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# Digital Service Standard

**Ministry of Electronics & IT**  
**Government of India**

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## Change History

Sr. No.	Author	Version No.	Release Date	Change Details
1				
2				
3				

## Meta Data of the Standard

S. No.	Data elements	Values
1.	<b>Title</b>	<b>Digital Service Standard</b>
2.	<b>Title Alternative</b>	DSS
3.	<b>Document Identifier</b>	NeST-GDL-IS.04
4.	<b>Document Version, month, year of release</b>	Version 1.0 February- 2019
5.	<b>Present Status</b> <i>(Draft/Released/Withdrawn)</i>	Draft
6.	<b>Publisher</b>	Ministry of Electronics and Information Technology (MeitY), Government of India (GoI)
7.	<b>Date of Publishing</b>	February- 2019
8.	<b>Type of Standard Document</b> <i>(Standard/ Policy/ Technical/ Specification/ Best Practice /Guideline / Framework /Procedure)</i>	Standard
9.	<b>Enforcement Category</b> <i>(Mandatory / Recommended)</i>	Recommended
10.	<b>Creator</b> <i>(An entity primarily responsible for making the resource)</i>	NeST (STQC)
11.	<b>Contributor</b> <i>(An entity responsible for making contributions to the resource)</i>	1. MeitY 2. NIC 3. STQC
12.	<b>Brief Description</b>	
13.	<b>Target Audience</b> <i>(Who would be referring / using the Standard)</i>	
14.	<b>Owner of approved Standard</b>	MeitY, GoI
15.	<b>Subject</b> <i>(Major Area of Standardization)</i>	Digital Governance
16.	<b>Subject. Category</b> <i>(Sub Area within major area)</i>	Digital Services
17.	<b>Coverage. Spatial</b>	INDIA
18.	<b>Format</b> <i>(PDF/A at the time of release of final Standard)</i>	PDF
19.	<b>Language</b> <i>(To be translated in other Indian languages later)</i>	English
20.	<b>Copyrights</b>	MeitY
21.	<b>Source</b> <i>(Reference to the resource from which present resource is derived)</i>	Original
22.	<b>Relation</b> <i>(Relation with other e-Governance standards notified by MeitY)</i>	Complementary to IndEA Framework

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## Preface

We are living in a digital era. Digital interactions and digital way of life are the new norms. The switch from 'electronic' to 'digital' is not merely semantic. It is more fundamental and substantive. Digital world connotes not only a digital culture and a digital mind set, but a paradigm change in the way interactions – between humans and between humans and systems - are designed, developed and accomplished. Digital interactions of the new age, which result in exchange of information or delivery of services, have distinguishing attributes like personalization, task-orientation, UX-focus and intelligence.

Nations which have made large strides in realizing the benefits of e-Governance are now working towards Digital Governance. The concept of Government 4.0 is becoming mainstream alongside the ongoing work on Industry 4.0. Progressive Governments are conceptualizing a '*new breed of services*' which are very close to the current expectations of their constituents and provide them choice and control. There are no waiting periods, no information overloads or stress caused by paperwork in such a utopian world!

Transition of Governments to the new digital world calls for significant and conscious effort. A number of enablers have to be put in place, in the form of future-proof enterprise architectures, state-of-the art infrastructure, new capabilities, and above all, a Business Process Innovation accompanied by new statutes and data protection regulations. One small but critical step in this direction is the development and adoption of a Digital Service Standard (DSS). With exponential increase in the volume, variety and velocity of data, and the rapid advancement of new age technologies on the one hand, and the burgeoning expectations of the constituents on the other, Governments do not have the 'luxury' of implementing digital projects independently. The need of the hour is a standards-based design and development of digital services and a well-orchestrated migration of the existing e-Systems to the digital. Widespread adoption of DSS is critical for realizing the aspiration of India to be a trillion-dollar digital economy by 2022.

The mandate of the Working Group on Digital Service Standard is to suggest a set of inter-related standards and principles that apply to all aspects of any digital service, through its life-cycle, namely, Defining, Realizing, Measuring and Governing Digital Services. The Working Group has surveyed international experiences in this area, conducted detailed deliberations and has come up with a holistic framework of the Digital Service Standard. DSS is a set of over 170 standards, principles and guidelines organized according to a rational taxonomy, easy to be comprehended and implemented by the eco-system.

The DSS framework can be applied with benefit to a variety of situations like large green-field digital projects, legacy systems that need to migrate to the digital era, discrete services and portfolio of services. DSS provides not only the standards, principles and guidelines to be followed, but also the framework to measure the performance of digital services and to assess their impact, and also a set of strategies to overcome the challenges in the adoption of DSS.

While the benefits of promoting Digital Services are obvious and beyond debate, we have to be simultaneously conscious of the need to protect the personal information and the privacy

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of individuals in their interactions with the digital systems. With this in view, DSS incorporates a set of principles for protection of privacy and the personal information of individuals.

I acknowledge the significant contribution of the members of the Working Group in the creation of an innovative framework of DSS for a speedy realization of Digital India, in letter and spirit.

**J Satyanarayana**

Chairman

Working Group on DSS

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## Acknowledgements

A working group constituted by STQC, under the chairmanship of Shri J. Satyanarayana, Chairman (part-time), UIDAI, Government of India and Advisor to the Government of Andhra Pradesh, developed the Digital Service Standard during Nov 2017 - March 2018. The group represented an eclectic collection of experts and professionals. Following were the contributors involved in the development of Digital Service Standard:

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# 1. Digital Service Standard

## 1.1 The Context

Currently we see the phenomenon whereby the countries already high on the UN e-Government Development Index are moving from e-Governance to Digital Governance. Such a movement is triggered and fuelled by a few factors and circumstances such as the following:

- The rapid change in the technology landscape is leading to a quick obsolescence of the strategies, architectures and designs of the e-Governance era. Technologies like the Cloud, Data Analytics and IoT have already become mainstream. New technologies like the Artificial Intelligence and Block-chain are beckoning the organizations with the promise of a quantum leap in aligning business services more closely to the user needs and expectations.
- The computing power in the hands of the citizens is rising at a good pace, with the proliferation of smart phones and mobile devices. The prospects of wearable devices is going to further enlarge the ‘ask’ of the citizen from all service organizations - private and government alike.
- Open technologies coupled with innovation are expanding the number and nature of services that can be delivered digitally.
- The digital mindset of the millennials is expecting the institutionalization of cross-functional collaboration for provision of integrated services, besides creation of ‘virtual offices’ with flat or no hierarchies.
- Governments are compelled to think of establishing **Government 4.0** on the lines of Industry 4.0.

The above circumstances have created a situation in which a very serious thinking has to be applied to the number and nature of digital services, the way they are designed, delivered, measured and governed.

## 1.2 The need for Digital Service Standard

As aforesaid, we see an emerging need for the Governments to review, rationalize and enhance the existing e-Services, besides creating a new breed of digital services with a high ‘speed-to-market’. The digital services are qualitatively different from the e-Services not only in terms of the new-age design paradigm but also in their goal to create new value at the frontiers, supported by a whole set of new processes. The digital service regime calls for entirely new capabilities both in the service provider community and the consumer community.

A variety of new institutional mechanisms, policy instruments and implementation methods have to be put in place if the promise of the Digital Service regime is to be realized. Among these is the need for setting a set of Standards for defining, designing, developing, delivering and measuring the value created by the digital services. In the absence of such a Standard, to be known as the **Digital Service Standard or DSS**, it is likely that a plethora of un-coordinated efforts would ensue to produce a sub-optimal outcome.



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More specifically, the following objectives are sought to be achieved by the DSS:

- a. Adoption of DSS would ensure **uniformity** and **consistency** in defining, realizing and measuring of digital services by and across organizations.
- b. DSS would help **future-proof** the digital services in technology and platform independent way.
- c. Adoption of DSS increases the **inclusivity and accessibility** of digital services, and protecting the PII (Personally Identifiable Information) in transit, storage and processing.
- d. Above all, following the DSS standards and principles creates an enhanced **User Experience (UX)** in all the digital interactions in unambiguous terms with necessary and sufficient information exchange.

Creation of a wide awareness of DSS is key to realizing the above benefits.

### 1.3 The Vision of Digital Service Standard

DSS is being developed as a national standard in the space of digital governance, to be adopted by all the ministries, departments and organizations of the Central and State Governments and local bodies in India. It is necessary for such an initiative to create a Vision and evolve the Standard towards fulfilment of that vision.

The Vision of the Digital Service Standard is captured in the following Vision Statement:

*“The **Vision** of the Digital Service Standard is to define a National Standard, the adoption of which ensures **Uniformity, Consistency, Comprehensiveness and Excellence** in the **Definition, Realization, Measurement and Governance** of Digital Services.”*

The Vision Statement seeks to capture the intent of DSS to establish a set of standards and principles to be followed throughout the life cycle of a digital service, besides emphasizing the most important attributes of a good digital service. Realization of the vision depends, to a large extent, on the preciseness of defining the attributes and requirements of a digital service.

In the context of DSS, it is essential to define the terms Government Service, e- Service, Digital Service and Integrated Digital Service.

*A **Government Service** is one that is provided by a government agency to its constituents, including its employees and other government agencies, in any form of delivery.*

*An **e-Service** refers to application of Information and Communication Technology (ICT) for delivering government services, broadly categorized as Government-to-Citizen (G2C), Government-to-Business (G2B), Government-to-Government (G2G) and Government-to-Employees (G2E).*

***Digital Services** are Whole-of-Government (WoG) services built on highly secure, reliable, scalable, replicable and open technologies of the new age, seamlessly interfacing with a host*

of delivery channels, and are intelligent. and, most often, leveraging the power of API's for interoperating with the rest of the eco-system.

An **Integrated Digital Service** is defined as the delivery of digital information or transactional service relating to multiple departments through a single interface/ device, basing on a single request made by the user.

The **Table 1.1** brings out the essential distinction between an e-Service and a Digital Service.

Attribute	e-Service	Digital Service
<b>Maturity</b>	Service Request and Service Delivery are electronic.	The interaction is digital end-to-end
<b>Channel</b>	Predominantly web	All devices/ channels, predominantly mobile
<b>UX</b>	Generic / Common to all	<ul style="list-style-type: none"> <li>• Personalized, Localized</li> <li>• AI-driven</li> </ul>
<b>Integration</b>	Limited to an Application	Enterprise-wide integration
<b>Architecture</b>	Service Oriented Architecture	<ul style="list-style-type: none"> <li>☐ Enterprise Architecture</li> <li>☐ Open API-based</li> <li>☐ Micro-Services Architecture</li> </ul>
<b>Technologies</b>	Internet	SMACI (Social, Mobile, Analytics, Cloud & IoT)
<b>Scalability</b>	Finite	Infinite
<b>Interoperability</b>	Needs conscious effort	By default
<b>Dev Method</b>	Waterfall, Agile, DevOps	Agile, DevOps

**Table 1.1 Difference between e-Service and Digital Service**

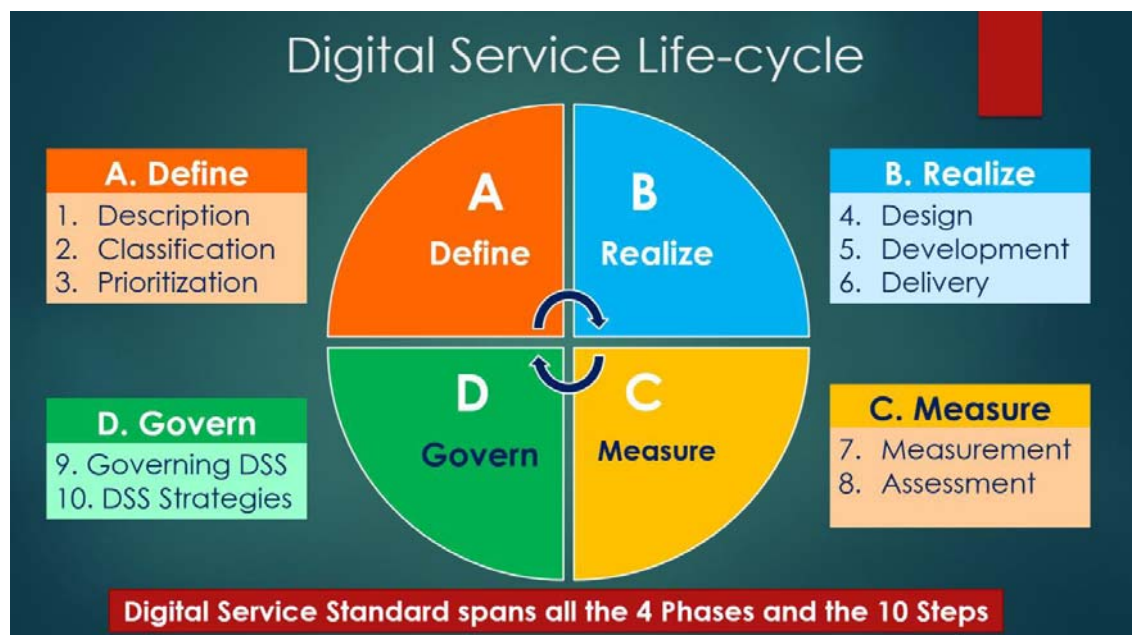
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## 1.4 Framework of Digital Service Standard

The scope of digital services is wide and varied, as reflected in the Vision Statement. The digital services range from routine transactions to services involving complex backend processes. As such, the proposed DSS has to be founded on a high-level Framework, in which all the dimensions, aspects and attributes of the standard would fit.

For the purposes of DSS framework, it is felt most appropriate to adopt the life-cycle of a typical digital service. This ensures that all the dimensions, aspects and attributes are covered comprehensively, precisely, clearly and consistently.

**Figure 1.1** depicts the 4-Phase life-cycle of a typical digital service.



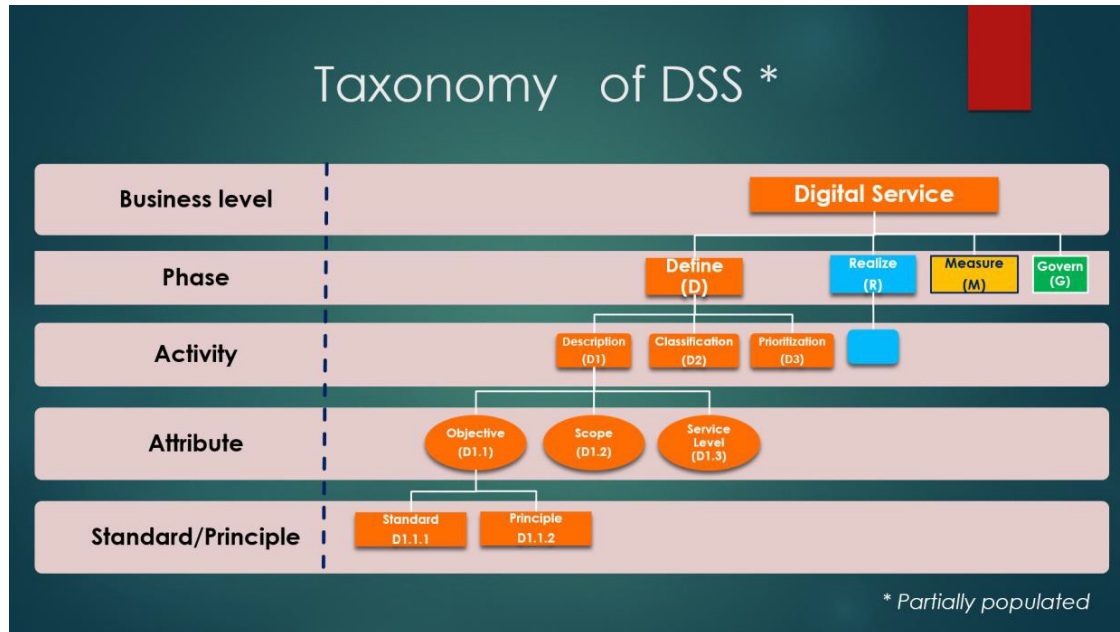
**Figure 1.1 Life-cycle of a Digital Service**

The DSS framework shown in **Figure 1.1** conforms to the Vision of DSS in so far as

- ☐ It captures all the 4 phases of the digital service life-cycle and high-level activities required to be undertaken in providing an effective digital service.
- ☐ Being at a high-level, it gives the flexibility of extension at the lower levels, namely, attributes and the related standards and principles (*not depicted in Figure 1.1*)
- ☐ It addresses the objectives set forth in section 1.2.
- ☐ It facilitates a **canonical design** and a **cyclical evolution** of any digital service.

## 1.5 Taxonomy of Digital Service Standard

The merit and usability of a Standard depends largely on the intuitive system of classification and depiction of its components and elements. With this in view, the Taxonomy shown in **Figure 1.2** is adopted to describe the various levels at which the DSS operates.



**Figure 1.2 Taxonomy of DSS**

A concise explanation on the Taxonomy of DSS is provided below:

- a. DSS is designed at 5 levels, namely, the Business Level, Phase Level, Activity Level, Attribute Level and finally, the Standard/ Principle Level. Such a 5-tier structure enables expansibility at any level, and enhancement of any component without impacting the entire DSS.
  - i. **Business Level** is relevant to the top management, in identifying the goals they would like to pursue, prioritize, and get a feedback on the status of various digital services and the impact they make on the citizens/ customers.
  - ii. **Phase level** aligns broadly with the SDLC and goes beyond the same by covering aspects of measurement and governance of digital services.
  - iii. **Activity Level** connotes the different tasks that the concerned teams need to undertake to fulfill the responsibility in each Phase.
  - iv. **Attribute Level** identifies the actual area, topic, theme or component of the digital service life-cycle on which a Standard or Principle has to be specified.
  - v. **The Standard/Principle** layer holds all the Standards, Principles and Guidelines comprising the DSS.
- b. Adoption of a color code enables an easy visual comprehension of DSS or any standard/ principle comprising the same. DSS consistently adopts **Orange** for the **Definition Phase**, **Blue** for the **Realization Phase**, **Gold** for the **Measurement Phase** and **Green** for the **Governance Phase**.

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- c. **Business Level** and **Phases** are shown in rectangular boxes. **Activities and Attributes** are shown in rounded rectangular boxes. **Standards/ Principles** are shown in oval boxes.
  - d. Very often, the Business Team, the Design and Development Team, the Assessment / Measurement team and the ‘Governance Team’ are distinct in any large organization. The 4-fold division in the DSS Taxonomy, enables the teams to deal with the Standards and Principles concerning their area of work.

The Taxonomy of DSS in its entirety is not depicted in this section for reasons of readability. However, the related components of the Taxonomy are depicted in detail in the respective Chapter of DSS dealing with a specific Phase.

## 1.6 Standards, Principles and Guidelines

DSS has been termed as a ‘*Standard*’ to connote the idea that it has to be adopted wholly or substantially as a package, while designing greenfield digital service projects or migrating the existing e-Governance systems to a digital eco-system. However, in reality, DSS is a mix of **Standards, Principles** and **Guidelines**. It is necessary here to differentiate the terms and explain the manner in which each of these 3 terms has been used in this document.

**Standard:** A ‘Standard’ is a prescribed set of rules, conditions, or requirements established by consensus and approved through a formal process by a recognised body that provides for common and repeated use, aimed at achieving a degree of order and commonality in the given context. Compliance to a standard is ascertained through a formal process, usually an audit.

In this document, a standard is predicated with the term **MUST**, which implies mandatory compliance and an independent validation and verification of the compliance.

**Principle:** A ‘Principle’ is a proposition that serves as a foundation for a system of belief and guides behaviour in a certain preferred manner. Principles are based on common underlying experiences that help in decision making. A principle does not necessarily involve an independent validation and verification process.

In this document, a principle is predicated with the term **SHOULD**, which implies that principles are to be adhered to and any deviation or non-adherence is to be supported with an exception mechanism.

**Guideline:** A ‘Guideline’ is a general piece of advice, recommendation, suggestion or direction on how something can be done or what something could be. In this document, a guideline is predicated with the term **MAY**, which implies that guidelines are inputs from best practices that generally work, but adherence to them is contextual. In other words, following a guideline should be checked for appropriateness in a specific context.

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## 1.7 Numbering & Keyword Conventions followed in DSS

For the purpose of consistency and ease of cross-reference, the following numbering and Keyword conventions are followed in DSS.

1. All sections in each Chapter are numbered at 3 levels.
2. The Digital Service Standards and Principles are coded alphanumerically at a maximum of 4 Levels (barring the business level), to denote 4 out of the 5 levels depicted in the Taxonomy of DSS.
3. All Standards/Principles/Guidelines relating to ‘**Define**’ Phase start with **D** and are succeeded by a digit for each of the lower levels. For instance, the code **D1** denotes the activity of ‘**Description**’ in the ‘**Define**’ Phase. The code D1.1 denotes ‘**Objective**’, which is an ‘**Attribute**’ of ‘**Description**’. The actual Standard or Principle relating to the Objective of a Digital Service is denoted by D1.1.1.
4. Likewise, all standards and principles relating to Realization Phase start with **R**, and those relating to Measurement and Governance start with **M** and **G** respectively.
5. The Keywords **MUST**, **SHOULD** and **MAY** are used consistently to denote whether an item of specification is **Mandatory**, **Desirable** or **Optional** respectively.

## 1.8 Chapter Scheme

The Chapters that follow deal with the distinct stages of the Digital Service Life-Cycle.

Chapter 2 deals with all aspects relating to **Defining a Digital Service**, including its description, classification and prioritization.

Chapter 3 deals with all aspects relating to **Realizing a Digital Service**, including its design, development and delivery.

Chapter 4 deals with all aspects relating to **Measuring a Digital Service**, including the periodic assessment of the impact of a digital service or a portfolio of digital services.

Chapter 5 deals with all aspects relating to **Governing DSS** and **Strategies** for successfully introducing a Digital Service regime.

## 1.9 Intended Audience

This DSS document is useful to the following categories of users:

- i. Top Management – for setting goals for a portfolio of digital services to realize the vision of the organization and/ or the SDG outcomes.
- ii. Architects of Digital Government – to enable designing Architecture in consonance with the **IndEA Framework**<sup>[1]</sup>, as the DSS is developed in line with and as a complement to the IndEA Framework.
- iii. UX designers, assigned with the responsibilities of producing a pleasant digital experience.
- iv. UI designers, who need to translate the defined UX into the interface on the user device.
- v. System Integrators and Developers designing applications for the public sector.
- vi. Academic researchers working in the area of digital governance.
- vii. Auditors of Information Systems – from the point of compliance of the digital services to the DSS.



## 2. Defining Digital Service

### 2.1 Objectives of the Definition Phase

Defining a digital service is the first phase of the 4-phase (Define, Realize, Measure and Govern) life-cycle approach adopted by DSS. The ‘Definition’ phase covers the following activities:

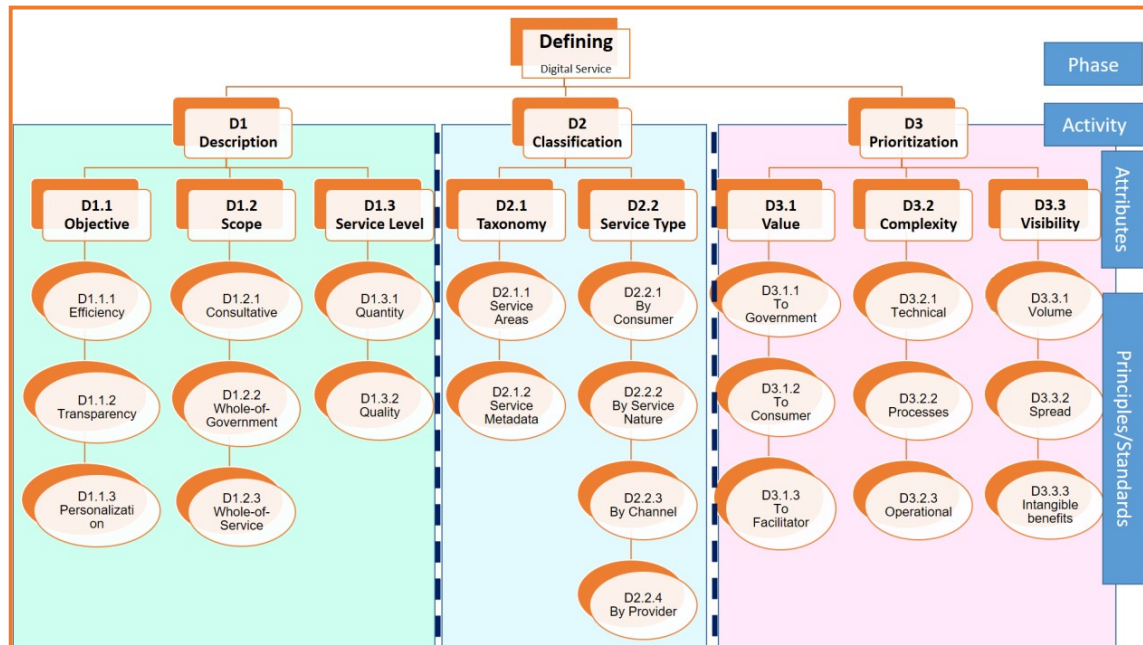
- **Description** of a digital service;
- **Classification** of a digital service; and
- **Prioritization** of the digital services

This chapter aims to:

- a. Define the taxonomy of the digital service
- b. Describe and detail the standards/principles for all the attributes identified

### 2.2 Framework for ‘Defining Digital Service’

The framework for “Defining Digital Service” is shown in **Figure 2.1**.



**Fig 2.1: Framework for defining a Digital Service**

**Description** of a digital service specifies the benefit of launching the same and defines its attributes in terms of ‘Why’, ‘What’ and ‘How’. The three attributes of ‘Description’ of a service are listed below:

- **Objective** of the service in terms of envisaged goals such as efficiency improvement, transparency and personalization.
- **Scope** of the service covering the consultative design, integration into a Whole-of-Government eco-system and offering Whole-of-Service.
- **Service Level**, including both the qualitative, quantitative aspects.

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**Classification** of a digital service SHOULD be done based on 2 Attributes, namely, **Taxonomy** and **Service Type**.

- **Taxonomy** covers the Service Areas, and Service Metadata
- **Service Type** prescribes classification of DS's by the target Stakeholder Group (citizens, businesses), Nature of Service (Regulatory, Lifestyle and Wellness), Channel of service delivery (Web, Mobile, Assisted) and Service Provider.

**Prioritization** lays down the principles for a phased implementation of the digital services. The 'attributes' of prioritization are:

- a. **Value** provided by the DS to government, consumer and service provider.
- b. **Complexity of the DS** in terms of technical, operational and process complexities.
- c. **Visibility of DS** in terms of volume, spread and intangible benefits.

## Standards, Principles and Guidelines for Defining Digital Services

### 2.3 DESCRIPTION of Digital Service (D1)

#### 2.3.1 Defining the Objective of a Digital Service (D1.1)

##### D1.1.1 Efficiency

1. The objective of a Digital Service **MUST** be derived from the Business and Architecture Goals. Business Goals for a Government are fundamentally derivatives of the political manifestos and of the Sustainable Development Goals (SDGs). (<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>). Architecture Goals are in the form of creating sustainable foundations and building blocks in the areas of technology, process and people.
2. The objective SHOULD aim to **maximize the efficiency** through integrated online delivery in a boundary less manner across stakeholder groups.
3. The objective SHOULD indicate the area(s) for **process re-engineering** to eliminate non-value-adds and to make the services citizen-centric /business-centric
4. The objective SHOULD be **outcome-oriented**.

##### D1.1.2 Transparency

1. Eligibility and/ or acceptance criteria, **MUST** be defined for each Digital Service.
2. The charge/ fees to be paid by the end user and the service levels **MUST** be published on the same page through which the service is accessed.
3. The result of processing the request **MUST** be notified to the applicant/ user along with the reasons for rejections in case the request does not meet the defined criteria.
4. The digital service SHOULD aim to achieve transparency in the interactions with users by making status of relevant steps in the process visible to the user.



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### D 1.1.3 Personalization

1. The digital services **SHOULD** cover all possible strata of stakeholder groups and the access channels, notifications and communications be designed accordingly.
2. The digital service **SHOULD** be designed around life events.
3. The description of a digital service **SHOULD** integrate self-enabled and personalized service provision; enable bespoke services, alerts based on earlier history of interactions and **MAY** include adaptive presentation and user interface.
4. The Digital Service **MAY** be personalized to the specific user, to the extent permissible and required for a more specific targeting of the user needs.

### 2.3.2 Defining the Scope of a Digital Service (D1.2)

#### D1.2.1 Consultative

Digital Services **MUST** be designed taking into consideration the precise needs of the targeted users. Design Thinking approach **MAY** be adopted for the identification and scoping of the Digital Services; and *if so*, the following principles of Design Thinking **SHOULD** be adopted.

1. **Empathize**: The organization **SHOULD** learn about their service users. It **SHOULD** go to the field and construct a **citizen service journey map** for the service it plans to design.
2. **Define Views**: Digital Service **MUST** be designed from the viewpoint of the citizen/business user and **NOT** from the view point of the Government or the developer. Based on the user journey, specific points of view on user needs **SHOULD** be developed. Focus **SHOULD** not only be on the needs of *categories* of users, but on *individual* needs. The experience of the extreme set of users **SHOULD** be considered.
3. **Ideate**: Creative solutions meeting the user needs **SHOULD** be evolved through brainstorming.
4. **Prototype**: Prototype of the digital service **SHOULD** be developed detailing the solution.
5. **Test**: The interfaces of the proposed solution **MAY** be tested involving the end-users. This may lead back to “Ideate” step and rework on the prototype, and if required go to “Test”.

The Digital Services *conceptualized* through the Design Thinking methodology, will need to be detailed and fine-grained to pave the way for the development of the service (say, as a software application or app). This is typically done through the *User Need Analysis* prescribed as a part of the Realize Phase, and dealt with in section **R1.1.1 in Chapter 3**.

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## D1.2.2 Whole-of-Government Approach

### 1. Connected Government

1. Digital Services **MAY** be provided to the citizens through a seamless view of **ONE-Government** or joined-up-government.
2. **Single-sign-on** **SHOULD** be provided in accessing a portfolio of related services.
3. Enterprise Architecture (EA), **SHOULD** be designed following an EA Framework such as the India Enterprise Architecture (IndEA) following a Whole-of-Government approach. All the departments and agencies of the Government **SHOULD** move towards connected government, by conforming to such Enterprise Architecture.
4. Baseline conditions which allow for collaboration across and between departments **SHOULD** be defined so that the ensuing system is holistic, synergistic and coordinated in the delivery of public services.

### 2. Back-office re-engineering and integration

1. Back-office processes **MUST** be re-engineered and digitized so as to support the objectives of the Digital Service.
2. The Integration Reference Model defined by **IndEA Framework** **SHOULD** be followed for ensuring the inter-operability of different back-end processes of the same or different agencies.

## D 1.2.3 Whole-of-Service

The scope of the Digital Service **MUST** be defined **on an end-to-end basis** and NOT in a fragmented manner, necessitating multiple visits to multiple web-sites, or physical locations. The following principles **MUST** be adopted to realize Whole-of-Service experience.

1. The scope of the service **MUST** address pre-service, during-service and post-service needs to construct the whole-of-citizen-service. This **MAY** include information or transaction sub-services as part of the overall service.
2. The digital services **SHOULD** be listed in a manner and language understandable by different strata of users.

### 2.3.3 Defining the Service Levels

Defining **Service Levels** for the digital services is one of the most crucial aspects of the Digital Service Standard. Once properly defined, Service Levels enable measurement and assessment, besides setting the expectations of the users correctly and unambiguously.

1. Service Levels **MUST** be defined both in terms of Quantity and Quality.

## D1.3.1 Quantitative Service Levels

1. Service Level **MUST** reflect the improvement in the Operational Efficiency in the delivery of a digital service.
2. Operational Efficiencies **MUST** be defined in terms of cost and **Turn-Around-Time (TAT)** to avail the service.
3. Performance of the Digital Service **SHOULD** be benchmarked against the similar best-in-class digital services for continuous improvement and to maintain world-class levels of performance.

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### D2.1.2 Qualitative Service Levels

1. The service provider **SHOULD** ensure that a clear description of its purpose, objectives and mode of service delivery is publicly available.
2. **Quality of Service** **SHOULD** be defined so as to be assessable in terms of the degree to which the delivery of Service is Courteous (understanding, empathetic, respectful, listening, calm), Accurate (relevant, compliant, consistent, factually correct), Responsive (dependable, reliable, timely, responsible), and Effective (facilitate, follow through, value adding, resolving, realistic).

## 2.4 Classification of Digital Services (D2)

### D2.1 Taxonomy

Use of a **standard Taxonomy of Digital Services across the Government** makes it easier for users to discover any service, besides facilitating integration of related services and avoiding duplication. The taxonomy is primarily from the citizen perspective, irrespective of the agency providing the same, namely, central or state government ministries or departments. The taxonomy should give a general classification of services and be easily adoptable by any government department. Services may be classified as per areas and types. Services may fall under multiple classification categories.

DSS defines Taxonomy along 2 dimensions, namely, **Service Areas** and **Service Metadata**. Providing a Code Number to each Area and Sub-area of Digital Services in terms of Service Areas facilitates better visibility, accessibility and comparison. Reference **MAY** also be made to the **ISO 25964-1:2011**, and **ISO 25964-2:2013(en)** Information and Documentation — Thesauri and interoperability with other vocabularies.

#### D2.1.1 Service Areas

1. Digital Services **SHOULD** be classified as per **Service Areas** under a structured taxonomy to benefit citizens using the portal and help enhance recognition in international rankings. The taxonomy adopted by Government of India for National Government Services Portal <https://services.india.gov.in> **SHOULD** be adopted for this purpose. This includes 15 areas at first level. **Annexure-A** shows the recommended Taxonomy.
2. An effective **second level taxonomy** **MAY** be adopted as an important process that brings together content from multiple government agencies whilst at the same time uses language that reflects users' needs and ways of thinking rather than internal government structures and language.

#### D2.1.2 Service Metadata

1. Service Metadata specified in **Annexure-B** **MUST** be used to describe the content, context and provenance of Digital services in a standardized and structured manner, typically describing the purpose, origin, temporal characteristics, geographic location, authorship, access conditions and terms of use of a Service. Annexure-B is based on the widely accepted Dublin Core Metadata standards, referenced at <http://dublincore.org/about/>.

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2. The Metadata Standards defined by the Govt of India and published at **egovstandards.gov.in**, **MUST** be followed while creating Metadata for any digital project.
  3. Metadata for online service catalogues or discovery portals **SHOULD** be structured to international standards or schemes, consisting of mandatory and optional elements, and **SHOULD** rely on using controlled vocabularies and lexicons.

## D2.2 Service Type

The purpose of specifying Service Type is to make an easy and intelligible classification of Digital Services by the provider and consumer of each service like the Government, Business and Citizen Services. It includes classification by the nature of service, channel and provider of the service.

### D2.2.1 Classification by Nature of Service

Digital Services **MAY** be classified according to the purpose they serve, namely, **Direct Services, Indirect (General) Services, Obligations**. A brief description of these 3 categories is given below:

1. **Direct services:** For direct benefit of an individual based on specific need e.g. Farmer availing a Loan.
2. **Indirect (General) services:** For general benefit of the community based on shared needs e.g. Information Services.
3. **Obligations:** Placed on certain individuals for indirect benefit of the community e.g. Taxes and Licenses.

### D2.2.2 Classification by Consumer Group

The digital services **MAY** be classified by the Consumer Group as defined below, to bring in elements of consumer centricity:

1. **G2C:** Government-to-Citizen Services for regulatory, compliance and entitlement purposes.
2. **G2B:** Government-to-Business services for statutory purposes like licensing, taxation, labor, safety, ease of doing business.
3. **G2G:** Government-to-Government services, which include intra- and inter-departmental communications, workflows and reporting requirements.

### D2.2.3 Classification by Channel

The services **MAY** be classified according to the channels like the web, kiosk, mobile app and social media, including multi-channel delivery.

### D2.2.4 Classification according to Service Provider

In the context of emergence of public and private service providers, digital services **MAY** be classified by the categories of service providers.

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## 2.5 Prioritization of Digital Services (D3)

Given the multiple constraints in implementing DSS, the large numbers of Digital Services to be rolled out, and, most importantly, the limitations on resources – human and financial - it is expedient and prudent to prioritize the implementation of services with a view to derive the maximum benefit out of the available resources. Such a prioritization **SHOULD** be undertaken along 3 principal dimensions, namely, **Value of the Digital Service** to the stakeholders, **Complexity** of implementation and **Visibility** of the Service. The Principles for such a Prioritization are defined below.

### D3.1 Value of the Digital Service

#### D3.1.1 Value to Government

1. The measures of value to government such as increased revenue, reduced cost, increased transaction volumes and intangible benefits **SHOULD** be clearly identified and quantified. The basis of **high, medium and low value** to government **SHOULD** be clearly defined.
2. The identification of measures **MAY** be based on the concept of Government as an **enterprise of enterprises** and the assessment of priority of a service or group of services **MAY** be done based on the governance vision, priorities and objectives defined by the Government.
3. The measures of value **SHOULD** span the entire value chain. 3 types of Key Performance Indicators (KPIs) **MAY** be adopted, namely, **output, outcome and economy**. Output KPIs are used to assess the efficiency of a service, outcome KPIs to assess the quality of service, and economy KPIs to measure the cost-effectiveness of the service.
4. Services with high value both to Government and the consumers **SHOULD** be prioritized first for digitization. Services with high value to consumers and low value to government **SHOULD** be prioritized next.

#### D3.1.2 Value to Consumer

1. The measures of value to consumers such as reduced processing time, reduction in cost **SHOULD** be identified and quantified. The measures **SHOULD** be linked to objectives of Government driven by the Sustainable Development Goals (SDG).
2. The basis of high, medium and low value to consumers **SHOULD** be clearly defined.

#### D3.1.3 Value to Service Providers

1. The measures of value to facilitators or service providers such as replicability, knowledge, innovation **MAY** be identified and quantified.
2. Basis of categorization into high, medium or low value **SHOULD** be clearly defined.

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## **D3.2 Complexity of Implementation**

Complexity is a measure of the difficulties in offering a service as a digital service. The complexity of a service can be attributed to technical, operational and process requirements.

### **D3.2.1 Technical Complexity**

1. All measures of technical complexity such as degree of existing automation, connectivity requirements etc. SHOULD be identified.
2. All measures of technical complexity identified SHOULD be categorized into high, medium or low.

### **D3.2.2 Complexity of Processes**

1. All measures for process complexity such as number of forms, documents, workflows and regulatory requirements SHOULD be identified.
2. All measures of process complexity identified SHOULD be categorized into high, medium or low.

### **D3.2.3 Operational Complexities**

1. All measures for operational complexity such as number of external agencies involved, availability of specialized resources, budget constraints, start-up, backup, hardware and recovery affecting the services SHOULD be identified.
2. All measures of operational complexity identified SHOULD be categorized into high, medium or low.

## **D3.3 Visibility of the Digital Service**

### **D3.3.1 Visibility by Volume**

1. Services SHOULD be classified into high or low volume services based on number of stakeholders impacted and volume of transactions.
2. High Volume-Low value and Low Volume-High Value services SHOULD be prioritized.

### **D3.3.2 Visibility by Spread**

1. The basis of categorization into high or low spread in terms of geographical and strata of consumers to be covered SHOULD be identified.

### **D3.3.3 Impact through Intangible Benefits**

1. The intangible benefits such as improved user satisfaction and positive impact on long-term national goals SHOULD be identified.
2. Services with high visibility and low complexity SHOULD be prioritized first. Services with low visibility and low complexity SHOULD be prioritized next. Services with high visibility and high complexity SHOULD be taken up next. Services with low visibility and high complexity SHOULD be deferred and a case for their abolition or re-engineering MAY be thought of.

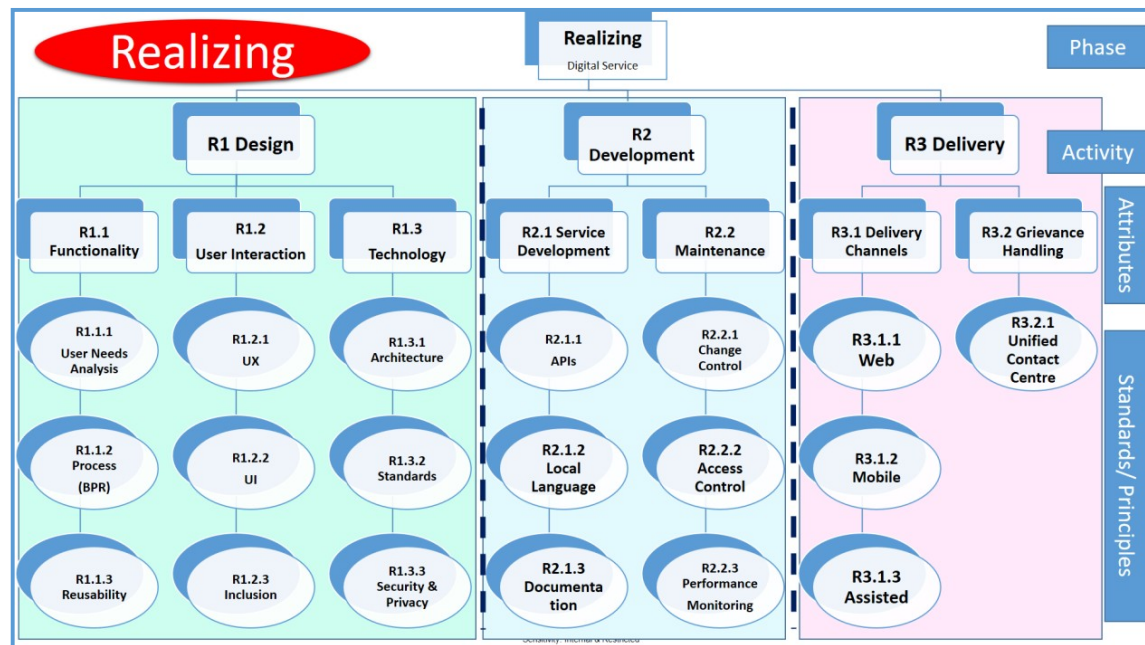
## 3. Realizing a Digital Service

### 3.1 Introduction

Once the Define phase of a service is completed, the phase of **Realizing the Digital Service** begins. Realizing the digital service involves building the digital solution for delivering the service. As in the case of any software development, it involves the standard steps of Software Development Lifecycle (SDLC). Open standards can be considered for design/development/delivery phases. In line with the overall framework defined in Chapter 1, the Realize Stage is further divided into Activities and Attributes as given under:

- **Design**
  - Functionality
  - User Interaction
  - Technology
- **Development**
  - Service Development
  - Service Maintenance
- **Delivery**
  - Delivery Channels
  - Grievance Handling

The overall framework for Realizing a Digital Service depicting the activities and attributes is shown in **Fig 3.1**.



**Fig. 3.1: Framework for Realizing Digital Services**



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### 3.2 Concepts & Definitions

1. **‘Design’** encompasses a wide range of activities required for giving a definitive shape to a Digital Service, including defining the functional requirements of the service, ensuring an optimal user experience to end users and deciding the technology dimensions of the service.
2. **‘Functionality’** means the requirements of the service along the 3 dimensions of Input, Process and Output.
3. **‘Process Flow’** relates to the management of the procedure adopted to examine the service request w.r.t the eligibility criteria, starting with the receipt of the request and ending when the service has either been delivered or rejected. It may involve a single office or multiple offices belonging to different departments.
4. **‘BPR’ or ‘Business Process Re-engineering’** is the ‘fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance such as cost, quality, service and speed’.
5. **‘Reusability’** is the design of a service generically so as to facilitate the reuse of the same in the same or different departments to achieve the very same functionality or as a part of a composite service that has a larger functionality.
6. **User Experience (UX)** is the qualitative attribute of a service that reflects a person’s subjective experience (emotions and attitude) during the service journey. UX has 7 attributes, namely, **Usefulness, Usability, Findability, Credibility, Desirability, Accessibility and Value**. The key objective of UX Design is to enrich the functionality of a digital service, by capturing the user needs closely.
7. **User Interface (UI)** is the process of translating the envisioned UX into a set of interfaces, navigations and user interactions. The objective of UI is to enrich the look and feel of the digital service. .
8. **‘Inclusion’** is the conscious effort made to enable end-users with widely varying capabilities to avail the service with comparable ease. In particular, inclusion is meant to meet the requirements of people with varying levels of literacy, digital literacy, special language requirements, poor infrastructure and above all, the needs of the differently-abled persons.
9. **‘IndEA’ or ‘India Enterprise Architecture’** is a framework for the design of multi-dimensional Architecture for large Government organizations, on a holistic basis for delivering Digital Services that provide ONE-Government experience to the users.
10. **Assisted Service Delivery** is the delivery of digital services through the medium of an agent to a person who has no access to the web and/ or is digitally illiterate. The national network of Common Service Centres is a typical manifestation of the concept of Assisted Service Delivery.



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### 3.3 Principles & Standards for Realizing Digital Services

#### 3.3.1 Design (R1):

**Functionality (R1.1)** is the totality of the features and capabilities of the digital service. It is principally derived from the requirements, expectations and aspirations of the end-users of the digital service. It has three inter-dependent attributes, namely, User Needs Analysis, Process Reform or BPR and Reusability.

##### R1.1.1 User Needs Analysis

1. Target user groups for the proposed digital service **MUST** be identified and the size(s) of the groups estimated.
2. Digital Service **MUST** be based on a user need analysis, adopting any or a combination of the instruments like Questionnaires, Interviews, Focus Group Discussions and Workshops.
3. Data relating to the Service Area **SHOULD** be gathered, interpreted and analyzed, to define the user needs.
4. The User Need Analysis **SHOULD** lead to a clear Definition of the Digital Service, improving upon and validating the service definition given in the Define Phase, including Objective, Scope and Service Level. (*pl see the item DI.2.1 in Chapter 2*)
5. The option of not developing the intended service **MAY** be examined to ensure that services **NOT** needed by the users are not developed and launched.

##### R1.1.2 Process Re-engineering

1. Business Process Re-engineering **MUST** be undertaken in designing the large digital services projects seeking to provide a portfolio of digital services.
2. Every opportunity **MUST** be explored for making the service interaction **cashless, contactless, and paperless**.
3. Tasks which do not add value to the processing of the service **MUST** be eliminated, in the context of digitization of the service.
4. All Forms **SHOULD** be critically examined to explore the scope for eliminating the same, or combining it with another Form.
5. All Forms required to be continued **SHOULD** be re-engineered to be shortest for seeking the minimum and essential information from the user, which is not already with the Government.
6. All workflows **SHOULD** be streamlined to minimize the number of levels of approval.
7. Workflows that span across multiple agencies **MAY** be designed to support **Integrated Digital Services**.
8. All tasks involved in the processing of the application **SHOULD** be automated.
9. Business Process Re-engineering **MAY** be undertaken in designing individual digital services and apps.
10. International and national best practices **MAY** be studied while undertaking large and investment-intensive DS projects.
11. Appropriate changes **SHOULD** be made to the Acts, Rules and Regulations relating to the Digital Service, to support the result of the process re-engineering carried out in

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pursuance of the standards, principles and guidelines stated in items 1 to 10 of this sub-section.

### R1.1.3 Reusability

1. Single-window services **MUST** be implemented wherever feasible.
2. Opportunities for re-usability of a service **SHOULD** be explored and identified at design level itself and the service designed accordingly.
3. Similar and comparable services offered by different agencies to the same target group, **SHOULD** be abstracted to a common digital service to enhance re-usability.
4. A Repository of Digital Services, searchable by keywords **MUST** be established, to enable the different departments to ‘discover’ the Digital Services already available and re-use the same instead of developing them afresh.

### R1.2.1 User Experience

#### A. User Experience Design (UXD)

1. The service **MUST** be easily “discoverable” by the end user. The service **MUST** be named in terms of commonly used words, and not in departmental terminology.
2. Digital Service **MUST** be **credible**, i.e Accurate, Trustworthy and Secure.
3. The design **MUST** recognize the **accessibility** needs of the differently abled and people in remote areas. The Accessibility Policy of Govt of India **MUST** be followed. (<https://web.guidelines.gov.in/assets/gigw-manual.pdf>)
4. The following principles of Usability **SHOULD** be observed while designing the digital service:
  - a. The system **SHOULD** always keep the user informed of the current status of processing the user input.
  - b. Messages displayed to the user **SHOULD** use natural, real-world language, legend and conventions.
  - c. The system **SHOULD** be designed to forgive the mistakes committed by the user, through ‘undo’ and ‘redo’ buttons and ‘exit’ option at all stages.
  - d. Input screens **SHOULD** be designed to prevent errors through automatic validation and guidance.
  - e. The design **SHOULD** be aesthetic and minimalist.
  - f. Online help and documentation **SHOULD** be provided in handling complex processes.
5. The digital service **SHOULD** create **Value** by providing high return for the user’s effort.

#### B. Smoothening User interaction

1. Online users **MUST** be able to save the form frequently so that the data entered is not lost.
2. Forms **MUST** be downloadable for being filled off-line and uploaded.
3. The user **MUST** be able to edit the form before submitting.
4. The user **MUST** have provision to remove an uploaded file and replace it with another file before final submission.
5. Acknowledgement **MUST** be provided to the applicant.

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6. Every acknowledgement **MUST** contain the following:
    - Name of the service
    - Name of the applicant
    - Reference number to track the status of the service or to submit a grievance
    - Date on which the application form was submitted
    - Details of enclosures submitted
    - Details of Payment Made.
    - Date by which the service will be delivered (if SLA has been defined for the service)
    - Contact details of the officer to be contacted for resolution of issues.
    - URL through which the status of the request can be tracked

### C. Optimizing the User Input Requirements

1. ePramaan **MUST** be used as the Single-Sign-On Framework if user authentication is a requirement of the service.
2. In case Aadhaar number is sought as an input, the regulations of UIDAI **MUST** be followed.
3. Only mandatory documents **MUST** be asked for.
4. All payment modes (including online payment, mobile payment, internet banking, credit and debit cards and cash) **MUST** be supported.

### R1.2.2 User Interface

1. The user interface **MUST** be clear to enable easy comprehension and minimum navigation.
2. The content and messages displayed on the screen **MUST** be concise.
3. The user interface **MUST** be consistent and **SHOULD** have uniform look and feel within and across the digital services.
4. The user interface **MUST** be efficient, requiring minimum number of clicks, having features of online help & documentation and **MUST** enable a faster accomplishment of the user task.
5. All Forms **SHOULD** be designed to be responsive and renderable on multiple devices with varying form factors.

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### R1.2.3 Inclusion

1. The design of DS **MUST** ensure inclusion of all stakeholders including but not limited to the following:
  - a. **Illiterate Users**: The design **MUST** be such that the inputs required/ output produced are self-explanatory and icon-based.
  - b. **Population with limited internet connectivity**: There **MUST** be an option to capture data offline and upload it later when/ where connectivity is available.
  - c. **Affordability** (Assisted): Stakeholders who are economically constrained **MUST** be able to avail the Digital Services through Assisted means at a local community center/ municipality office/ Gram Panchayat office, etc at an affordable cost.

### R1.3.1 Architecture

1. Commonly used software components **MUST** be identified and built as separate services (or microservices) accessible through an API.
2. Architecture **MUST** be designed to support poor connectivity environments.
3. Adoption of an **Enterprise Architecture framework** such as **IndEA** SHOULD be explored while designing systems targeting large number of digital services, some of which may be inter-dependent as well.
4. Low-code development platforms such as Service Plus developed by NIC, MAY be evaluated.

### R1.3.2 Standards

1. MDDS Standards notified by Ministry of Electronics and IT, Govt of India **MUST** be followed for defining data.( <http://egovstandards.gov.in/notified-standards-0>)
2. For capturing biometric for Aadhaar authentication, the standards prescribed by UIDAI **MUST** be followed (<https://uidai.gov.in>)
3. In addition to UIDAI standards, the regulations issued by UIDAI on maintaining and/ or sharing Aadhaar data **MUST** be followed.
4. Local Government Directory **MUST** be followed for location codes. (<http://lgdirectory.gov.in>)
5. The list of technology standards given in the IndEA document SHOULD be adopted, including those related to Application, Data, Technology & Integration.

### R1.3.3 Security & Privacy

#### Information Security

1. Information Security Standards prescribed by ISO 27001 **MUST** be followed in large digital services projects.
2. Cloud Services to be used **MUST** be ISO/IEC 27017 certified
3. Applications providing the digital service **MUST** be security audited.
4. User Interfaces **MUST** be mobile-renderable.
5. The principles laid down by the Security Reference Model, which is a component of the IndEA Framework SHOULD be followed in large digital services projects.

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## Information Privacy

1. The provisions of the IT Act 2000 and the Aadhaar Act 2016, and the Regulations under the same, **MUST** be followed in respect of Personally Identifiable Information and Sensitive Information.
2. Appropriate protection mechanisms like the following **MUST** be applied in respect of Personally Identifiable Information and Sensitive Information defined by the IT Act 2000:
  - Data needing to be retrieved back **MUST** be encrypted
  - Data which need not be recovered back but may be verified **MUST** be hashed.
3. The Juvenile Justice (Care and protection of Children ) Act,2015 and the protection of Children from sexual Offences Act,2012 **MUST** be followed.

### R2.1.1 APIs

1. The feasibility of establishing open API-based eco-systems **MUST** be explored as a method of first choice while designing a portfolio of services in a particular sector, including public and private sector actors.
2. An API-Gateway and an API Repository **MUST** be established as part of the design of the eco-system described in (1) above.
3. Appropriate authentication and security standards **SHOULD** be adopted to ensure that only authorized systems have access through the API.
4. The guidelines provided in the Application Integration Reference Model of the IndEA Framework **SHOULD** be referred to for guidance on the situations where API-based architecture would be ideally suited.

### R2.1.2 Local Language

1. Local Language interface **MUST** be provided by default and English interface **MAY** be optional.
2. UNICODE **MUST** be used for all labels, messages and form fields

### R2.1.3 Documentation

1. The various artefacts related to the entire software development life cycle **SHOULD** be maintained as per ISO Standards for SRS, Design, Development and Testing.
2. The documentation **MUST** comply with 'ISO/IEC 26514:2008 Systems and Software Engineering - Requirements for designers and developers of user documentation'.

### R2.2.1 Change Control

1. All changes to the service after the service has gone online **MUST** be properly versioned.
2. An appropriate Governance Structure **MUST** be established for Change Control Management. 'ISO/IEC 20000-1 Information technology — Service management — Part 1: Service management system requirements' **MAY** be referred to in this regard.

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### R2.2.2 Access Control

1. The Access Controls defined in the Security Reference Model of IndEA **MUST** be incorporated in the solution.
2. While designing large systems, an established and proven IAM (Identity and Access Management) solution **SHOULD** be evaluated for procurement.

### R2.2.3 Performance Management

1. Performance of the service **MUST** be continuously monitored, preferably using Open technology tools.
2. Planned Downtime **MUST** be timed to happen when there is minimum access and **MUST** be commissioned after advance intimation is given to the concerned users.
3. Agile development tools and technologies **SHOULD** be used to ensure that the service is modified without actually shutting it down.
4. Unplanned Downtime **SHOULD** be avoided at all costs.

### R3.1.1 Web

1. Online form submission **MUST** be always supported.
2. The Service **MUST** be supported on all browsers and platforms
3. The portal of service **MUST** provide a link of POSCO e-box ([http://ncpcr.gov.in/user\\_complaints.php](http://ncpcr.gov.in/user_complaints.php))

### R3.1.2 Mobile

1. All services **MUST** be designed responsively.
2. The Service **MUST** Be accessible via All Mobile Browsers
3. An APP Store **MAY** be developed to host all Apps accessible as per the standard taxonomy of DSS.

### R3.1.3 Assisted

1. Assisted modes of submission of application or status tracking **SHOULD** be supported where the target user groups are disadvantaged.

### R3.2.1 Unified Contact Centre

1. A Unified Contact Centre (UCC) with a toll-free number **MUST** be established to provide support to the citizens on all services provided by the Government.
2. The UCC **MUST** support Voice, IVRS, SMS, Chat and e-Mail Communication.
3. The UCC **MUST** have an end-to-end integrated case management system to record, monitor, escalate and track each issue to closure.
4. The UCC **SHOULD** have manpower to respond in all official languages of the State/ country, as the case may be.

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## 4. Measuring and Assessing Digital Services

### 4.1 Objectives of Measuring and Assessing Digital Services

Measuring and Assessing Digital Services is the logical next step after Realizing the Digital Services.

The specific objectives of **Measurement** are:

- a. To enable an effective *management* of the Digital Service, following the principle – ‘*what gets measured gets managed*’; to identify the areas – *functional and geographical*- where the service is not performing well, and to take corrective actions, with a special focus on the inclusive aspects of the service delivery;
- b. To analyse the trends in the usage and uptake of the service and adjust/ enhance the system so as to maximize the benefit of the service.
- c. To compare the performance of the service, both qualitatively and quantitatively, with the pre-defined service level and take contractual action as per the applicable Service Level Agreement, and
- d. To compare the performance of the service with global benchmarks and promote continuous improvement.

The specific objectives of **Assessment** are:

- a. To know whether the standards and principles of DSS adopted in the **Define** and **Realize** Phase have been complied with in actual practice;
- b. To assess the outcomes of the digital service or digital project in terms of the Outcome KPIs laid down for the service/ project;
- c. To assess the cost-effectiveness of the digital service from the point of the end-user;
- d. To know the impact of the digital service on the stakeholder population;
- e. To get regular and systematic feedback from the users of the service and to promote alignment of the service with the user needs;
- f. To evaluate whether the grievance redressal mechanism established for the digital service/ project has been functioning effectively.

### 4.2 Concepts and Definitions

**Measurement** is the process of determining the performance of a digital service in terms of meeting the output KPIs. Measurement is quantitative in nature and can be undertaken at specified frequency or on a continuous/ real-time basis.

**Assessment** is the process of determining the degree to which a digital service meets the qualitative attributes and outcome KPIs specified during the Define and Realize phases. Assessment can be made of an individual digital service, a portfolio of services or a digital project in *toto*. By the very nature of the methods adopted, assessment cannot be made on a continuous basis. It can be made at a frequency of a quarter, half-year or on an annual basis.

**eTaal** is an electronic dashboard established by Gol for providing a real-time aggregated view of volume of e-services being delivered across different agencies of the central, state and local governments in India. It counts the number of ‘end-to-end electronic transactions’ as the



indicator for measuring the performance of G2C and G2B e-Services. At present over 3,500 e-services from 21 Central Ministries, and 36 States/ UTs have been registered with e-Taal. However, it does not provide the quality aspects / outcome of the e-services.

### 4.3 Overall Framework for Measurement and Assessment

Since Measurement and Assessment are two different and yet crucial aspects of measuring the DSS, these are treated as two distinct activities. Fig 4.1 depicts the attributes of these 2 Activities.

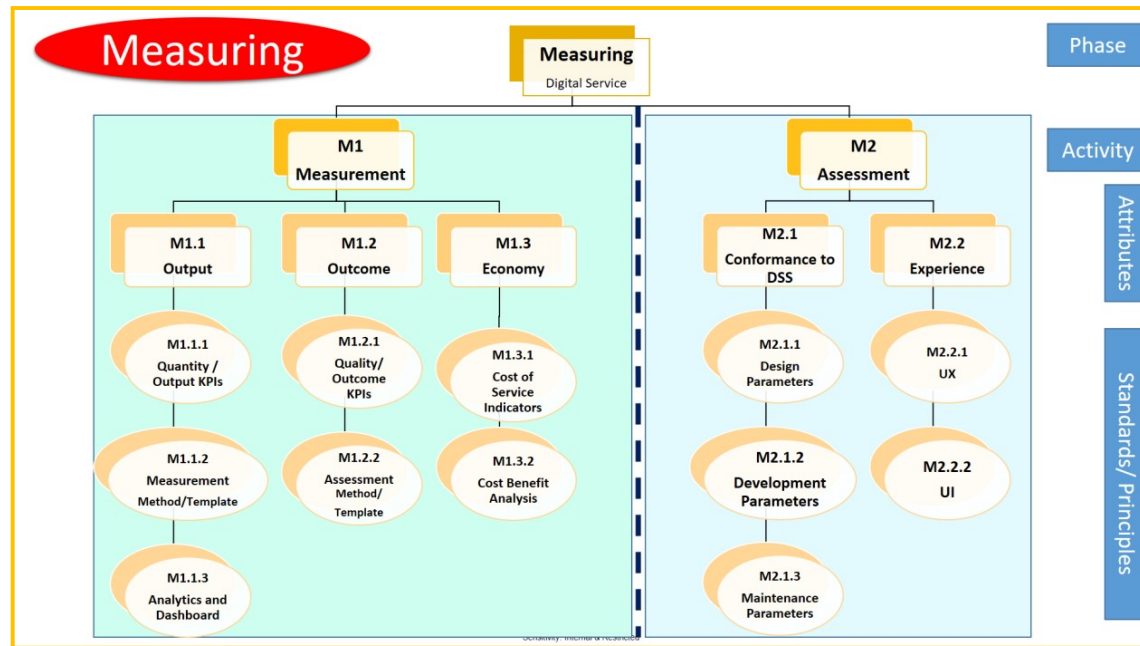


Figure 4.1 Overall Framework for Measurement and Assessment of DSS

### 4.4 Standards and Principles for Measurement of Digital Services

Under the measurement activity, three main attributes viz. **Output**, **Outcome** and **Economy** are considered. The following sections define the Standards and Principles that **MUST** (Standards), **SHOULD** (Principles) or **MAY** (Guidelines) be adopted in the measurement of a digital service.

#### M1.1.1 Quantity / Output KPIs

1. The following Quantity / Output KPIs **MUST** be prescribed and measured in respect of all digital services
  - a. Number of services provided digitally as against the total number of services provided by the Department;
  - b. Number of Digital Transactions delivered in a given period as against the potential number of transactions for that service;
  - c. Distribution of the digital transactions across the different geographies;
  - d. Degree of coverage of the users located in interior and remote areas;
  - e. Performance of the various organizational units of the department, in delivering the digital service(s).



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2. Turnaround Time (TAT) for the service request **MUST** be captured and compared with the applicable SLA.
  3. Appropriate output KPIs **MUST** be designed, measured and monitored, where the digital service relates to and / or impacts the performance in the achievement of the Sustainable Development Goals.
  4. Appropriate output KPIs **MUST** be designed, measured and monitored, where the digital service relates to and / or impacts the performance in the achievement of the Welfare and Development Goals set by the Government.
  5. The number of output KPIs **SHOULD** be kept to the minimum, considering that cost of data is significant – in collection, transport, storage and analysis.

#### **M1.1.2 Template and methods for Measurement of Output KPIs**

1. Output KPIs **SHOULD** be measured by deriving the data from the applications supporting the digital services; manual collection/ entry of data **SHOULD** be avoided.
2. Output KPIs **MAY** be measured and monitored **in real-time** to the extent possible.
3. The template given in **Annexure-C** **MAY** be customized and adopted for measuring and monitoring Output KPIs.

#### **M1.1.3 Analysis and Dashboards for measurement of Quantity/ Output KPIs**

1. The measurement of Output KPIs **SHOULD** be used for analysis and decision-support with the objective of improving performance in the related domain.
  2. The Output KPIs used for measuring the Digital Services **SHOULD** be linked to the e-TAAL, established by Govt of India, and also to the dashboard of the concerned application.
  3. Analysis of the measured data **SHOULD** lead to identification of **exceptions** and addressing the same for improvement or amelioration. These exception reports **MAY** include the following:
    - a. Digital Services not performing well
    - b. Geographies and/ or organizational units not performing well;
    - c. Root cause analysis of the under-performance of the services/ geographies/ organizational units.
  4. **Dashboards** for measurement **SHOULD** display the information on the following aspects:
    - a. Performance of the digital service in terms of the Output KPIs Vs Target;
    - b. Drill down of the performance of the service upto the last operational unit;
    - c. Visualization of the output KPIs using GIS system;
    - d. Highlighting the services/ geographies/ org units needing special attention.
    - e. Special focus on the performance of the Government towards achieving SDGs.
  5. Self service analytics systems may be used for measurement and analysis.
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### M1.2.1 Quality/ Outcome Measurement

**Outcome and Impact:** Any digital service should have an impact on the citizens' life to be sustainable in the long run. The following 8 characteristics of **good governance** are used as the criteria to measure the **Outcome** of a digital service.

1. **Participation:** All the major stakeholder groups **MUST** be involved in the 'Define', 'Realize' and 'Measure' phases of the life cycle of DS.
2. **Rule of law:** The digital service **MUST** be legally compliant with all the established laws, rules and regulations applicable to the domain.
3. **Transparency:** The definition of the digital service **MUST** be transparent in terms of the eligibility criteria, service levels and the forum for addressing grievances relating to that service.
4. **Responsiveness:** The digital service **MUST** be designed to be responsive, meeting the criteria of 'Fast Response, feedback to user on what is happening during the back-end processing of the click/ request, user guidance and online help features'
5. **Effectiveness and Efficiency:** This **MUST** be measured by following KPIs.
  - a. The feedback to the service by majority of the beneficiaries **MUST** be 4 stars on a five-star scale.
  - b. The performance of service in terms of TAT
6. **Accountability:**
  - a. Standard Operating Procedures (SOPs) **MUST** be well- defined.
  - b. Level of compliance to SOPs **MUST** be more than 80% for all procedures and deliverables.
  - c. There **MUST** be tight, well defined 'escalation mechanisms'.
7. **Consensus orientation:** The 'approval' of majority of the stakeholders for decisions related to the 'design' and 'implementation' **SHOULD** be assured.
8. **Equity:** There **SHOULD** be complete/partial elimination of avoidable human interface, in routine aspects of the service.

### M1.2.2 Template and methods for Measurement of Outcome KPIs

1. Outcome KPIs **MAY** be measured by comparing the degree of conformance with the principles of good governance stated in M1.2.1.
2. Outcome KPIs **MAY** be measured and monitored at periodicity of a quarter, half-year or a year.
3. The template given in **Annexure-D** **MAY** be customized and adopted for measuring and monitoring Outcomes KPIs.

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### M1.3.1 KPIs for Cost of Service

1. The total cost of ownership (TCO) of the service **SHOULD** be measured in two heads viz. Capital Expenditure (CAPEX) and the Operating Expenditure (OPEX).

### M1.3.2 Cost Benefit Analysis

1. Cost-benefit Analysis **MAY** be conducted in respect of digital services that consumed significant investments, to satisfy that the stakeholders are deriving value-for-money.

## 4.5 Standards and Principles for Assessment of Digital Services

Standards & Principles with respect to **assessment** are along two dimensions, namely, the **Degree of Compliance with the DSS Framework** and the **Experience of the stakeholders** in using the digital service as depicted in Fig 4.1.

Assessment is essentially qualitative in nature and is usually done on an appropriate scale of rating. The assessment shall include parameters like User Interface(UI) and User Experience(UX).

The degree of conformance to the DSS is assessed in terms of the major attributes identified in the Define and Realize Phases of the DS Life Cycle. These standards and principles have been specified in Chapter 3 in a form that is readily assessable. *Hence separate parameters are not prescribed here.* However, the following principles are stated in the matter of conducting the assessments:

1. Assessment **MUST** be undertaken on an annual or bi-annual basis, and not more frequently.
2. Assessment **SHOULD** be undertaken at the DS Project level or the Portal Level. It is not cost-effective to assess a single DS in isolation.
3. Assessment **MUST** be entrusted to a neutral third party.
4. The Format for Assessment provided in **Annexure-E**, **MAY** be followed, with appropriate customization.

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## 5. Governing Digital Service Standard

### 5.1 Objectives of Governing Digital Service Standard

The sustainability of DSS as a National Standard depends, to a great extent, on the manner it is governed and the strategies followed in ensuring conformance to the same. 2 sets of standards and principles are therefore proposed on the 2 distinct areas bearing on the sustainability of DSS namely, '**Governing DSS**' and '**DSS Implementation Strategies**'. The objectives of these two sets of Standards and Principles are given below:

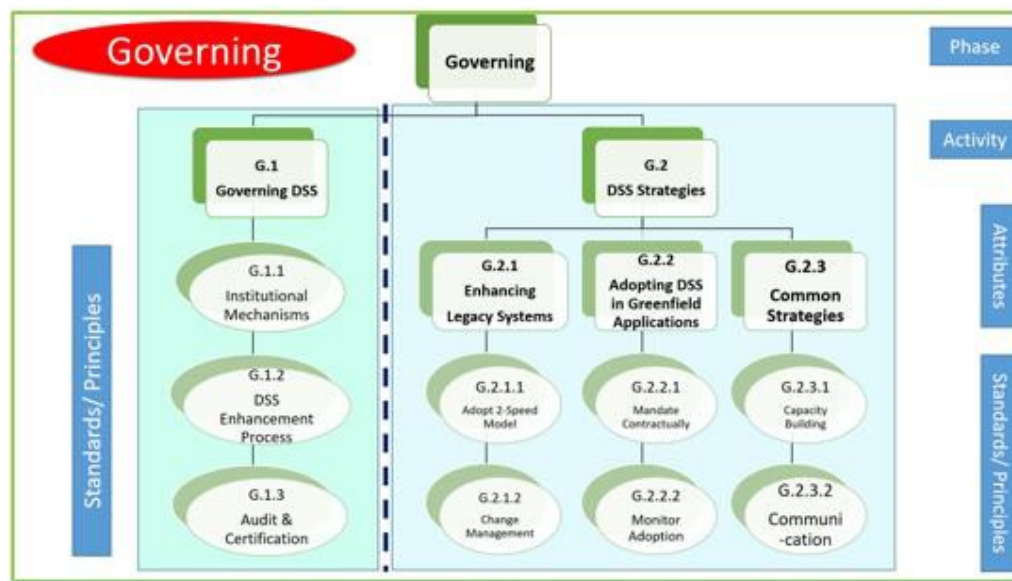
- a. To ensure that appropriate **institutional mechanisms** are established at various levels in the Central and State Governments to promote, monitor, guide and enforce the adoption of DSS;
- b. To provide for periodic **enhancements** to DSS to keep it abreast of developments in the area of digital governance;
- c. To create frameworks for **audit and certification** of organizations in the matter of conformance to the DSS;
- d. To accelerate the process of **migration of legacy systems** to the DSS regime;
- e. To suggest mechanisms to facilitate the adoption of DSS in **greenfield applications** and
- f. To promote appropriate initiatives being taken up in the 'People Dimension' to **build capacities on DSS** as an essential discipline in the digital governance sector, and to advocate the role of proper **communication** in promoting the adoption of DSS.

### 5.2 Concepts & Definitions

1. "**Challenges or Issues**" are those that may hinder, prohibit, or reduce the quality of implementation of the DSS at any stage of implementation or uptake.
2. "**Legacy system**" is an existing IT system that is business critical and demonstrates one or more of the following additional characteristics: old age, obsolete technologies, poor - if any - documentation, inadequate data management, a degraded structure, limited support capability and capacity, increasing maintenance costs, and lacking the necessary architecture to evolve. Legacy Systems suffer the following disadvantages
  - i. Integration with new technologies can be a barrier for Legacy systems which might have incompatible versions of technology as their base. This can even prevent any form of piecemeal upgrade of the legacy system to meet the DSS and shall prevent departments from creating solutions that can conform to DSS.
  - ii. Legacy systems do not necessarily meet the latest security requirements and their integration into the larger piece of the solution may compromise data protection.
  - iii. The time and effort to transition can be costly, thus bringing down the agility of the entire system.
  - iv. Legacy Systems reduce the scope of open data and open API that bring in interoperability, replicability and scalable solutions.

3. **2-Speed Model** is an implementation approach that works along 2 tracks , namely, a **Fast Track** by which the quick wins are derived and the **Normal Track**, which adopts a typical lifecycle approach (Define, Realize, Measure and Govern in the context of DSS). Typically, a 2-Speed Model is adopted when
  - i. Quick results are needed for organizational reasons;
  - ii. Legacy system provides critical services that can't be stopped for migration;
  - iii. There exist budgetary constraints on making huge investments in the immediate future;
  - iv. Legacy system is tightly coupled with other systems and a large-scale overhaul has cascading effects.
4. **Institutional Mechanisms** are internally designed processes used for deployment of DSS and monitoring of the same in a structured and well-established manner.
5. **Change Management (CM)** is the process, tools and techniques to manage the 'people side' of change to achieve the required outcome. It includes methods that redirect or redefine the use of resources, business process, budget allocations, or other modes of operation that significantly change an organization. CM is implemented adopting one of the 3 methods – Kotter's 8-Step Model, Deming's PDCA Model or PROSCI's ADKAR Model.

### 5.3 Framework for Governing Digital Service Standard



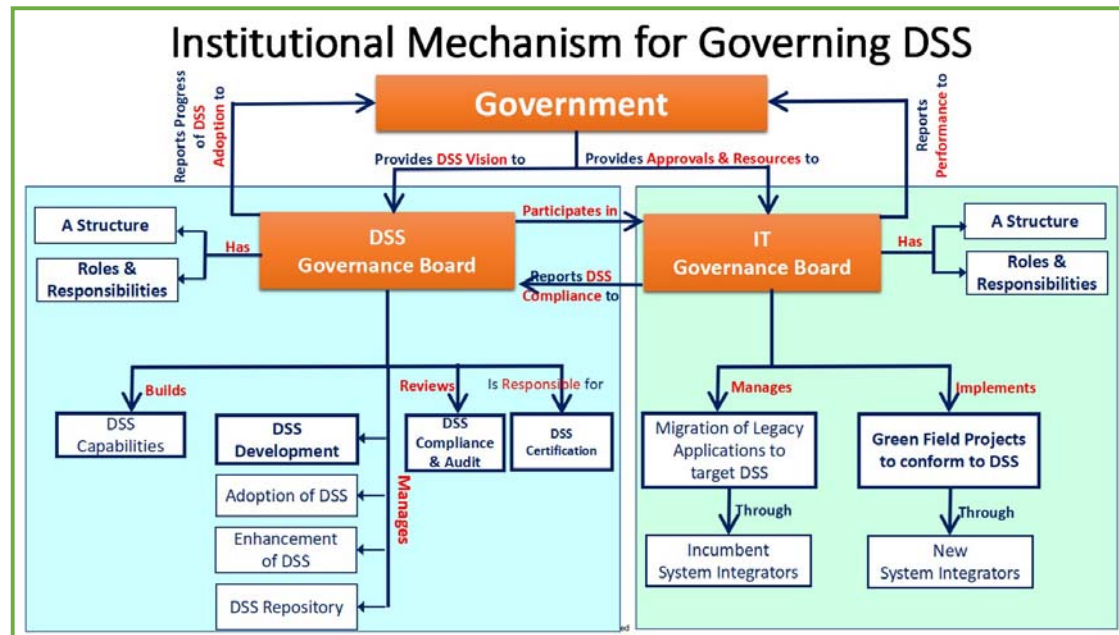
**Fig 5.1: Framework for Governing DSS**

The overall framework for Governing DSS is shown in the **Figure 5.1**. The Standards, Principles and Guidelines for Governing DSS are specified in what follows.

## G1: Governing DSS

### G1.1: Institutional Mechanisms

1. The Institutional Mechanism for Governing & Implementing the DSS shown in **Figure 5.2** **MUST** be established by the Governments planning to adopt DSS successfully. It comprises of the **DSS Governance Board** and **IT Governance Board**.



**Figure 5.1: Institutional Mechanism Framework**

2. The DSS Governance Board **SHOULD** be made responsible for design of the overall strategies for adoption, customization and enhancement of the DSS within the jurisdiction of the Government (Central or State Government) to meet requirements of business requirements of various departments.
3. The DSS Governance Board **SHOULD** be made responsible for ensuring interoperability & scalability of all the Digital Services by formulating appropriate rules/regulations applicable to the Digital Services.
4. The IT Governance Board **SHOULD** be made responsible for overseeing the implementation of the Digital Services as designed by the DSS Governance Board, both in respect of the Migrating Legacy applications to target DSS and greenfield digital projects.
5. The DSS Governance Board and IT Governance Board **MAY** be coterminous with any existing Enterprise Architecture Board and IT Implementation Agency respectively that operate at the Government level.
6. The DSS Governance Board **MAY** consist of 5-7 experts in digital governance, academics and industry and chaired by a senior administrator of the Government.
7. The IT Governance Board **MAY** consist of 5-7 subject experts and chaired by a senior of the administrative Ministry/Sate.

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## G1.2: DSS Enhancement Process

1. DSS **MUST** be reviewed on annual basis.
2. DSS **MUST** be assessed continuously in line with the changes in business processes, business models and emerging technologies and the required enhancements identified and developed.
3. Impact of the proposed enhancement(s) on the cost-benefit, interoperability, and business models of the existing digital services **MUST** be evaluated before approving and notifying the enhancement(s) to the DSS.
4. Version Control **MUST** be adhered to in the process of DSS enhancement.

## G1.3 Audit & Certification

1. Government (Central or State) **SHOULD** establish a process for empanelment of professional companies to undertake audit of digital services projects for compliance with DSS.
2. Government **SHOULD** establish and notify the formats and templates for the DSS audit. While doing so, the formats for Measurement and Assessment described in Chapter 4 and provided in the **Annexures C, D and E** **MAY** be taken into consideration.
3. The digital services **MUST** be audited for adherence to the relevant standards in the following areas:
  - a. Regulatory requirements applicable to the digital service
  - b. ISO 9241-171:2008: Ergonomics of human-system interaction : Guidance on software accessibility
  - c. Data Standards published by MietY (<http://egovstandards.gov.in>)
  - d. Data Privacy
  - e. Service Level Agreements
4. Digital Services that are compliant with the above mentioned standards/ guidelines/ policies **SHOULD** be given certification indicating the level of compliance.
5. If a DSS Certification Scheme is introduced, the Certification Levels defined below **MUST** be followed:
  - a. **DSS Level 1: MUST** be compliant with the following:
    - i. D1.1.2 Transparency
    - ii. D1.3.1 Quantitative Service Levels/ KPIs
    - iii. D2.1.1 Taxonomy of Digital Services
    - iv. D2.1.2 Service Metadata
    - v. R1.1.1 User Needs Analysis
    - vi. R1.1.2 Process Re-engineering
    - vii. R1.2.1 User Experience
    - viii. R1.2.2 User Interface
    - ix. R1.3.2 Compliance to Standards
    - x. R1.3.3 Security
    - xi. R.1.3.3 Privacy
    - xii. R2.1.2 Local Language Interface
    - xiii. R2.1.3 Documentation
    - xiv. R2.2.1 Change Control



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- b. **DSS Level 2: MUST** be compliant with the following, in addition to the requirements of Level 1:
    - i. M1.1.1 Quality / Outcome KPIs
    - ii. M1.1.3 Analysis & Dashboards for measurement of Quantity/ Output KPIs
    - iii. M1.3.1 Cost-effectiveness of the Service
    - iv. G1.1.1: Institutional Mechanisms
    - v. G2.1.2 Change Management
    - vi. G2.3.1 Capacity Building

## 5.4 DSS Strategies (G2)

The vision to graduate to Government 4.0 on the lines of Industry 4.0 would require the seamless transition and uptake of the Digital Service Standards by the Central, State and Local Governments. DSS Strategies seek to unlock the systemic challenges, overcome the systemic inertia to change and bring about agility in the ecosystem. The activities and attributes shown in the **Figure 5.1** are defined in the sections that follow.

## 5.5 Principles & Standards for Enhancing Legacy Systems to DSS (G2.1)

### G2.1.1 Adopt 2-Speed Model

1. All the legacy systems, products, architectures and Standards **MUST** be identified and prioritized for migration to DSS, using the **Impact-Constraint Matrix** that defines the **Impact of Change** along one axis (HIGH, MEDIUM, LOW) and the Constraints (technical, financial & operational) on the other (HIGH, MEDIUM, LOW).
2. Services/ attributes falling within **HIGH-Impact and LOW-Constraint** area **MUST** be migrated to DSS regime on the Fast Track.
3. Services/ Attributes falling within **LOW-Impact and HIGH-Constraint** **MUST** be evaluated for being abandoned.
4. All the remaining Services/ Attributes **SHOULD** be processed for transition to DSS on the Normal Track.
5. In addition to the steps 1-4 above, the Organization **MAY** interact with the actual customers of the service(s), and prioritize the DSS uptake in the areas identified by the customers as being critical to improving the service.
6. GOI Shall formulate detailed Implementation Guidelines for effective adoption of the DSS standard.

### G2.1.2 Change Management

1. Assessment **MUST** be made of the risks associated with the changes to be brought about due to adoption of DSS, in terms of quality of services, system specifications, security and data protection & privacy.
  2. Budgetary requirements **MUST** be estimated and provided to acquire the required capacities and infrastructure to implement the change.
  3. A well-established methodology for Change Management, appropriate to the adoption of DSS **SHOULD** be followed.
  4. Periodic reviews **SHOULD** be made of the digital capability, internal and external, and infrastructure and road maps created for the DSS uptake
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## 5.6 Principles & Standards for Adopting DSS in Green Field Applications (G2.2)

### G2.2.1 Mandate adoption of DSS Contractually

Evolving digital service standards and agile methodologies can get restricted due to age old procurement rules and policies that may limit the uptake of DSS. Procurement and contracting rules have to be updated, as appropriate, to make them compatible with modern ways of developing and deploying digital technology. Procurement of digital technologies should be based on an assessment of existing assets including digital skills, job profiles, technologies, contracts, inter-agency agreements to increase efficiency and support for innovation. This will also ensure continuous improvement in-line with evolving DSS and sustainability.

1. RFPs and contract agreements relating to Digital Governance projects **MUST** define non-negotiable Service Level Agreements (SLA) to ensure that the service enhancements or developments are consistently & invariably aligned to the DSS.
2. Contracts and SLAs bearing upon DSS **MUST** provide for periodic enhancement of the standards to leverage cutting edge technologies.
3. The SLAs **SHOULD** be easily understandable, measurable and monitorable.
4. Obligations to enforce DSS **SHOULD** form part of the contracts between Government and the external service providers as also the G2G arrangements.
5. Officers of Government handling contracts **MUST** be reskilled and their capacities enhanced to enforce the contractual terms relating to DSS.
6. Feedback **SHOULD** be taken from the customers on the quality of digital services to check whether they are in alignment with contractual terms on DSS.
7. A systems of rewards and penalties **MAY** be introduced in the contracts to promote conformance to DSS.
8. Panel of Auditors **MAY** be established to ensure that the services are periodically audited to ensure compliance with the actual outcomes mandated under DSS.

### G2.2.2 Monitor Adoption

The commitment to the implementation of DSS needs to be monitored in order to measure the adherence to the SLA defined in the contracts.

1. The team structure and the capacities required for monitoring and evaluation **SHOULD** be defined and the team positioned.
2. The teams deployed at various levels (Central, State & Government Local Bodies) **SHOULD** be made responsible for monitoring the adoption of and continued adherence to the DSS.
3. The service provider(s) **MUST** be required to deploy an internal quality cum monitoring team for DSS uptake that shall evaluate and report periodically to their development team and also their counterparts on the Government department end.
4. Evolving changes to the DSS **SHOULD** be communicated regularly to the service providers and the teams.
5. Alerts for corrective action **SHOULD** be communicated to the service providers and the teams.
6. DSS Dashboard **MUST** be established for real time reporting and monitoring.

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7. The systems **SHOULD** be subject to mandatory periodic Financial Audits and social audits where applicable.
  8. A stakeholder ownership layer **MAY** be added in the form of citizen feedback through social media /non-digital means.

**Importance of Monitoring:** A good example of monitoring is provided in Andhra Pradesh Government's pioneering effort in Real Time Governance and the concept of **CM Core Dashboard** that has all the service level data feeding into it with the quality of data received translating into ratings to the departments. It triggers action to improve efficiency of service delivery besides acting as an effective means of information to citizens.

## 5.7 Standards & Principles on Common Strategies for DSS (G2.3)

There are two requirements for the success of DSS which are common to both the brownfield and greenfield applications alike. These are:

- **Capacity Building** on DSS
- **Communication** to drive the DSS vertically.

### G2.3.1 Capacity Building

The gaps identified in capacities of internal teams to implement standards across various projects at Centre, State and Government Local Bodies are as follows:

1. **Outsourced IT Projects and Resources**, which limit the growth of internal resources
2. Problems of **Availability, Affordability and Retention** due to external competition, low paying capacity of the public sector and the lack of performance-linked incentives to retain talent.
3. Internal resistance

The following **standards, principles and guidelines** are laid down in the area of capacity building;

1. A strong, centralized leadership **MUST** be positioned to drive a common vision cutting across the length & breadth of departments and the varying maturity levels of digital services offered at different levels.
2. A panel of agencies **MUST** be created to build the technical capacities required for realizing the implementation of DSS.
3. The empanelled agencies, in close association with the Government **SHOULD** evaluate, identify gaps and build capacities across external and internal teams vis-à-vis the requirements of DSS compliance in the following areas:
  - i. Monitoring & evaluation of adoption of DSS
  - ii. Technical skills in the design, development and delivery of DSS
  - iii. Communication skills
  - iv. Audit capabilities
  - v. Contract Management
  - vi. Business Process Re-engineering
4. Long term fiscal commitments needed to transition to DSS **SHOULD** be created.

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5. Citizen and civil society interaction platforms for implementing teams MAY be created at all administrative and technical levels to mainstream citizen centric / citizen driven approach.
  6. A higher weightage MAY be given to demonstrated capacities in the implementation of DSS with special focus on information security, data privacy and usability, in the RFPs of digital governance projects.
  7. Resources, staff and teams MAY be rewarded for exceeding expectations in adherence to DSS.
  8. Self-paced learning modules MAY be designed and launched in the important areas of DSS like audit, technical attributes, monitoring & evaluation, contracts and communication.
  9. Organizations MAY be encouraged to create Digital Service Teams (DSTs) that
    - i. Operate outside the current system;
    - ii. Operate in a Startup environment in the Government setup;
    - iii. Are funded through a separate budget line that gives them flexibility to operate and run their projects;
    - iv. Adopt agile methodology for software development as opposed to contractor-centric, risk-averse development and
    - v. Are committed to faster uptake of open APIs
  10. **GAIN IT Fellows** – Government Aided National IT Fellowships – MAY be established in institutions of higher technical learning.

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### G2.3.2 Communication

Effective communication strategy is essential to implement the digital service standards in its true spirit across the departments, agencies and the main stakeholders - citizens. Informational disaggregation and paralysis can result due to the factors mentioned below:

1. Misinterpretation of DSS that can lead to dilution of standards and loss of clarity of the common vision for digital services.
2. Poor rigor in documenting the standards for digital services can create legal complications.
3. Lack of supporting content and network of resources to guide staff/teams at various levels across geographies and departments can lead to informational paralysis.
4. Citizens unaware of the SLA's attached to the services can't assert their rights.

The following **standards, principles and guidelines** are laid down to establish clear lines of communication to propagate the requirements of DSS.

1. Communication Experts and Legal Resources **MUST** be involved early in the process of framing DSS to ensure that the communications on DSS are unambiguous and do not create scope for non-performers / non-adopters.
2. Appropriately designed FAQs on DSS **MUST** be published.
3. Non-digital means of communication, in the form of seminars and workshops, **MUST** be used to supplement the digital communications.
4. An expert agency or resource **SHOULD** be employed for ensuring effective communication & dissemination of information and preparation of IEC material.
5. Varying priorities and multiple channels of communication **MAY** be defined for
  - i. Training
  - ii. Feedback/grievances
  - iii. Introduction of new digital services
  - iv. Monitoring defaults
  - v. Enhancements to legacy systems
  - vi. Rewards & challenges
6. DSTs **MAY** be trained to actively communicate on social media networks and mine citizen feedback on DS's.
7. Competitions and challenges **MAY** be organized as a medium to encourage active citizen participation and feedback.

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### Chapter 4: Measuring and Assessing Digital Services

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### Chapter 5: Governing Digital Service Standard

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## Annexures

### Annexure A

#### Taxonomy of Digital Services (Service Areas) *(Pl see Chapter 2)*

Digital Service Areas	Digital Service Area Codes	Digital Service Sub-Areas	Digital Service Sub-Area Codes
Education and Learning	01	Early childhood	0101
		Universities and higher education	0102
		International education	0103
		International students	0104
		Scholarships and student finance	0105
		Apprenticeships and training	0106
		Education and training grants	0107
		Resources for schools	0108
Health and Wellness	02	Children's health and immunization	0201
		Disease and conditions	0202
		Health promotion	0203
		Health care providers and access	0204
		Medicine and health products	0205
		Mental health	0206
		Sports	0207
		Workplace health and safety	0208
Electricity, Water and Local Services	03	Electricity	0301
		Water	0302
		Local services	0303
Money and Taxes	04	Banking and money	0401
		Financial regulation	0402
		Investment	0403
		Personal finance	0404
		Superannuation	0405
		Income Tax	0406
		GSTN	0407
		Court claims, debt and bankruptcy	0408
Jobs	05	Career information	0501
		Employment services and jobs	0502
		Information for employers	0503
		Retirement	0504

Digital Service Areas	Digital Service Area Codes	Digital Service Sub-Areas	Digital Service Sub-Area Codes
		Working conditions, health and safety	0505
<b>Justice and Law</b>	06	Reporting crimes and getting compensation	0601
		Your rights and the law	0602
		Courts, sentencing and tribunals	0603
		Prisons and probation	0604
		Young people and the law	0605
		Online safety	0606
<b>Travel and Tourism</b>	07	Tourism in India	0701
		Embassies and consulates	0702
		Customs and quarantine	0703
		Travel abroad	0704
<b>Business and Self-employed</b>	08	Setting up	0801
		Employee management	0802
		Licenses, trademarks and copyright	0803
		Regulations & Returns	0804
		Taxes	0805
		Imports and exports	0806
		Sales of goods, services & data protection	0807
		Waste and environmental impact	0808
		Closing down	0809
<b>Births, Deaths, Marriages and Child Care</b>	09	Certificates, register offices, change of name or gender	0901
		Marriage and Divorce	0902
		Having a child, parenting and adoption	0903
		Child benefit	0904
		Death and bereavement	0905
<b>Pension and Benefits</b>	10	Pension	1001
		Crisis	1002
		Job seekers	1003
		Families	1004
		Students	1005
		People with disabilities	1006
		Migrants refugees and visitors	1007
		Older people	1008
<b>Transport and Infrastructure</b>	11	Public transport and private vehicles	1101

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		Roads and Road transport	1102
		Aviation	1103
<b>Digital Service Areas</b>	<b>Digital Service Area Codes</b>	<b>Digital Service Sub-Areas</b>	<b>Digital Service Sub-Area Codes</b>
		Maritime	1104
		Registration and licenses	1105
		Infrastructure	1106
<b>Citizenship, Visa's and Passports</b>	12	Citizenship and living in India	1201
		Passports	1202
		Travel abroad	1203
		Living abroad	1204
<b>Agriculture, Rural and Environment</b>	13	Farming	1301
		Fishing and hunting	1302
		Land and water resources	1303
		Wildlife and biodiversity	1304
		Climate change	1305
		Environmental grants	1306
		Environmental management and protection	1307
		Weather	1308
		Pollution and waste management	1309
		Rural services	1310
<b>Youth, Sports and Culture</b>	14	Youth	1401
		Sports	1402
		Culture	1403
<b>Science, IT and Communications</b>	15	Science, IT and Communications	1501



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## **Annexure B**

### **Taxonomy of Digital Services (Service Metadata)** (National Government Services Portal)

1. Language: Language of metadata (e.g. Hindi / English/ others)
2. Title: Descriptive title of the service
3. URL: URL of the page where the service is available
4. Alternate URL: Alternate URL of the service, if any
5. Description: Description of the service and how to avail
6. Keywords: Keywords to enhance the searchability
7. Service Maturity: To what extent the service is online (information, partial online, fully online)
8. Area: To be selected from available list
9. Sub-Area: To be selected from available list
10. Interaction Type: G2C, G2B, G2E, G2G
11. Owner: Department providing the service
12. Location: required if the service is for a particular location (state/district)

## Annexure C

### Template for Measuring the Output of a Digital Service (Pl see Ch 4)

**Name of the Department:**

**Name of the Digital Service:**

**Period of Measurement:** From DDMMYY to DDMMYY

Sr. No	Parameter	Unit of Measurement	Quantity	Weightage	Score
A	B	C	D	E	F
1	Number of Digital Transactions done during the period	Number			D1 X E1
2	% of Digital transactions to the total / potential transactions done in that service	%		30*	D2 X E2
3	Average Turnaround Time (TAT) (from request to fulfilment)	number			
4	% of TAT to defined SLA	%		30*	D4 X E4
5	Does the Digital Service relate to an SDG or a Priority Program of the Government	Yes or No			
6	If yes to 5, define appropriate KPI's of SDG/ Program (upto top 3)				
6a	% of achievement of KPI1 against the target for the period	%		20**	D6a X E6a
6b	% of achievement of KPI2 against the target for the period	%			D6b X E6b
6c	% of achievement of KPI3 against the target for the period	%			D6c X E6c
7	Is the measurement automated? (Yes or No)	If Yes, allocate a Score of 5. If 'No', 0			
8	Is the measurement real-time? (Yes or No)	If Yes, allocate a Score of 5. If 'No', 0			
9	Is the measurement upto the last org unit? (Yes or No)	If Yes, allocate a Score of 5. If 'No', 0			
10.	Is the measurement published on a web-site? (Yes or No)	If Yes, allocate a Score of 5. If 'No', 0			
	TOTAL SCORE				
Notes					
*	In case the answer to 5 is 'No', this weightage may be increased to 40				
**	In case the KPIs are more than 1, apportion the score (20) among the 2 or 3 KPIs				
	SLA is subject to change based on improvement / performance.				

## Annexure D

### Template for Measuring the Outcome of a Digital Service (Pl see Ch 4)

**Name of the Department:**

**Name of the Digital Service:**

**Period of Measurement:** From DDMMYY to DDMMYY

Sr. No	Parameter	Response (Yes/No)	Score*
1	Is the delivery is through multiple channels? (Web/Mobile/Kiosk)		10
2	Is e-Payment is integrated with the service? (net-banking, payment bank, debit/ credit card, APB)		15**
3	Are the documents digitally Signed or e-Signed?		5 **
4	% of Turnaround Time to defined SLA	% ***	15
5	Is Aadhaar authentication built into the service (if permitted by law)?		5 **
6	Is the user interface in local language (also)?		10
7	Is the service integrated with DigiLocker?		5 **
8	Is the delivery through CSC also?		15
9	Is the service linked to domain-specific outcomes?		
10	If 'Yes' to 9, define appropriate outcome KPI's (upto top 3)		
10a	% of achievement of KPI1 against the target for the period	% ***	20** &
10b	% of achievement of KPI2 against the target for the period	% ***	
10c	% of achievement of KPI3 against the target for the period	% ***	
<b>TOTAL SCORE</b>			
<b>Notes</b>			
*	If the Response is 'Yes', give full score; otherwise '0'.		
**	If this parameter is not relevant to the Digital Service, allocate this score pro rata among the other parameters		
***	Give full score if % >= 80; half score if %>=60<80% and '0' if <60%		
&	In case the KPIs are more than 1, apportion the score (20) among the 2 or 3 KPIs		

## Annexure E

### Template for Assessing a Digital Service or a Portfolio (Pl see Ch 4)

**Name of the Department (Central / State Govt)**

**Name of the Digital Service / Portfolio of DS's :**

Sr. No	Parameter	Rating (0 to 5)	Weightage	Score
A	B	C	D	E (C X D)
<b>Assessing the DEFINE PHASE (22%)</b>				
1	Are the objectives of DS defined?		1	
2	Are the Objectives of DS SMART (Specific, Measurable, Achievable, Relevant, Time-specific)?		1	
3	Do the Objectives derive from SDG's or the Priority Programs of the Government?		2	
4	Are the user charges/ fees published/ Publicized?		1	
5	Has the DS been classified appropriately? And / Or Are the services organized along life-events?		1	
6	Are the services organized along life-events?		1	
7	Does the DS have personalization features?		1	
8	Has the DS been conceptualized and scoped consultatively?		1	
9	Does the DS provide end-to-end functionality?		2	
10	Is the DS integrated or linked to the related DS's?		2	
11	Have Service Levels been defined and publicized for DS?		2	
12	Has the QoS been defined for the DS?		3	
13	In case of a Portal, does the directory of DS's follow a standard taxonomy?		2	
14	Has the metadata of the DS been published?		1	
15	How well is the DS visible?		1	
<b>SUB-TOTAL (DFINE PHASE)</b>			<b>22 %</b>	
<b>Assessing the REALIZE Phase (DESIGN) 20%</b>				
1	Has User Needs Analysis been made?		2	
2	Has BPR been undertaken?		2	
3	Is the DS Secure		2	
4	Has survey of best practices been done?		2	
5	Is the DS Cashless? Is e-Payment is integrated with the service? (net-banking, payment bank, debit/ credit card, APB)		2	
6	Is the DS Contactless?		2	
7	Is the DS Paperless?		3	
8	Is the DS being delivered is through multiple channels? (Web/Mobile/Kiosk etc.)		1	
9	Are the forms simple? (less than 2-page long)		2	
10	Have the attachments been eliminated or reduced? (0 or 1 attachment)		2	
<b>SUB-TOTAL (DESIGN)</b>			<b>20%</b>	

Assessing the REALIZE Phase (UX and UI) 25%				
1	Is the DS easily 'discoverable', through the use of simple keywords in a web search?		2	
2	Does the system notify the user the regarding the current status of the application/ request w.r.t. current internal process?		1	
3	Are the on-screen messages to the user in simple, natural language?		1	
4	Does the DS provide 'undo', 'redo' buttons?		1	
5	Does the DS provide online validation of the inputs provided by the user?		2	
6	Does the site have online help feature?		2	
7	Has UNICODE been used for all labels, messages and form fields?		1	
8	Does the DS meet the special accessibility requirements of the differently abled?		2	
9	Are the forms in the DS downloadable and in an open format and fillable offline?		2	
10	Does the DS provide an acknowledgement to user on completion of the request?		1	
11	Does the site/portal provide SSO feature for accessing multiple services in the same session?		1	
12	Is the DS responsive?		3	
13	Does the DS ensure and assure the privacy of the personal information?		2	
14	Are all the user interfaces clear to an average user?		2	
15	Are the screens and messages precise?		2	
	<b>SUB-TOTAL (UX and UI)</b>		<b>25%</b>	
Assessing the REALIZE Phase (Architecture & Standards) 25%				
1	Has the Digital project adopted any Architecture framework or standard?		5	
2	Are MDDS Standards of GoI followed?		3	
3	Are the Regulations of UIDAI followed in the in the matters relating to security and privacy of Aadhaar data?		3	
4	Is the ISO 27001 complied with by the DS Project?		3	
5	Is an annual audit of the application/ DS Project conducted?		2	
6	Has an open API-based architecture been adopted to create an eco-system?		3	
7	Is the use of local language in compliant with UNICODE?		2	
8	Have the relevant documentation standards been followed in the development?		2	
10	Is there a version control system in place?		2	
	<b>SUB-TOTAL (Architecture &amp; Standards)</b>		<b>25%</b>	
Assessing the REALIZE Phase (Delivery) 8%				
1	Does the DS provide for the inclusion requirements of disadvantaged groups?		2	

2	Is the feedback and grievance redressal mechanism for the DS functional?		2	
3	Does the organization have a Unified Contact Centre?		2	
4	Is the DS delivered also in an assisted mode?		1	
5	Has the organization adopted appropriate capacity building exercises for operationalization of DS?		1	
	SUB-TOTAL (Delivery)		8%	
	GRAND TOTAL		100%	
Pl note that the total score shall be against a maximum of 500				