United Nations | Department of Economic and Social Affairs

Ministry of Technology and Communications (MTC)

Capacity Development and Consultation Workshop

Lao PDR National Data Governance Framework

10-11 May 2023 | Vientiane | Lao PDR

Wai Min Kwok
Senior Governance and Public Administration Officer
Division for Public Institutions and Digital Government
United Nations Department of Economic and Social Affairs (UN DESA)

Instructions

Go to

www.menti.com

Enter the code

2407 2832

Or use QR code

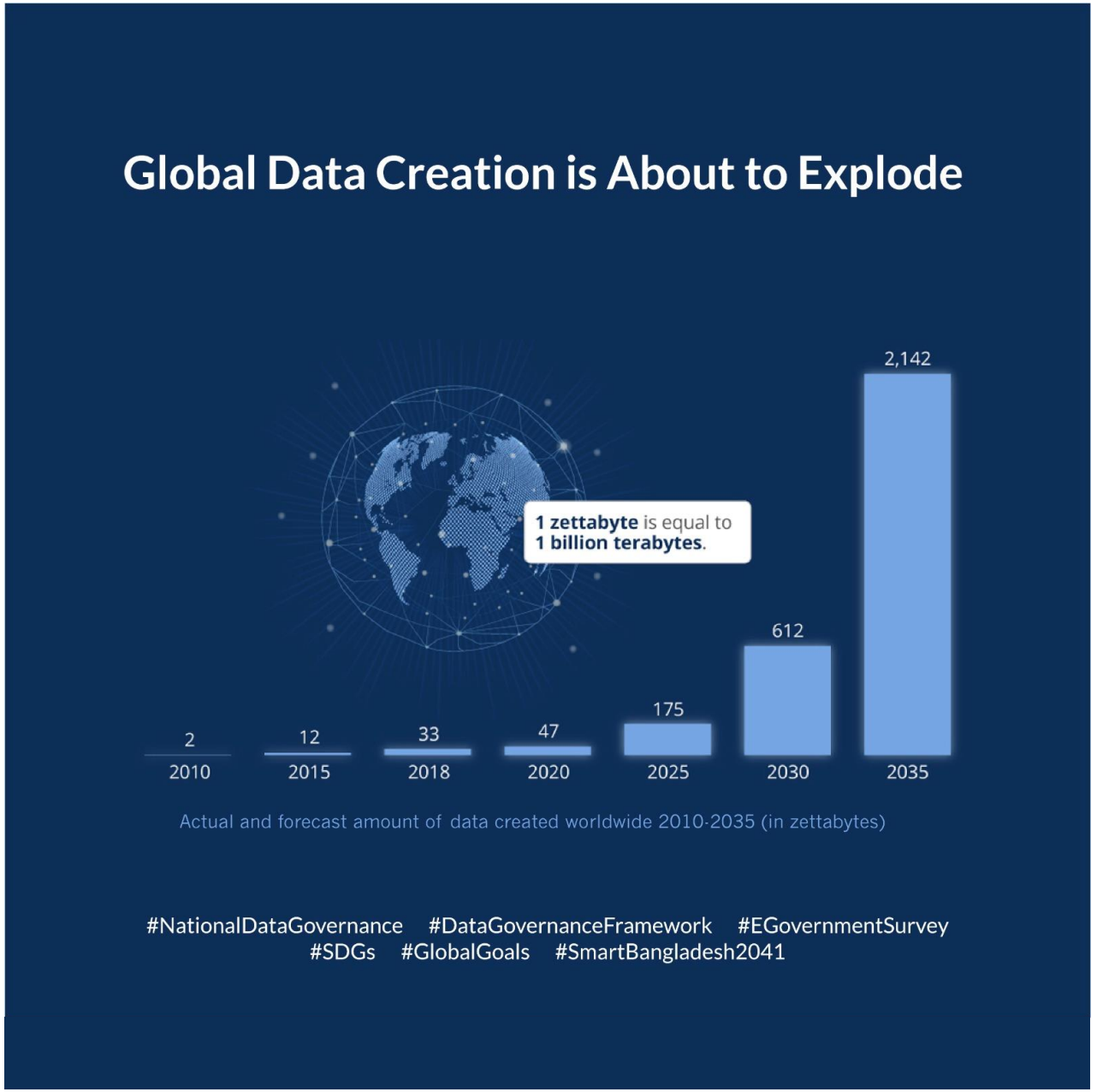
Data Trends

Digital data is "a reinterpretable representation of information in a formalized manner, suitable for communication, interpretation or processing", which is authored/generated by people or machines/sensors, or as a by-product.

Data grows rapidly, and will increase more than tenfold **from 175 zettabytes in 2025 to 2,142 zettabytes in 2035** (Note: One zetta is a "1" followed by 21 zeroes)

Close to 50 per cent will be stored in the public cloud

(Source: 2020 UN E-Government Survey; chapter 6)

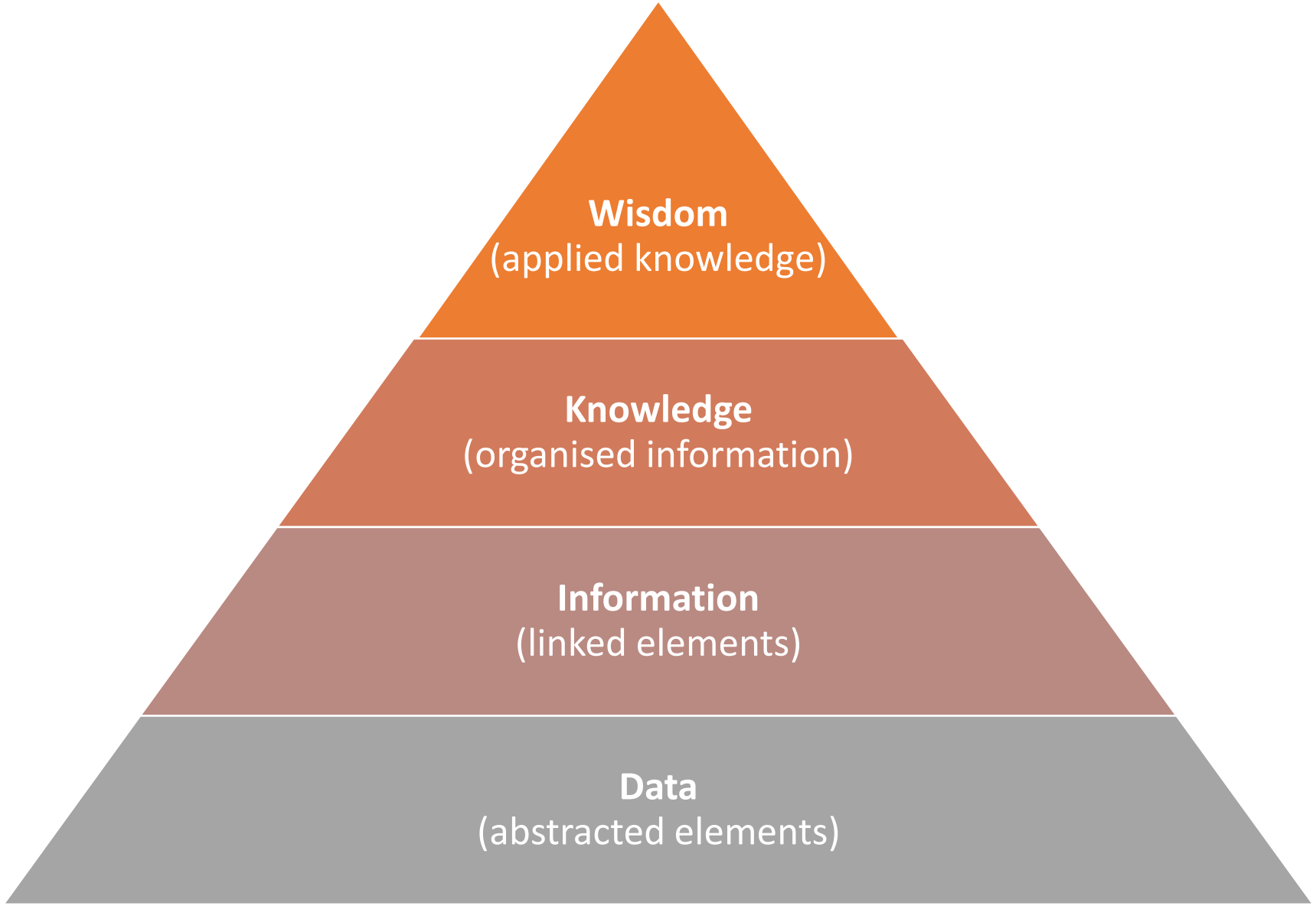


Global Data Trends

- Optimizing the use of data will **increase the productivity, accountability and inclusivity of public institutions**, in line with the principles embodied in Goal 16 of the 2030 Agenda.
- A data-centric government will also help **build trustworthiness and public trust.**
- **Many benefits around government data have yet to be realized,** especially in developing countries. The greatest obstacles to progress include a general lack of understanding of data and data science, low political priority and the absence of data leadership, resource constraints, and concerns about data quality, security and privacy.
- **Harvesting public value from data requires a long-term vision and approach** that involves mastering the economics and politics of data governance and management and effectively navigating the evolving data security and privacy landscape. As data governance encompasses much more than technical functions, Governments must employ **a holistic, whole-of-government/society approach in developing an integrated data governance framework supported by policies, institutions, people and processes.**

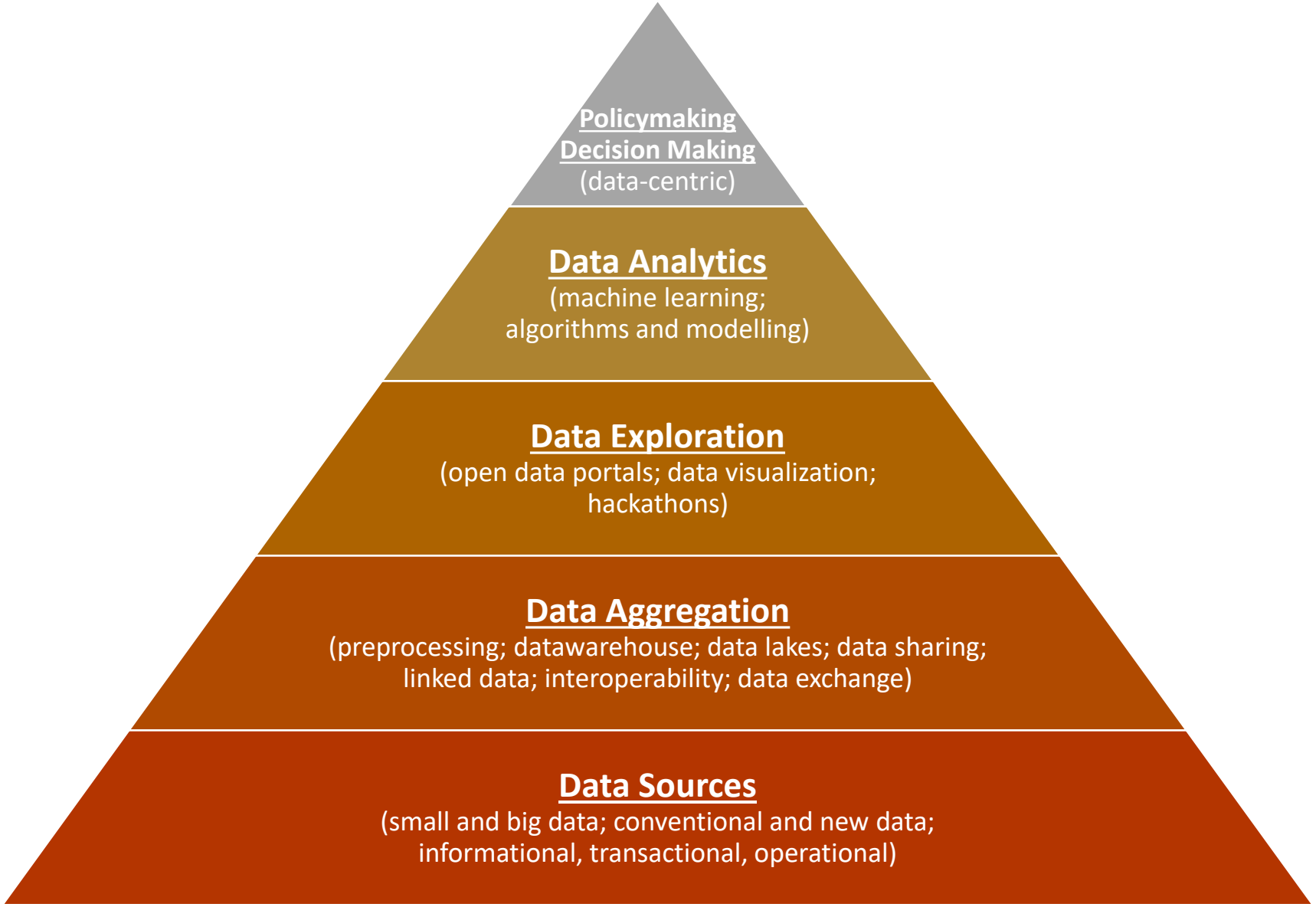
DIKW Pyramid

Data → Information → Knowledge → Wisdom



Data in Digital Government

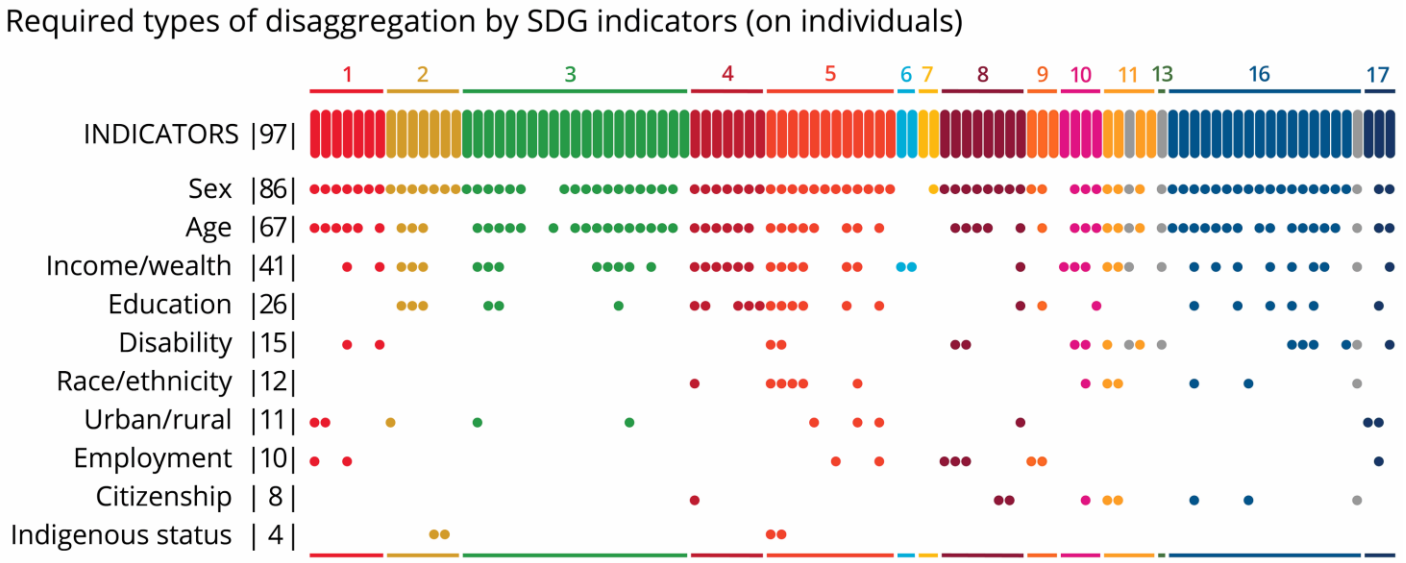
Sources → Aggregation → Exploration → Analytics → Policymaking



(Source: 2020 UN E-Government Survey; chapter 6)

Data on SDGs, Data for SDGs

- **Using data for SDGs:** data can help achieve the SDGs by providing critical information on available resources, government operations, public services, and population demographics. These insights can inform national priorities and help determine the most effective path for action on national issues.
- **Data on SDGs:** Data can help ensure that plans to achieve the SDGs are evidence-based, and that their outcomes are measurable. Data can help assess the SDGs in three main ways namely: a facilitator of standards, a tool for accountability and an evidence base for impact assessment.
- **Impact assessment:** Data can reveal inequalities and disparities in income, wealth and access to government services and provide a basis for assessing progress over time.



SDG indicators requiring data on individuals and families.

Definition of Data Governance Framework

Data governance framework defines the **rules, processes and behaviours related to the collection, management, analysis, use, sharing and disposal of data – personal and/or non-personal.**

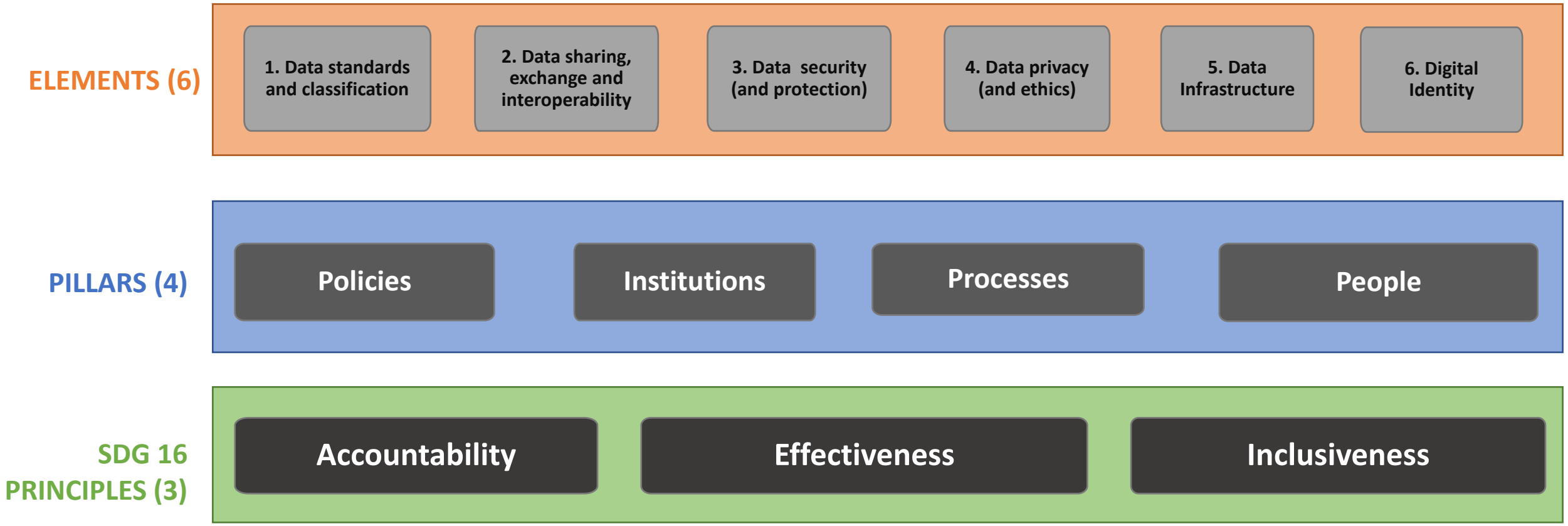
Effective data governance should both **promote full benefits and minimize (potential) harms** at each stage of relevant data cycles.

Source: Adapted from “Data Governance and the Data Sphere”, Tim Davies

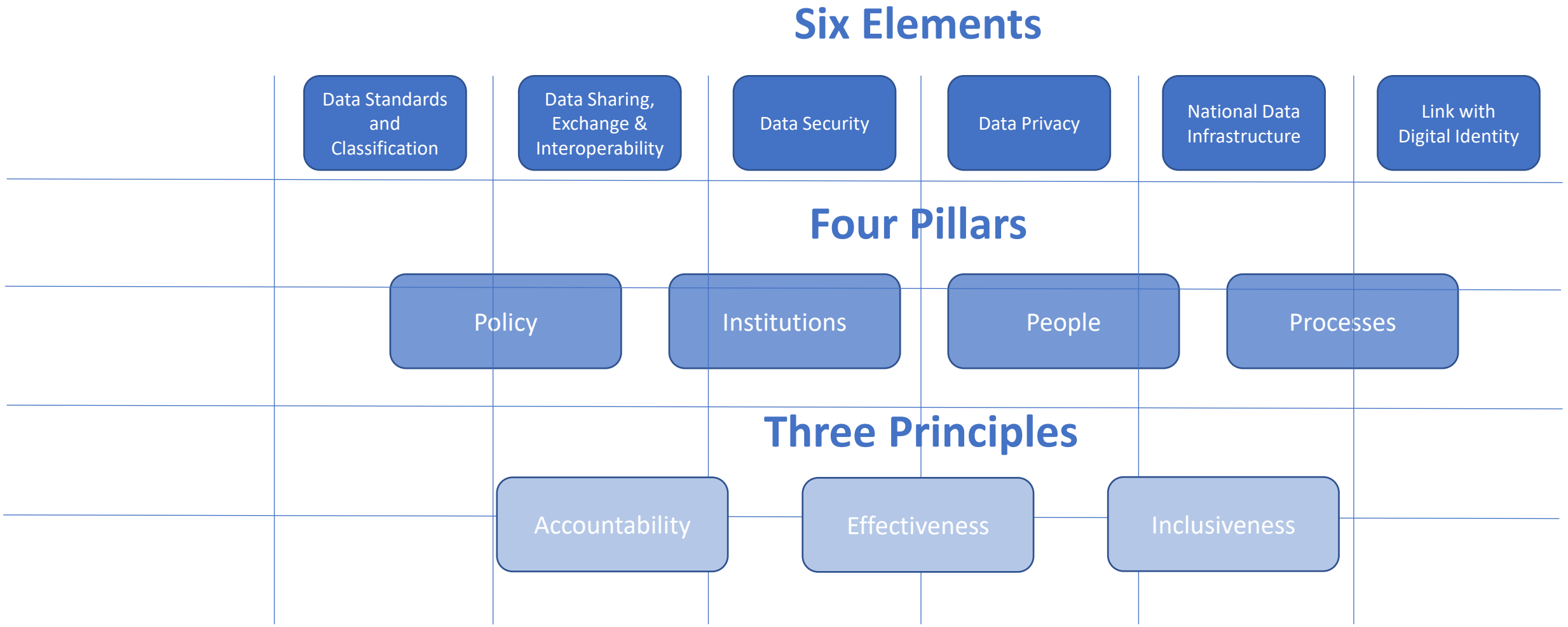
UN DESA's Data Governance Approach

- Supporting the achievement of the Sustainable Development Goals (SDGs)
- From whole-of-government to whole-of-society
- Principle-based (3), pillars-supported (4), across different six (6) elements
- Across different levels (multilevel governance)
  - national level
  - sectoral level
  - institutional
  - regional level
  - Cross-border data governance (ASEAN, Asia Pacific, Global)
- Building data literacy, at institutional and individual levels

UN DESA' s National Data Governance Framework



United Nations | Department of Economic and Social Affairs



Principles of effective data governance for sustainable development

SDG 16
PRINCIPLES (3)

SDG 16 PRINCIPLES (3)

Accountability | Effectiveness | Inclusiveness

Accountability (and transparency)**:** To have a well-functioning, democratic society, people and other stakeholders need to be able to monitor government initiatives and their legitimacy. An effective data governance framework allows people to monitor data streams which improves the accountability and transparency of government.

Effectiveness (reduction of administrative costs / more effective public services/institutions): Data serve diverse needs in government agencies. They are used for reporting, decision-making, monitoring, and evaluation, and make it possible for public administrators to meet legal, compliance and risk management requirements. At a more fundamental level, data enable work processes across business units and provide access to vital public information.

Inclusiveness: Making data equity and inclusion as a priority..

Creation of public value: Data can strengthen the capacity of institutions to fulfil their mandates, create public value, and contribute to the public good.

Principles of effective data governance for sustainable development

Effectiveness

Accountability

Inclusiveness

	Commonly used strategies to operationalize the principles	
Essential elements and related principles	Direct relation to data governance, strategies or policies	Indirect relation to data governance, strategies or policies
Effectiveness: competence, sound policymaking, collaboration	• Data sharing • Investment in e-government • Strengthening national statistical systems • Monitoring and evaluation systems	• Strategic planning and foresight • Results-based management • Performance management • Financial management and control • Risk management frameworks • Science-policy interface • Network-based governance
Accountability: integrity, transparency, independent oversight	• Proactive disclosure of information • Open government data • Registries of beneficial ownership • Lobby registries	• Budget transparency • Independent audit
Inclusiveness: leaving no one behind, non-discrimination, participation, subsidiarity, intergenerational equity	• Data disaggregation • Universal birth registration	• Accessibility standards • Participatory budgeting • Multilevel governance • Strengthening urban governance • Long-term territorial planning and spatial development

Source: United Nations, Economic and Social Council, "Relating the principles of effective governance for sustainable development to practices and results: note by the Secretariat", E/C.16/2019/4 (23 January 2019), annex, available at https://undocs.org/en/E/C.16/2019/4.

Data Equity and Inclusion in data management

Data Equity – why is it important?

- data equity - disaggregated data that refers to data that is categorised by socio-demographic groups such as indigenous communities, gender identities, disability groups and marginalised communities

- It's the right thing to do – imagine a report without any data or statistics on gender, disability, indigenous communities, youths etc?

- data equity are good practices to guide researchers or data custodian/stewards to work with data through the lens of equity, diversity and inclusion.

- the data life cycle (collecting, managing, disseminating etc) should ensure a commitment to equity, diversity and inclusion

Bangladesh data management workshop – stakeholders were invited from the disability, women's NGOs & youths in BD – we tried to ensure a multistakeholder process

Importance of data equity and inclusion

- UNDESA is committed to improving diversity, equity and inclusion efforts – all activities and initiatives are aligned to the SDG goals such as Goal 5 on gender equity…e.g. analysis of Open Data can highlight shortcomings in the ways that education, health and other sectors serve women and girls in surveys etc.

- Many organisations and governments struggle to use a data-driven and gender-responsive approach to diversity and social inclusion when developing data management good practices

- When designing surveys or collecting data, we need to have strategic intent – we all have different perspectives and tend to develop surveys that only reach a certain group of people rather than the communities that are usually left behind – this could be because of various reasons such as lack of resources, lack of capacity, lack of human capacity

Digital government experts focussing on social inclusion process

Importance of data equity and inclusion

- Disaggregated data should take into account gender, age, accessibility requirements - these categories are important – many organisations and governments are also looking at sexual orientation, gender identity and disability in their surveys and questionnaire. But this depends on the cultural sensitivity – it can be tricky…

- Data management should be used to drive strategic planning and decision making processes...

- Evidence based data is critical in engaging key partnerships. E.g. if an organisation is hiring only male technical experts than we need to understand why and figure out a way to increase participation of women in the technical field – this will also require a policy change and institutional change or mindset

Regional event highlighting the need to have gender-responsive data mangement practices

Data collection - Data Equity and Inclusion

It’s important to start somewhere – how can we keep data equity and inclusion at the forefront of data collection? It’s important to know:

- **Why are we collecting this data?**
- **Who is the end user of this data?**
- **Who will benefit from this data?**
- **What are the policies in place to ensure data management practices?**
- **What decisions can we make through data equity and inclusion?**

Example – if the ministry of agriculture research team is collecting data to understand the number of female and male farmers, but all of the data comes from a testing pool of men only…this will mean that when we design market information systems, we might just target the male farmers – is this right?

Start with equity and inclusion in mind!

- Good data management governance practice is key
- In an organisation or government, we need to start with equity and inclusion in mind – when choosing data stewards, data custodians and data champions, think of equity and inclusion
- Having a diverse representation of people in your team will ensure good practices, policies and processes
- **Amplify the voices of your communities** that you serve – they should have a say in what data are collected, how data are used, why their data is used and how their own identities are captured – this is a good data management practice that we should uphold!

MTC team - walking the talk on gender equality…

Discussion questions (5 minutes)

- In groups of 2 or 3, discuss the word data equity, inclusion and diversity – does your organisation or government agency consider equity, inclusion and diversity?
- What are some of the good data management practices in your organisation or government that ensure data equity, gender and social inclusion?
- How can we ensure that our policies and data management framework supports data equity, inclusion and diversity?
- Are you amplifying the voices of your communities when collecting their data? How?

Why 4 pillars of data governance (DG)?

Policies - a means of ***legitimizing*** *DG (legality, regulatory)*

Institutions -a means of ***empowering and institutionalizing*** *DG (leadership; institutional)*

People - a means of ***capacitating and supporting*** *DG (capacities, capabilities)*

Processes - a means of ***enabling and operationalizing*** DG *(push/pull factors)*

P1 Policies

Evidence-Based Policymaking Act of 2018, United States of America

While evidence-based policymaking is not new and is widely supported by academic research, it is still uncommon to find a national policy or strategy supporting this approach.

In 2016, the United States Commission on Evidence-Based Policymaking was created to explore ways in which the Government could make better use of its data to inform future government decisions. The Commission spent a year and a half in deliberations and fact-finding and in September 2017 issued a report in which priority was assigned to expanding access to data, ensuring privacy, and strengthening the capacity of the Government to generate and utilize evidence to evaluate budgetary spending on programmes affecting health, education and economic well-being.

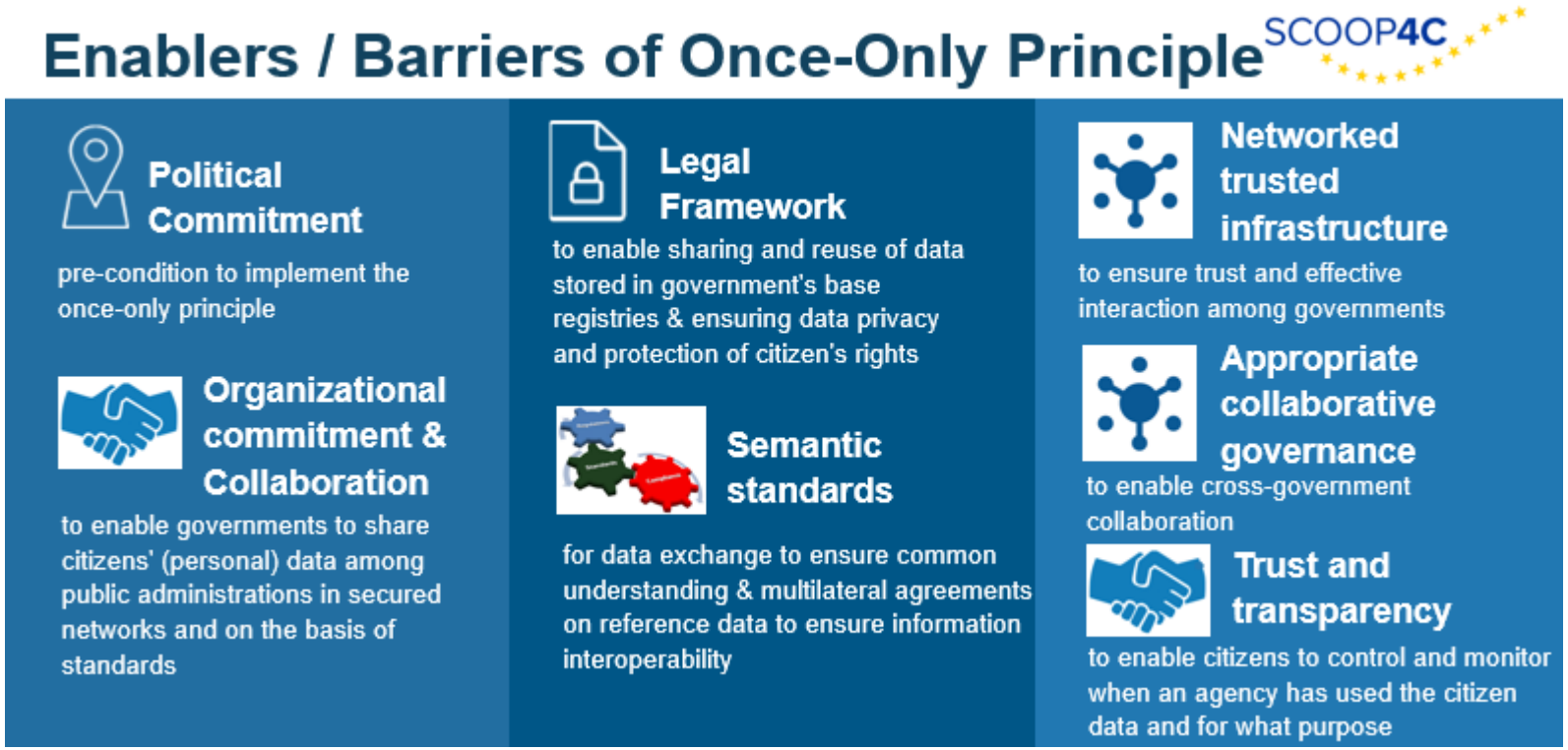
The Foundations for Evidence-Based Policymaking Act (the Evidence Act) received congressional approval in 2017 and 2018 and was signed into law by the President in January 2019 to facilitate the implementation of a number of the Commission's recommendations. Shortly thereafter, the Federal Data Strategy was issued by the White House Office of Management and Budget (OMB) as a second implementation mechanism, identifying data as a strategic asset and outlining the principles and practices to which federal agencies would have to adhere in the execution of the Act. The OMB published multiple guidance documents to help agencies address some of the Commission's recommendations; included in the documents were provisions for designating evaluation officers, appointing chief data officers, identifying statistical experts, developing "learning agendas", and incorporating new actions into annual budget and performance plans. For agencies that already have data strategies in place, such as the Department of Health and Human Services, the Evidence Act constitutes an additional mandate to strengthen capacity for using data for evidence-building purposes.

The Evidence Act establishes new expectations for open data, data inventories, and data management. It also reinforces the longstanding Confidential Information Protection and Statistical Efficiency Act, a strong privacy and confidentially law that compels the Government to take all necessary steps to protect data when confidentiality has been promised. A national secure data service (recommended by the Commission but not yet established) is expected to improve data access and will also strengthen privacy protection.

Sources: United States, Foundations for Evidence-Based Policymaking Act of 2018, H.R. 4174 - 115th Congress (2017-2018), available at https://www.congress.gov/bill/115th-congress/house-bill/4174; see also J. Heckman, "Federal Data Strategy to impact all feds, not just 'data plans for data wonks'", *Federal News Network* (2020), available at https://strategy.data.gov/; and Data Coalition (2020), available at https://www.datacoalition.org/two-years-of-progress-on-evidence-based-policymaking-in-the-united-states/.

P1 Policies

- The “data-once only” or “once-only principle” ensures that individual users and businesses provide data to public administration only once, while public bodies exchange this data when requested and in compliance with the relevant regulations.



P2 Institutions

Data leadership is essential for the implementation of the national data strategy and the data governance framework. Often required within this context is an institutional review that could transform the way agencies in all sectors and at all levels effectively deploy government data as a strategic asset. (e.g. Chief Data Officer)

Source: UN E-government Survey, chapter 6

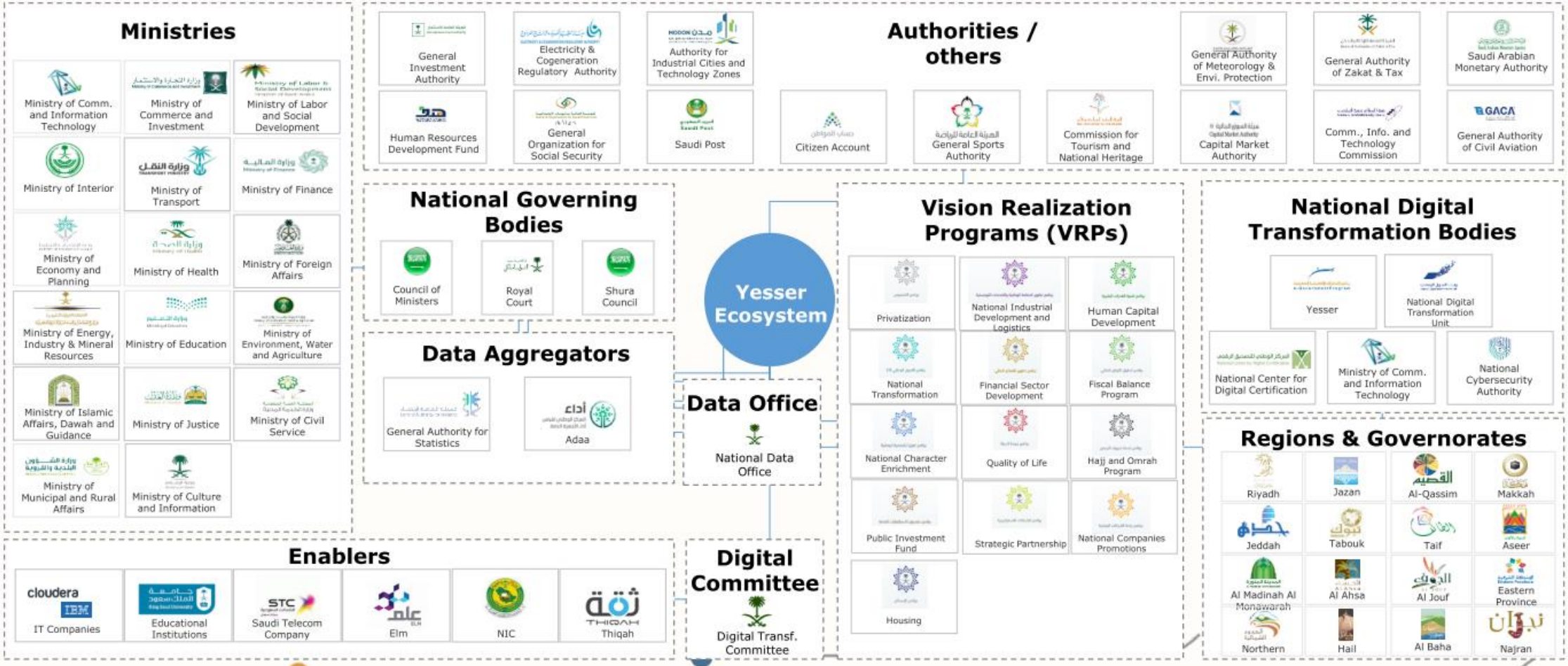
Data stewards: individuals or teams within data-holding organizations who are empowered to proactively initiate, facilitate and coordinate data collaboratives toward the public interest.
(e.g. Data Bureau, Data Officers)

Source: "Wanted: Data Stewards: (Re-)defining the roles and responsibilities of Data Stewards for an age of data collaboration"

Navigating Complex Ecosystem

Yesser operates in a complex ecosystem spanning the entirety of the Kingdom

Non- Exhaustive



Source: Deloitte Research and Analysis

P3 People

- Data roles
- Data literacy | capacity development
- Engagement (G2G, G2P, G2B)

Data roles and data literacy

Roles (non-exclusive)	*Description*	*Required skillsets*
Policymakers and decision-makers	Ministers, Secretaries, Directory General, or any other senior officials with decision-making roles.	Understand and interpret data for insights and decision-making
Data Stewards	Data leadership functions that include: 1. Chief Data Stewards / Officers (national and/or-subnational) 2. Chief Digital Strategy Officer 3. Chief Information Officer 4. Chief Government Technology Officer 5. Chief Evaluation Officer 6. Chief Innovation Officer	Leadership skills (both technical and policy) to provide data oversights, policy and technical frameworks for data governance and the data ecosystem
Policy analysts	Those with analytical skills, especially with domain expertise of specific sectors (e.g. health, education); assist in policy analysis in supporting public policymaking	Sectoral domain knowledge; data analytical skills; using use BI (business intelligence) and self-service analytics tools
Public Officers (administrators)	Majority of public sector employees	Use of data for daily operations or reporting; to be able to benefit from data visualisations, charts, etc.
Data scientists	Technically trained specialists in data analytics and data science; "power users"	Specific skills in Python and other data tools, data services and infrastructure; includes AI, blockchains, big data specialists, etc.

P4 Processes

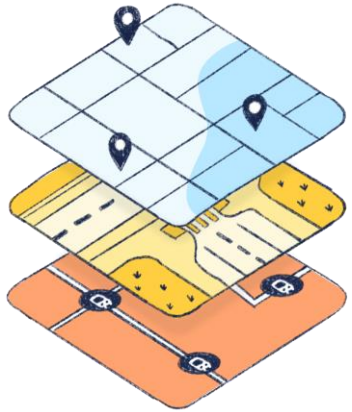
1. Data is not only an **input**; but also **output** of e-government
2. Data is used in **both front- and back-office** of e-government
3. **Some data are used; many are not,** including those generated through e-services (administrative)
4. Some data are not used **optimally**; some data are also **misused**
5. While there is a **lack of data**, there is also **data and information overload**
6. Government's quadrupole role: **producer, consumer, regulator, and platform provider (enabler)**

(Source: 2020 UN E-Government Survey; chapter 6)

P4 Processes

From data silos to data platforms, to data ecosystems

Data silos



Data/Digital
Platforms
e.g CamDX

Data/Digital
Ecosystems

Instructions

Go to

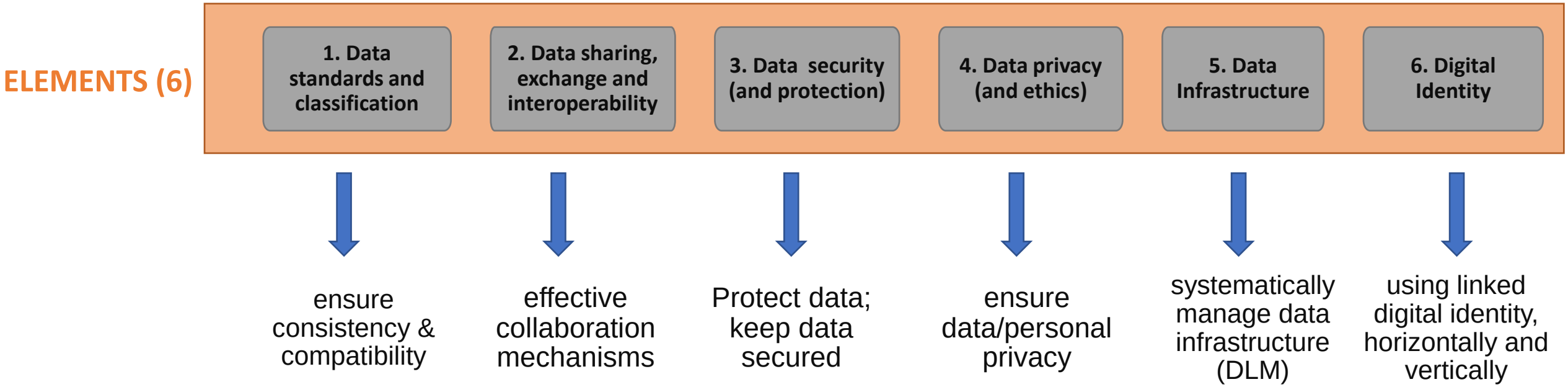
www.menti.com

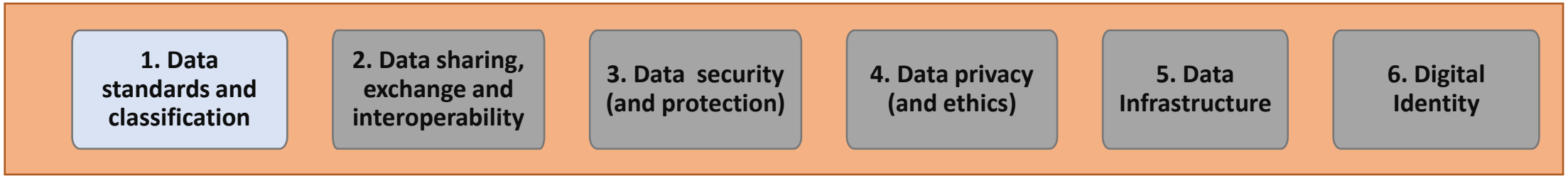
Enter the code

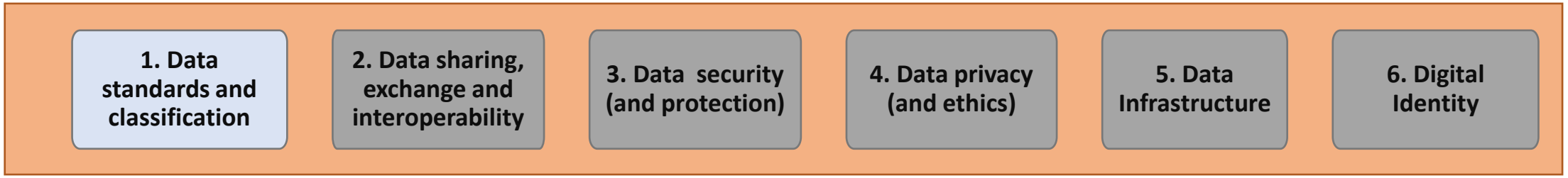
2407 2832

Or use QR code

Why 6 elements of data governance (DG)?



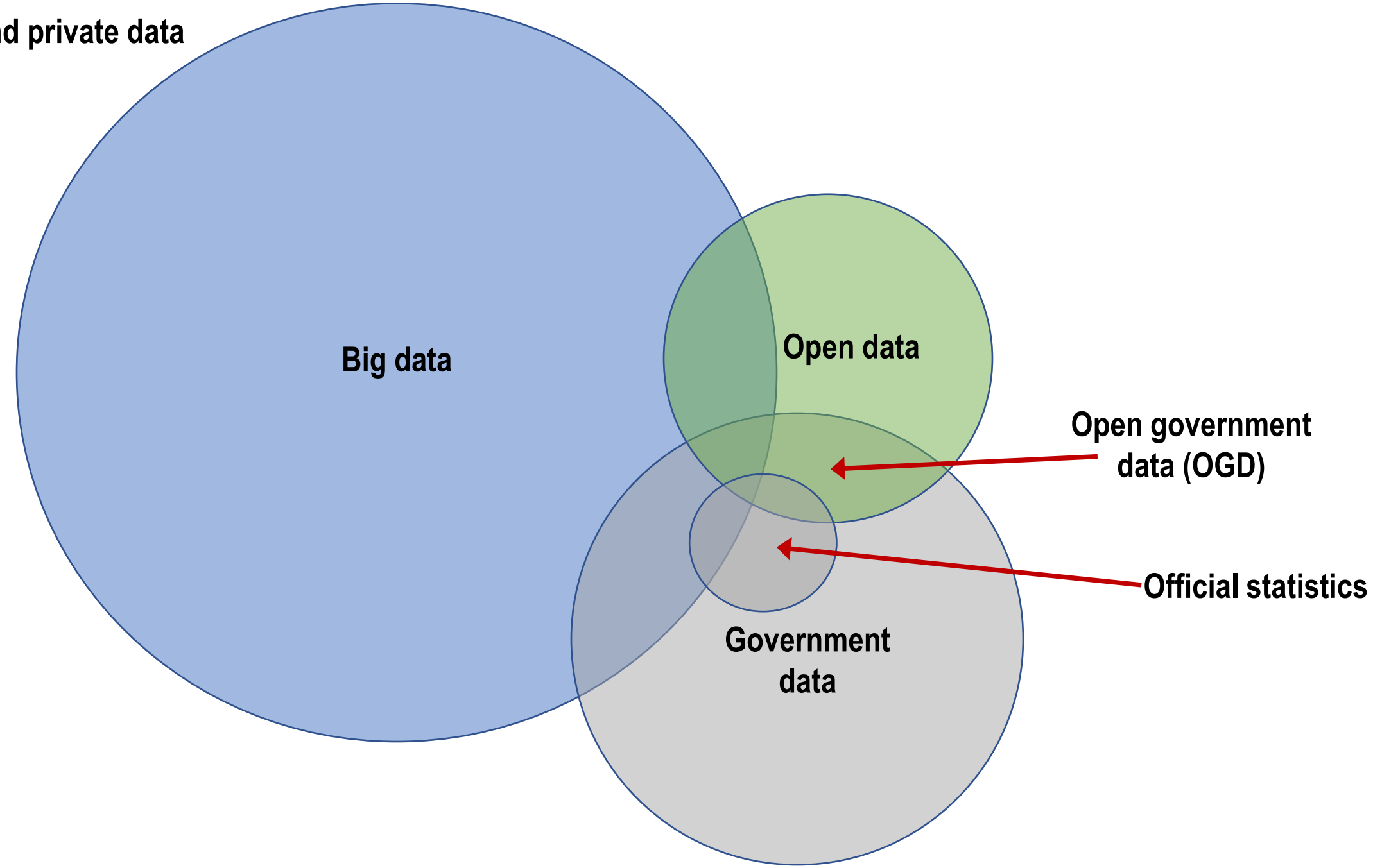

1. Data standards and classification
2. Data sharing, exchange and interoperability
3. Data security (and protection)
4. Data privacy (and ethics)
5. Data Infrastructure
6. Digital Identity



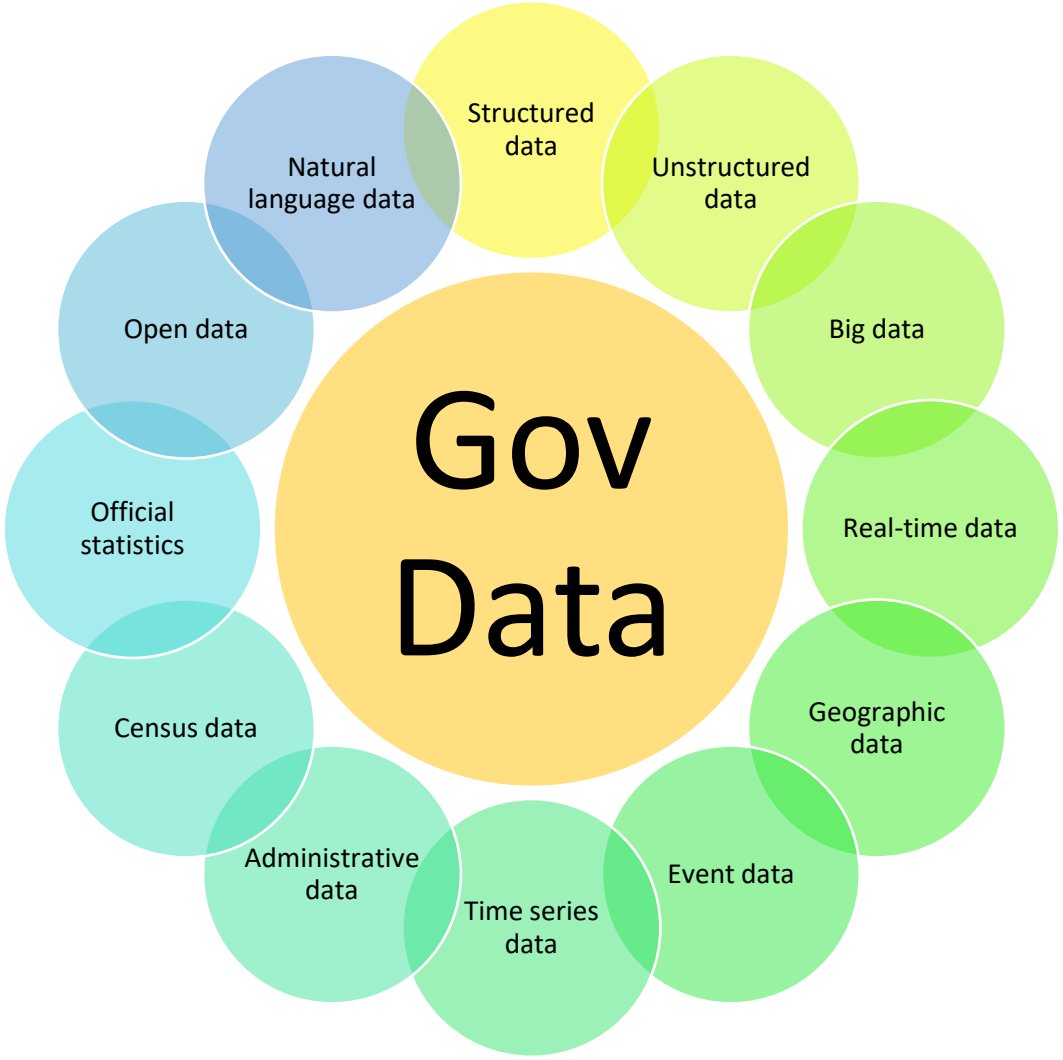
Data standardization and classification are necessary to ensure the consistency and compatibility of data and data-related processes in the public sector, especially in integrated or whole-of government contexts.

Case:
In the Republic of Korea, policies and guidelines focusing on data classification and standardization have been established, enforced and amended over the years to address emerging trends. The country's deliberate effort to ensure continued relevance is reflected in the amendment of the Guidelines for Database Standardization in Public Institutions, established in 2009, to reflect updates introduced in 2019.

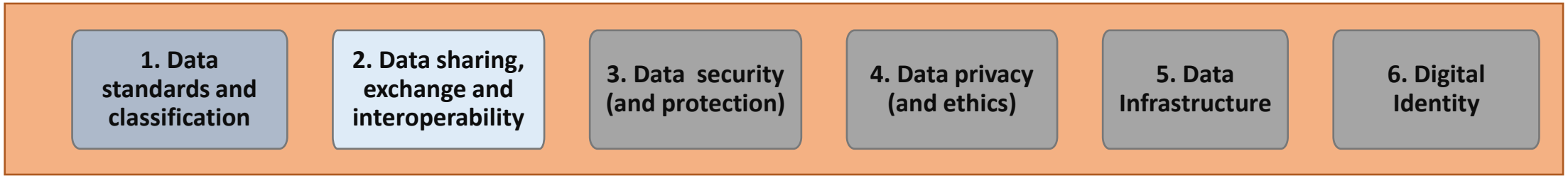
Public data and private data

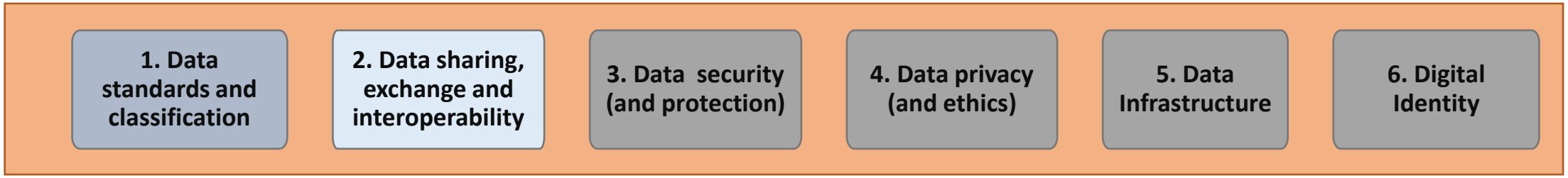


Types of Government Data



Data type	Description
Public data	Includes all data that are available in the public domain, including those created by governments, academia, civil society and the private sector.
Government data	A subset of public data "recorded and documented in any manner and on any medium and obtained or created upon performance of public duties provided by law or legislation issued on the basis thereof.
Census and survey data	Data collected through observation of a given population or universe, including demographic data and other survey data on items such as housing, land use, agriculture and business.
Administrative data	Data collected by government agencies on their operations such as data on public service transactions in sectors such as health, justice and education; administrative registers of persons and legal entities and the records of ministries, departments and specialized agencies, including tax returns, social services records and customs data.
Open Data	Information that is open in terms of access, redistribution, reuse, absence of technological restriction, attribution, integrity, no discrimination.
Open Government Data	Data open to and available in the public domain in various (including machine-readable) formats and normally licensed for all to access, use, modify and share. Essentially, all OGD are government data, but not all government data are OGD, see figure 1.
Big data	Describe the exponential growth and availability of data, both structured and unstructured and is defined by 3 V's: Volume, Velocity and Variety. Big data analytics can be used for deeper and more complex tasks such as social media sentiment analysis.
Data Science	The study of the generalized extraction of knowledge from data by employing machine learning, predictive and prescriptive methodologies, thereby creating direct value on an experimental and ad-hoc basis.
Geospatial data	Data and information that have an implicit or explicit association with a geographical location
Real-time data	Constant streams of live data delivered immediately after collection. Such data show the actions of Governments and/or people almost instantaneously and are usually deployed with the expectation of a rapid response such as the monitoring and analysis of Twitter feeds to understand the movements (or migration) of particular populations within a country in order to anticipate and plan for e-service needs at the subnational level.


1. Data standards and classification
2. Data sharing, exchange and interoperability
3. Data security (and protection)
4. Data privacy (and ethics)
5. Data Infrastructure
6. Digital Identity



There are various options for sharing, linking or exchanging data through platforms that offer advanced digital services, such as data APIs, data services or data markets. For such platforms, integration is key, and connectivity is critical. The ability to integrate across multiple systems, including legacy systems, is also required, as is the application of data- or user-centric policies such as the once only principle for data provision.

Case:
The Ministry of Health in Bangladesh has undertaken an initiative to develop e-health data standards and an interoperability framework for the database systems that have been or will be developed, benefiting not just the Ministry and other government agencies but also development partners, the private sector and civil society organizations.

EIF Conceptual Model

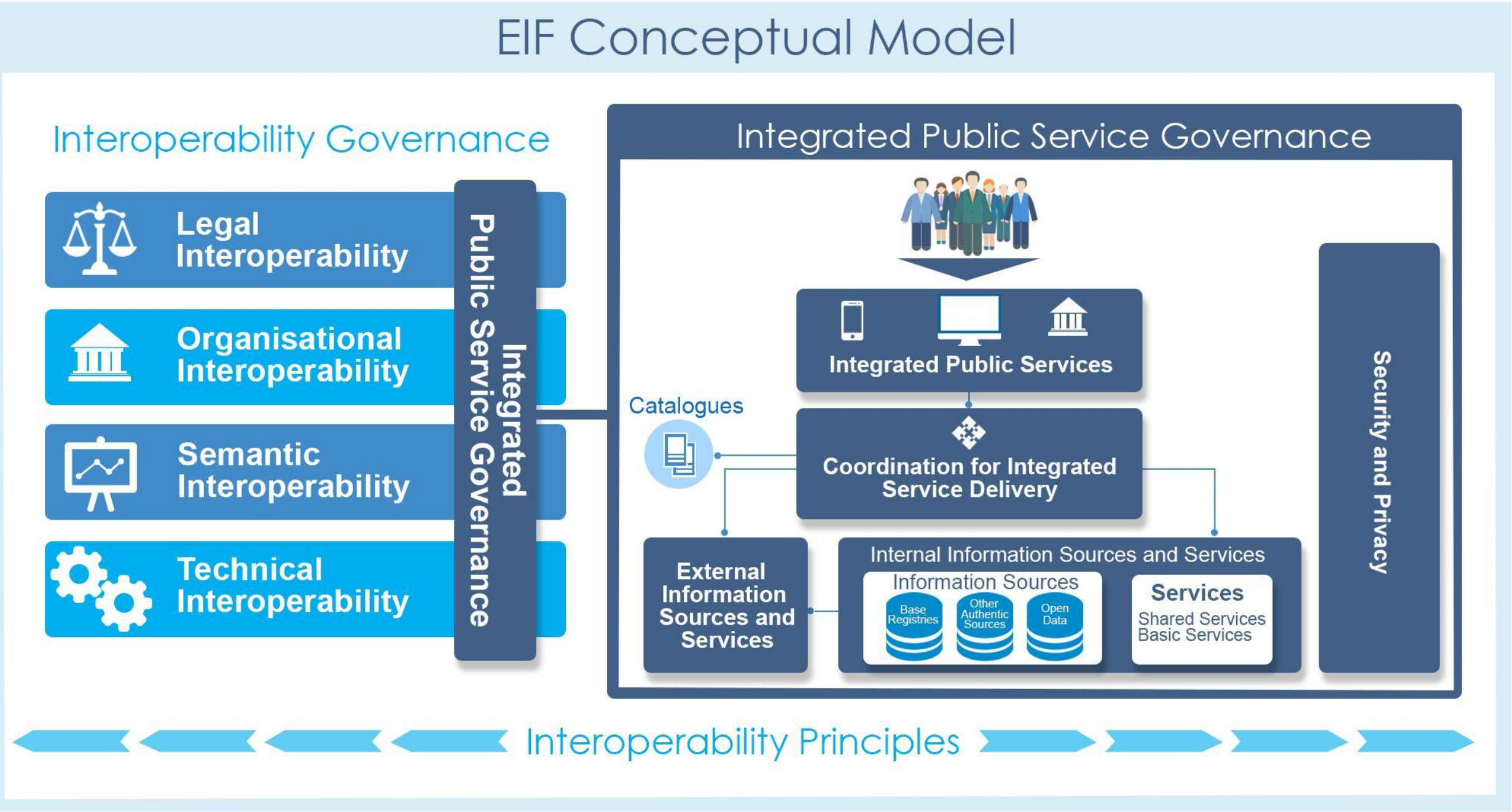
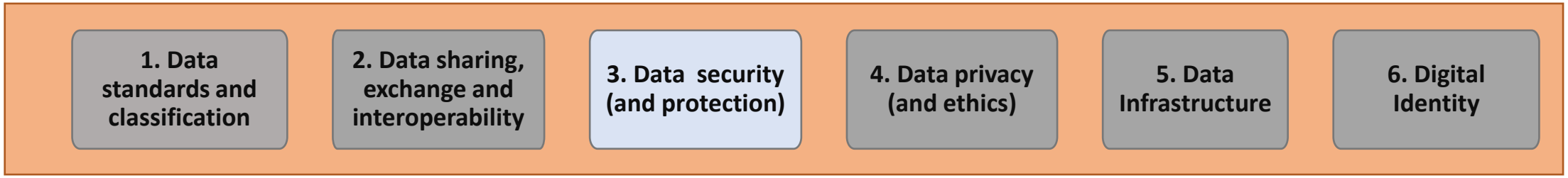
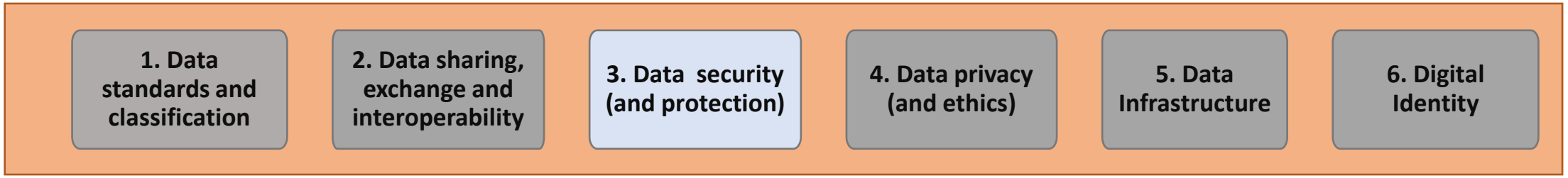


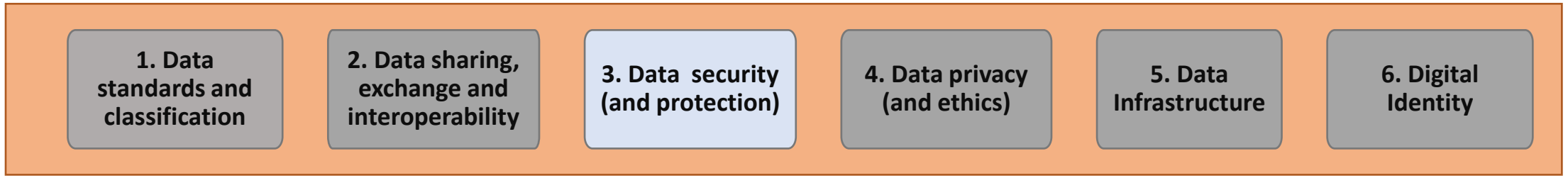
Image Source: [Europa.eu]


1. Data standards and classification
2. Data sharing, exchange and interoperability
3. Data security (and protection)
4. Data privacy (and ethics)
5. Data Infrastructure
6. Digital Identity

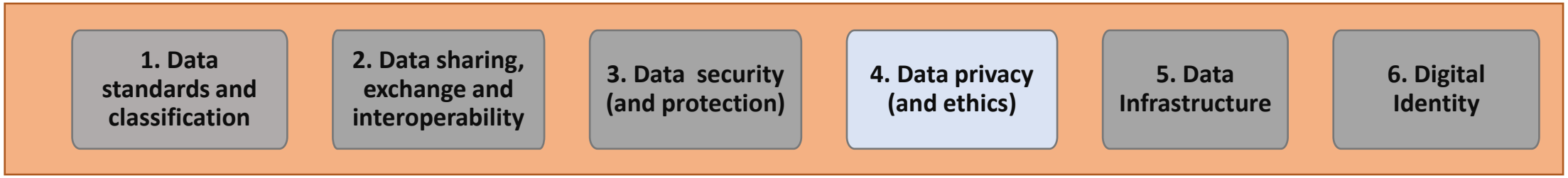


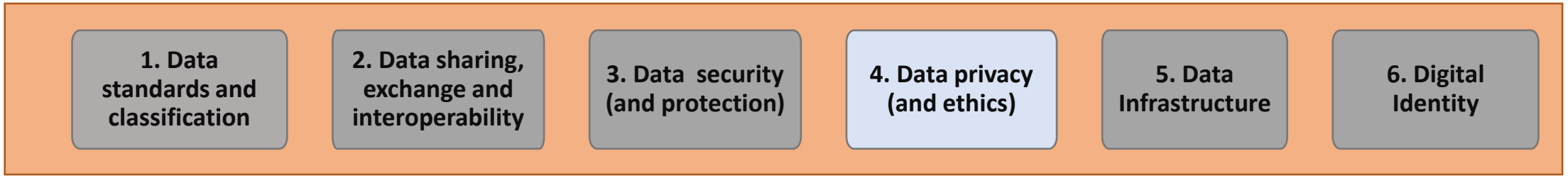
- Data protection is **protecting data against unlawful or unauthorised processing, access, loss, theft, destruction or damage.**

- Example: General Data Protection Regulation, 2018; binding for European Union member States. This Regulation lays down rules relating to the protection of natural persons with regard to the processing of personal data and rules relating to the free movement of personal data.

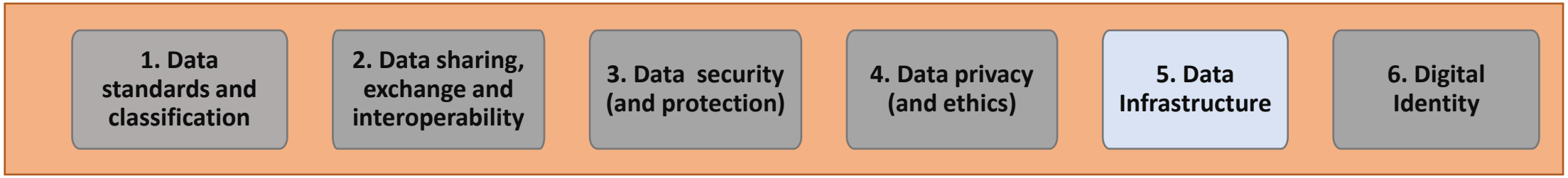


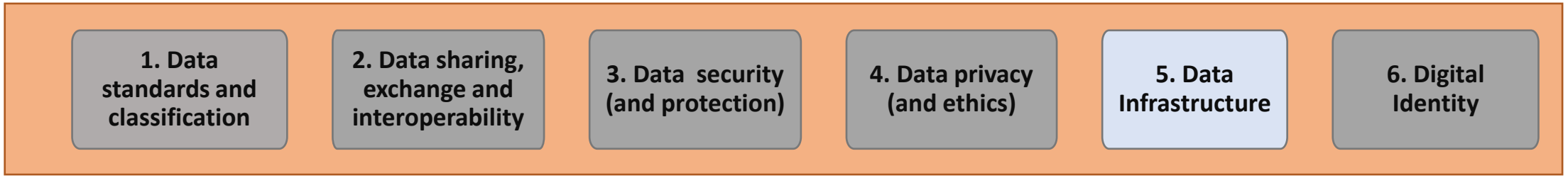
- **Data security encompasses every aspect of information security** from the physical security of hardware and storage devices to administrative and access controls, as well as the logical security of software applications. It also includes organizational policies and procedures.
- **When properly implemented, robust data security strategies will not only protect data against cybercriminal activities, but they also guard against insider threats and human error, which remains among the leading causes of data breaches today.** Data security involves deploying tools and technologies that enhance the organization's visibility into where its critical data resides and how it is used. Ideally, these tools should be able to apply protections like encryption, data masking, and redaction of sensitive files, and should automate reporting to streamline audits and adhering to regulatory requirements.


1. Data standards and classification
2. Data sharing, exchange and interoperability
3. Data security (and protection)
4. Data privacy (and ethics)
5. Data Infrastructure
6. Digital Identity



- **Accountability in the use of data.** Governments must be aware that they may cause privacy problems. Solutions includes data triangulation, data minimization, data anonymization, differential privacy, and the use of synthetic data.
- **Ethics can be considered a reflection of society's collective moral understanding.** Judgements on the appropriate use of government data are always governed by a wider moral consensus for the difficulties on codifying ethics in laws.
- Example: Australia's Privacy Act of 1988 (Privacy Act) was introduced to promote and protect the privacy of individuals and to regulate how Australian Government agencies and organizations with an annual turnover of more than $3 million, and some other organizations, handle personal information.


1. Data standards and classification
2. Data sharing, exchange and interoperability
3. Data security (and protection)
4. Data privacy (and ethics)
5. Data Infrastructure
6. Digital Identity

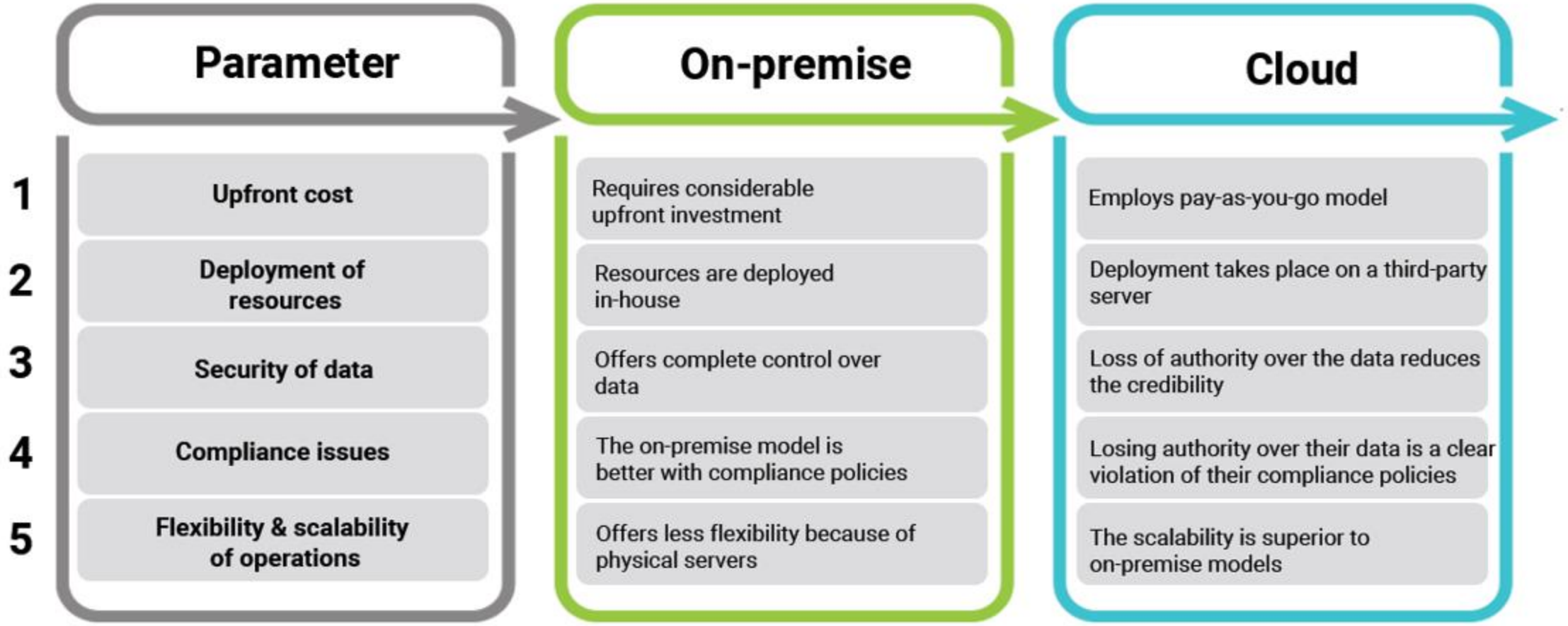


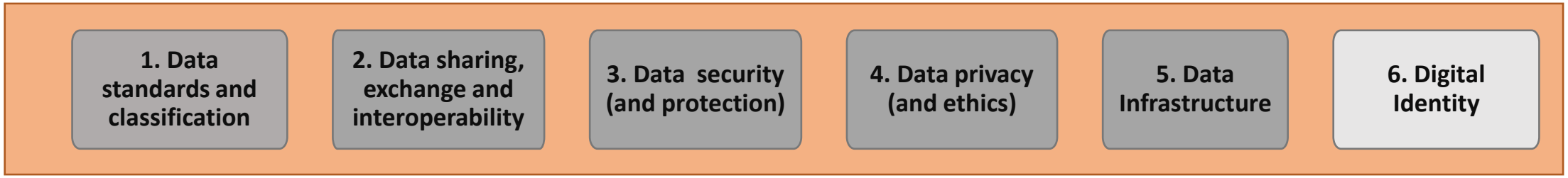
- Silos versus shared infrastructure
- Government-owned data center versus commercial data center
- Government-owned cloud versus commercial cloud
- Data service, data APIs, etc

Case:
In order to make the most of Cloud Computing, **the Government of India has commenced an ambitious initiative –"GI Cloud", which has been named "MeghRaj".** NIC Cloud Services offer a variety of service models to meet requirements such as Platform as a Service (PaaS), Infrastructure as a Service (IaaS) and Software as a Services (SaaS). The architectural vision of GI Cloud consists of a set of discrete cloud computing environments spread across multiple locations, built on existing or new (augmented) infrastructure, following a set of common protocols, guidelines and standards issued by the Government of India.

एनआईसी NIC NATIONAL CLOUD INITIATIVE OF MeghRaj

On-premise datacenter versus cloud computing




1. Data standards and classification
2. Data sharing, exchange and interoperability
3. Data security (and protection)
4. Data privacy (and ethics)
5. Data Infrastructure
6. Digital Identity

2030 Agenda for Sustainable Development

- **16.9 By 2030 provide legal identity for all including free birth registrations**

- Legal identity is acknowledged to be catalytic for achieving at least 10 of the Sustainable Development Goals.

4. *Abide by international law and ensure justice*

- **Legal identity for all**, end to statelessness and protection of internally displaced persons, refugees and migrants

"… to ensure that **everyone is seen and recognized, measures to prove legal identity** (target 16.9 of the Sustainable Development Goals) and end statelessness, including by closing legal loopholes, and disaggregating data by age, gender and diversity are urged. **People on the move require special attention, support and protection**.""

Reference: Report of the Secretary General "Our Common Agenda" para. 36.

Key Messages on Digital Identity

- **Digital IDs unlock great opportunities** (e-services, banking commerce, remote services, collaboration, etc.), but they [by and large] **rely on effective data governance and robust systems**
- Hence, there is a need to **improve, digitize and coordinate with existing civil and vital registration systems, through a whole-of-government approach**
- **Emerging technologies**: blockchain and other DLTs, AI can improve data processing, verification, and authentication processes; **biometric data is increasingly being used for identity verification, but it is not risk-free.** Risk of data misuse or breach; incidents have a greater impact (some data not replaceable)
- **Data governance in privacy and protection is** considered a priority in the implementation and management of digital ID.
- **Leapfrogging physical ID systems** may run the risk of excluding communities or populations; at the same time, implementing **digital ID may lead to a more rapid deployment of e-government services**
- There is a **strong need for legislation, institutional support and implementation guidelines**
- **Partnerships between public and private sectors**, as well as with international actors and academia to build more effective and efficient digital ID solutions

Instructions

Go to

www.menti.com

Enter the code

2407 2832

Or use QR code

United Nations | Department of Economic and Social Affairs

شكرا

谢谢

Thank You

Merci

Спасибо

Gracias

Data is like garbage. You'd better know what you are going to do with it before you collect it.

- Mark Twain

The new face of inequality is digital, and data is the social equalizer.

- UN E-Government Survey, 2022