a former Commissioner of SEC Sri Lanka and a Director of Colombo Stock Exchange. He developed the legal framework for use of digital signatures for banking sector and as a member of the Joint SEC/CSE Committee for Digitization of Stock Exchange, drafted regulations to establish the country's first e-KYC. From February 2019-2022 he chaired the Data Protection Law Drafting Committee, leading a team of experts to draft the first privacy law enacted in South Asia, consequent to seven stakeholder consultations and public reviews. He also chaired the Cyber Security Law Committee. He is a British Chevening Scholar (2002) and an Eisenhower Fellow (2012).

▪ Mr. Kanchana Thudulgala

Mr. Kanchana Thudugala is currently working as the Chief Digital Government Officer at ICTA. He has more than 20 years of experience in private sector software outsourcing firms and also government sector. He is engaging in key Government Digital Initiatives and his key interests are on Digital Government, Technology, Innovation, and most of the time impacting people's lives; bringing in convenience to them. He holds an MBA in Information Technology, a Bachelor's Degree in Management Information Systems and he is also a certified Project Management Professional (PMP).

▪ Mr. Kasun Tharaka

Mr. Kasun Tharaka Wickramasuriya is a Senior Manager, Capacity Building at the Information and Communication Technology Agency of Sri Lanka (ICTA). He was the former Secretary of the Internet Society Sri Lanka Chapter. He is a highly competent ICT professional, transformation strategist, and community development expert with extensive experience in the ICT sector. He is having over 12 years of experience in the corporate and public sectors and has proven skills in Capacity Building, Digital Transformation, Digital Adoption & Inclusion, Internet Governance, Digital Economic Development, Community Development, Change Management, and Policy Development. He is one of the Co-Founder of Lanka School on Internet Governance (LKSIG) and a member of CSSL, IMSL, HISSL, and Sakura Science Club Japan.

▪ Mrs. Nadeesha Jayamaha

Mrs. Nadeesha Jayamaha is currently working as the Director of Human Resources at ICTA. She has over 15 years of professional experience in Human Resources Management in the IT and Insurance industries. She obtained her basic degree in Human Resource Management from the University of Sri Jayewardenapura, followed by a Master's Degree from the Post Graduate Institute of Management (PIM).

▪ Mr. Nishan Mendis

Mr. Nishan Mendis is a Partner at PwC Sri Lanka, where he serves as both the Technology Consulting Leader and the Chief Information Officer of the firm. He is also the Vice Chairman 2 of SLASSCOM, the national chamber for the IT/BPM industry in Sri Lanka, and has been associated with SLASSCOM since 2017, supporting Global Trade and Investments, serving as the Head of the Capacity Forum while also being a member of the Executive Committee of the Cyber Center of Excellence, and also the Advisory Committee of SLASSCOM's ESG initiative.

He brings with him over 24 years of experience in leading large scale Public & Private Sector projects. Nishan has been playing a prominent role in various nation led initiatives carried out by institutions such as SLASSCOM, ICTA, UGC etc. While he has been a prominent technology leader in Sri Lanka, his experience expands to other markets such as Maldives, Indonesia and Myanmar too. He has extensive experience in managing large scale, complex, critical technology projects and digital transformation initiatives that has been citizen centered for the purpose of uplifting the nation as a whole, and has worked with many state sector stakeholders, especially in the areas of program monitoring, process improvement and strengthening legislative framework to support new processes and systems.

▪ **Prof. Pradeep Abeygunawardhana**

Prof. Pradeep Abeygunawardhana did his Ordinary Level (O/L) and Advance Level (A/L) education from H/Kudabolana Maha Vidyalaya and H/Theraputta Maha Vidyalaya from Ambalantota, Sri Lanka in 1992 and 1995 respectively. He entered the University of Moratuwa in 1997 and graduated with a BSc. in Electrical Engineering in 2002.

He started his work at Jinasena Limited, Ekala, Jaala in May 2002 and then joined to Associated Motorways Nagoda, Kaluthara in October 2002 as an Assistant Electrical Engineer. Upon his skill and hard work, he was promoted to Electrical Engineer in October 2003.

He entered to Graduate School of Science and Technology of Keio University, Japan as a Master student in Spetember 2004. He obtained his Master and PhD degrees in robotics from Keio University in September 2006 and March 2010 respectively. His research area was non-linear control of two wheel manipulator.

Upon completing his higher studies, He joined Sri Lanka Institute of Information Technology as a senior lecturer (higher grade) in May 2010. He was appointed as a head of the research centre in Sri Lanka Institute of Information Technology in June 2011. He successfully organized the ROBOFEST 2010 and ROBOFEST 2011. Robofest is the premier robotics competition in Sri Lanka. He was the General chair of first national conference on technology and management in 2012 (NCTM2012). He was the member of editorial committee in 6th SLIIT symposium which was held in January 2011.

Since March 2012, he has been working as a postdoctoral researcher in Kagawa University, Japan.

- **Dr. Rohantha Rodrigo**

Dr. Rohantha Rodrigo is a CIO-level IT professional with +25 years of postdoctoral experience in the field of IT, with a proven track record in setting up and managing multi-discipline IT divisions and R&D units. He has wide knowledge in Computer Platforms, Networks & Communications, Data Centres, IT Security, Business Continuity, Data Analytics and the application of Machine Learning tools.

- **Ms. Samanthi Senanayake**

Ms. Samanthi Senanayake is a Senior Consultant attached to Sri Lanka Institute of Development Administration (SLIDA) and a Grade 1 officer in the Sri Lanka Administrative Service. During her 19 years in the public sector, her continuous involvement in e-Government and Digital Government initiatives are significant. She holds an MSc in Information Management from SLIIT, an MIS Degree from the University of Melbourne Australia and a Diploma in e-Government from PIM, and a BSc from the University of Kelaniya.

- **Mr. Sameera Jayawardana**

Mr. Sameera Jayawardana is a Digital Transformation Evangelist, Strategist, Adoption specialist, and Results driven Consultant with over 15 years of experience in digitization Portfolio with program and Project Management on digital technologies, Transformation Strategy & Policy, Digital education, HR Capacity Building and digital government transformation, who is currently working as the Associate Chief Digital Economy Officer as ICTA. He leads large-scale national-level digital transformation and capacity-building initiatives, including formulating and adopting the Digital Government Policy and Strategy of Sri Lanka from 2010 to 2014. He holds an MSc in Management, BSc in Information Systems, and he is also a certified Project Manager (PMP), and a Member of CSSL, PMI, ISO C Global, SLEVA, and also a Board Member of the National ICT Skills Council.

- **Mr. Thilina Dissanayake**

- **Mr. Thushara Suraweera**

- **Mr. Yasith Fernando**

Mr. Yasith Fernando has more than 10+ years of experience in IT field and currently succeeding as a Deputy General Manager at Cargills Ceylon. He is an MBA holder in Business Analytics and Big Data and also holds a Bachelor of Science in Business, Mathematics and Economics and Bachelor of Engineering. He worked on business challenges of CEOs, CFOs, CHROs and CMOs and broader board level challenges.

▪ **Dr. Windhya Rankothge**

Dr. Windhya Rankothge is a Senior Lecture at SLIIT who has almost 12+ years hands-on experience in IT fields. She is a PhD holder in Computer Systems Networking and Telecommunications and also an MSc holder in Computer Systems Networking and Telecommunications. Further she is certified with CCNA, DevNet Associate and CyberOps Associate in Cisco.

9 References

Forum, T., 2021. *Digital Transformation & Maturity*. [Online]
Available at: <https://www.tmforum.org/digital-transformation-maturity/>

Google, 2020. *An Introduction to Google's Digital Maturity Framework (DMM)*. [Online]
Available at: <https://apicconsulting.com/blog/an-introduction-to-googles-digital-maturity-framework-dmm/>
[Accessed 10 09 2022].

Government, N. Z., 2021. *Enterprise risk maturity*. [Online]
Available at: <https://www.digital.govt.nz/standards-and-guidance/governance/system-assurance/enterprise-risk-maturity/>
[Accessed 28 09 2022].

Government, U., 2022. *UAE digital government maturity model*. [Online]
Available at: <https://u.ae/en/about-the-uae/digital-uae/uae-digital-government-maturity-model>
[Accessed 25 09 2022].

10 Annexures

Annexure 1 – Digital Maturity Model for the Government of Sri Lanka, Dimensions & Sub – Dimensions 0

Dimension	Sub Dimension	Definition	Digital Criteria
Technology & Data	Emerging Technology and Applications	Emerging technologies are technologies whose development, practical applications, or both are still largely unrealized, such that they are figuratively emerging into prominence from a background of nonexistence or obscurity. (e.g Mobile solution, drone technologies, etc.)	1. Adopt open source and standardization
			2. Research and development / experimental / trial projects
			3. Commercialization/ diffusion
			4. Digital applications hosted in an open standardized cloud environment
			5. Framework for mobile applications and front-end development - for front-end digital projects
			6. Availability of Artificial Intelligent solution
	Data Management	Is an administrative process that includes acquiring, validating, storing, protecting, and processing required data to ensure the accessibility, reliability, and timeliness of the data for its users.	1. Authentication defined for data processing
			2. Availability of data for citizens
			3. Reliability of existing data and quality management
			4. Availability of Data in digital form
			5. Process of data authorization
	Delivery Governance	Delivery governance is a knowledge base of any service delivery organization's Operational processes and production support procedures	1. Dedicated and empowered think/build/run teams - practicing agile & DevOps methodologies
			2. Bi-modal IT operating model, fully described and road mapped
			3. Availability of Data protection act.
	Connectivity / Network	The quality, state, or capability of being connective or connected connectivity of a surface especially the ability to connect to or communicate with another computer or computer system.	1. Availability of well-designed infrastructure architecture
			2. ICT Operational management & Availability of demand management & capacity management practices
			3. Availability & reliability of connectivity
			4. Infrastructure security

Dimension	Sub Dimension	Definition	Digital Criteria
	Security	The growing cyber threats in the world require public administrations to focus on e-governance security measures. It is important to be aware of the threats posed to e-governance. The coordinating institution is required to organize the development, monitoring, and supervision of relevant information security rules and measures. Source (Maturity Model, Digital UK)	1. Follow security by design methodology for digital projects / Security by design.
			2. A periodic security audit by the third party (SL CERT)
			3. Internal Security
			4. Delegated Administration
	Technology Architecture	Technical Architecture (TA) is a form of IT architecture that is used to design computer systems. It involves the development of a technical blueprint with regard to the arrangement, interaction, and interdependence of all elements so that system-relevant requirements are met.	1. Services-oriented architecture (SOA) “tuned “for digital business
			2. Support both existing & future cloud solutions (including evolving elastic Cloud infrastructure), open APIs, micro-services, and platforms
			3. Enable adoption and contribution to the open-source communities
			4. Well-defined technology blueprint
			5. Architecture rigor
	Data Governance	Is the process of managing the availability, usability, integrity, and security of the data in enterprise systems, based on internal data standards and policies that also control data usage. Effective data governance ensures that data is consistent and trustworthy and doesn't get misused.	1. The process of managing the availability, usability, integrity, and security of the data
	Data Engineering	Is the aspect of data science that focuses on practical applications of data collection and analysis	1. Method of data collection
	Interoperability	The digitization of public services means that ministries and government agencies capture and process data in a machine-readable form. Digital transformation requires digital databases and data exchange between those. Source (Maturity Model, Digital UK)	1. Data information, services, and Data sharing based on the national-level classification
			2. Align with data standard or LIFE code & national data exchange
			3. Use standardized API tools for digital projects

Dimension	Sub Dimension	Definition	Digital Criteria
	Application for Users	Type of online applications, benefits for citizens and gov officials, and usage	1. Availability of single sign-on application
			2. Accessibility
Customer	Citizen Experience Strategy	A plan that guides the activities and resource allocation required to deliver intended experiences that meet or exceed Citizen expectations in accordance with the goals of the Gov Institute	1. Digital Experience Strategy
	Citizen Engagement	Citizen engagement is the means by which a Gov Institute creates a relationship with its Citizen base to foster brand loyalty and awareness. This can be accomplished via marketing campaigns, new content created for and posted to websites, and outreach via social media and mobile and wearable devices, among other methods.	1. 360 Degree Citizen View
			2. Digital Citizen Interaction
			3. Online Channel Support
			4. Social Media Support
			5. Contact Centre
			6. Service Centers / Stores
	Citizen Experience	Citizen experience is the internal and subjective response Citizens have to any direct or indirect contact with a Gov Institute	1. Omni Channel Experience Design
			2. Experience Data Enrichment
			3. Quality Management
			4. Digital Self Service
	Citizen trust & Perception	Citizen trust & Perception is the essential bond that underpins the relationships Gov Institutes have with the humans in their ecosystem— Citizens, workforce, and partners. It's nearly impossible to build successful, lasting human experiences and relationships without trust, Data Privacy focuses on the rights of individuals, the purpose of data collection and processing, privacy preferences, and the way institutes govern the personal data of data subjects.	1. Citizen Problem Management
			2. Digitized Information and Seamless info movement across multiple institutes
			3. Data Privacy
	Citizen Insights & Behaviour	A consumer is a person who identifies a need or desire, makes a purchase, and then disposes of the product in the consumption process. A typical consumer's utility is dependent on the consumption of agricultural and	1. Citizen Feedback Capture/ Intelligent Insights
			2. Citizen Experience Analysis

Dimension	Sub Dimension	Definition	Digital Criteria
		industrial goods, services, housing, and wealth (Grundey, 2009). No two of them are the same, as everyone is influenced by different internal and external factors which form consumer behavior.	
Operation	Agile Change management	Agile change management is a natural extension of Agile development methodologies including Scrum®, SAFe®, and AgilePM® which set out how best to create a 'production line' that frequently delivers tangible change in the form of new features and functionality. (Agility) Change the wording accordingly. List of assumptions. Make it more generalized. New: Agile change Management is the alignment of Agile delivery mechanisms that create change and change management activities that create and embed new ways of working.	1. The flexibility of doing the changes with minimum cost
			2. Frequency of adding new features
			3. Time is taken for the new changes and process of managing complex scenario
	Integrated Service Management	Integrated service management was created to give organizations a standardized method for implementing ITIL concepts quickly and easily. New: Integrated Service Management provides an ITIL-aligned Service Management framework with the simplicity of one touch point. Using digitization and automation, organizations can seamlessly integrate tools and processes across multiple technologies domains, environments, and agreed with third-party providers.	1. Automated digital performance, risk management, and escalation with mapped responsibilities
			2. Digital interface to support legal, regulatory, and compliance needs in real-time
			3. Automation to enforce business-technology alignment with reference to one digital architecture
	Real-time insights and analytics	Real-time analytics refers to the process of preparing and measuring data as soon as it enters the database	1. Frequency of generating new reports for analytics. (YF - Would be good to change this to "Availability of self-service BI")
			2. Real-time data integrity - How soon does DB update with processing data?
			3. Availability of custom reports (YF - Would be good to change this to "Process of generating custom reports")
		Data Governance Pillar. Check whether it is overlapping	4. Validity of real-time processed data

Dimension	Sub Dimension	Definition	Digital Criteria
	Smart Process Management	Smart Process Management: Automated Generation of. Adaptive Cases based on Intelligent Planning	1. Data-based cognitive intelligence to manage and control processes and process lifecycles
			2. How the functions are automated?
			3. Automated monitoring and reporting of process performance
Strategy	Brand Management	Brand management is a function of marketing that uses techniques to increase the perceived value of a product line or brand over time.	1. A well-defined digital branding strategy and digital branding guidelines across all digital channels + digital brand governance structure
			2. Formalized loyalty metrics across all relevant digital channels + An automated solution to collect and analyze customer insights in order to facilitate brand management across all relevant digital channels
	Ecosystem Management	Ecosystem management is an approach to natural resource management that aims to ensure the long-term sustainability and persistence of an ecosystem's function and services while meeting socioeconomic, political, and cultural needs. The further solution should be aligned with ICTA's national strategy. (Source: Delloite)	1. Capability to build and operate Multi-Sided Platform business models
			2. Ability to pursue and rapidly onboard participants and roles in the ecosystem to grow the overall 'network effect' and business value
			3. Ability to predict and manage relationships and accessibility
	Finance & Investments	“General financing and financial models for e-services need to be developed in order to ensure sustainability. For every e-governance solution, the total cost of ownership of the solution must be planned. The introduction of e-governance will have a cost, even if it will soon lead to savings in other respects, so it is essential that there is adequate provision for the necessary funds in a sustainable manner”. (Source: Delloite)	1. Availability of a pool of multi-year investment capital for digital transformation
			2. Investment in digital transformation is managed by leaders accountable for digital strategy
			3. Availability of funding for operational/ activities of digital transformation
			4. A formal feedback loop between past, current, and future digital transformation investments to facilitate the incorporation of

Dimension	Sub Dimension	Definition	Digital Criteria
			learnings into current and future investment activity
	Market Intelligence	the information or data that is derived by an organization from the market it operates in or wants to operate in, to help determine market segmentation, market penetration, market opportunity, and existing market metrics.	<ol style="list-style-type: none"> 1. Digital efforts (platforms, experience, portfolio) are aligned with the market, customer, and competitive intelligence 2. Well-defined processes and tools to perform competitive research (relevant SLAs defined) 3. Digital marketing to enable customer reach and increase sales
	Strategic Management	Strategic management is the ongoing planning, monitoring, analysis, and assessment of all necessities an organization needs to meet its goals and objectives. Changes in business environments will require organizations to constantly assess their strategies for success.	<ol style="list-style-type: none"> 1. A digital strategy with clear goals & objectives, aligned with the overall business objectives 2. Long-term digital roadmaps and work plans to achieve digital transformation 3. Availability of standardized analytics tools, reports, and KPIs to aid decision-making on digital initiatives
	Business Assurance	With ecosystem-based business becoming the norm, there is a multitude of revenue opportunities to seep through the cracks, whether intentionally (fraud) or not (leakage). As organizations transform to meet the needs of the connected digital economy, the business must be assured, future-proofed, and rooted across the operational processes, systems, and data of the organization and ecosystem. (Source: TM Forum)	<ol style="list-style-type: none"> 1. Mechanism of fund availability of future endeavor 2. The organization has defined a revenue model for the sustainability 3. The solution will directly or indirectly meet the needs of the connected digital economy
	Policy Invention & Innovation	Organizational policies or alignment with national policy The invention is about creating something new, while innovation introduces the concept of the “use” of an idea or method. An invention is usually a “thing”, while an innovation is usually an invention that	<ol style="list-style-type: none"> 1. The solution aligns with national policy 2. Availability of Digital policy in the organization 1. Invention & Innovation Process 2. Knowledge & Competency

Dimension	Sub Dimension	Definition	Digital Criteria
		causes a change in behavior or interactions	3. Organizational Support
Organization & Culture	Leadership and culture	<p>Leadership goes hand-in-hand with strategy formation, and most leaders understand the fundamentals. Culture, however, is a more elusive lever, because much of it is anchored in unspoken behaviors, mindsets, and social patterns</p> <p>Leadership to take decisions keeping in mind customer satisfaction and organizational mandate.</p>	1. Leaders understand the digital strategy and can sense disruption and respond proactively
			2. Collaborative and innovative decision-making over hierarchical decision making
			3. Well-defined digital roles and responsibilities. Accountability across all levels, top to bottom
			4. The enterprise-wide effort to develop practices to nurture digital maturity
			5. Leadership regularly communicates with the workforce on the digital strategy and progress and gathers formal feedback and ideas for improvement
			6. Workforce understands the digital transformation goals, Measurement criteria, and rewards mechanisms that are in place and are empowered to achieve them
			7. Workforce digitally focused– innovation, calculated risk-taking, and systematizing learning
	Standards and Governance	<p>Standards are the distilled wisdom of people with expertise in their subject matter and who know the needs of the organizations they represent – people such as manufacturers, sellers, buyers, customers, trade associations, users, or regulators.</p> <p>Governance has been defined to refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation.</p>	1. The solution aligns with the relevant standard and process
			2. Governance for Digital Transformation is defined, understood, and impacts the organization

Dimension	Sub Dimension	Definition	Digital Criteria
	Employee Enablement / Employee Engagement	Reskilling and upskilling workforces to make them more digitally savvy—another digital pivot—can pay dividends in the form of increased employee engagement. (Deloitte)	1. Digital appliances are ubiquitous to facilitate the workforce becoming more effective
			2. Comprehensive assets are available on digital platforms that can be utilized by the workforce
			3. Digital platforms for the workforce to facilitate organizational-wide knowledge management
			4. Ability to work together remotely, with access to all work-related content across all devices
			5. A proper employee evaluation for <ul style="list-style-type: none">i. Citizen satisfactionii. Organizational performance review
	Level of Skill	The measurement of the skills available in an organization to mature digitally	1. An organization's talent needs to be equipped to support the digitalization process
			2. Defined process in place to map skills with individual job profiles
			3. Continuous right skilling, Upskilling, reskilling, and cross-skilling
	Organization Design and Talent Management	Is a constant process that involves attracting and retaining high-quality employees, developing their skills, and continuously motivating them to improve their performance.	1. The Organizational Talent Management strategy is aligned with the digital strategy of the organization
			2. Digitalization of hire to retire process
3. “Open collaborative” work culture to align, plan and execute the digital strategy			
4. Learning organization with the ability to continually learn to meet & exceed digital objectives			