“Initiatives, Successes and Challenges in Moving Digital Government and Data Governance Forward in Ethiopia

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Defining Concepts

Data Access & Data sharing

“Data access” the ability of individuals, organizations, or systems to obtain and utilize data and which may be subject to specific technical, legal, organizational requirements.

“Open data” is used to refer to data that can be accessed and re-used by anyone without technical, legal or organizational restrictions.

“Data sharing” Involves the transfer of data between different entities with a specific purpose in mind. It includes the re-use of data based on commercial and non-commercial conditional data-sharing agreements, as well as open data.

“Enhanced access and sharing” refers to mechanisms and approaches aimed at maximizing the social and economic benefits from the wider and more effective use of data, while, at the same time, addressing related risks and challenges.

Types of Data

- Personal Data : Data generated from individuals
- Nonpersonal data : may also be derived from personal data but also includes data with no relationship to individuals.
- Scientific data,
- Commercial data,

Approaches to Data Access & Sharing

- Downloads
- APIs
- Federated APIs
- Data Sandboxes

Personal Data Protection and Non Personal data Frameworks

- PDP protect personal data from misuse by data Controllers & Processors,
- Frameworks for nonpersonal data is designed to free up data that is not personally identifiable so that it can be used for the sake of wider societal benefits.
- The data protection framework would lock down data that ought to be kept private, the nonpersonal data framework would unlock data that can be used for public good

The potential of Africa's digital economy

Africa's digital economy is poised to become a huge and resilient source of growth	substantial mobile phone growth, with 61% and 40% of the population now having access to mobile phones and the Internet, respectively. The Africa digital economy has the potential to add up to US$180 billion to Africa's gross domestic product (GDP) by 2025
While still facing with several infrastructure and governance challenges, the African digital economy is driven by young dynamic digital entrepreneurs	Startups are solving some of Africa's most challenging issues, such as access to healthcare for remote populations, employment opportunities for women, and the ability to securely send and receive money. Many African consumers have experienced a leapfrog of transitioning directly from cash to mobile payments without ever owning a plastic card
Africa's data markets are on a path to double every five to six years.	The value of data markets in Africa is estimated to reach over USD 3 billion by 2025, growing by over 12% between 2019 and 2025 . The sector received investments of USD 2.6 billion in 2021 The Africa Data center industry has witnessed a steady interest from major global cloud service providers such as AWS and Microsoft, along with Huawei over the last five years (
Data has been increasingly contributing to digital and technological transformations by fuelling new business models	The increasing volume of personal, non-personal, industrial, and public data, combined with emerging technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and cloud computing, have dramatically impacted the way data is collected, stored, processed and transmitted across the globe.

Ethiopia's Data Economy

- Increased digitization, the proliferation of online services, and the use of new technologies have dramatically increased the volume of data in circulation in Ethiopia
    - 70.3 million Mobile users / 40% smart phone
    - 35.1 Million Internet Users
    - Increasing Digital Payment : 34 million Telebirr Users / 358 Million transactions
    - National Payment Gate way Interface: also made it possible for microlevel entrepreneurs and small businesses alike to identify and take advantage of commercial opportunities that were previously unavailable to them.
    - Many digital Platforms providing various services: Ride hailing, Food delivery, Task, eLearning
    - Various Government institutions providing online services Tax, Trade, Custom, Government Procurement, e-services…
    - Investments on Datacentres and Cloud services
    - Data exchanges between various government entities , Example Tax with Trade; Economic sectors with Ministry of Planning, Metrology with Ministry of Agriculture etc
- Each of these activities has contributed to the widespread use of data and illustrates the importance of **Enhanced access and sharing Enhanced access and sharing**.

- Without an appropriate system of governance, the benefits that are being derived from all this data might not be enjoyed by all Ethiopian citizens.
- In doing so, the country should develop frameworks for both data protection and data sharing, measures that aim to further both government and private-sector use of data for socioeconomic benefits.

Despite progresses there are various Challenges related with Public data in Ethiopia. Ethiopia needs to bridge the regulatory gap between avoiding digital data creation challenges and the need to regulate and leverage available data.

Challenges

- Public data in Ethiopia are mostly not digitized.
- In the few instances that they are, the data are not standardized,
- not interoperable, and
- not readily accessible to users (Administrators, Service providers, researchers, or policymakers)
- The greenfield nature of Ethiopian Public Data Governance presents an excellent opportunity to avoid the pitfalls of complex, restrictive, digital data systems that have evolved elsewhere

There are varies Policies and legal and regulatory Instruments related with Data in Ethiopia a National data Governance helps to implement this instruments in an integrated way

Major Legal instruments

- Freedom of the Mass Media and Access to Information Proclamation No.590/2008
- E-Transaction Proclamation
- Computer Crime proclamation
- Digital Signature Proclamation
- Digital Identity Proclamation
- **Government Secret Information Classification and Protection Regulation No 539/2023**
- Personal data Protection Proclamation

Policies and Frameworks

- STI Policy
- National ICT Policy (2018
- E-Government Strategy (2020) under revison
- Ethiopian Enterprise Architecture & eGovernment Interoperability Framework
- Ethiopian National Data Set Master Plan
- Content Digitization standard
- Ethiopian Open Data Policy
- ACFTA Digital Trade Protocol

Infrastructures & National Platforms

- National Data Centre
- WoredaNet
- SchoolNet
- EthERNEt
- Network Master Plan Implementation
- E-Service Platform
- National Portal
- Data sharing Platform (?)

Ethiopian eGovernment Interoperability Framework (EeGIF):

Data and Meta Data Policies

- XML should be the primary standard for data integration and data management for all application in every ministry, agency and authority in Ethiopia.
- The Ethiopian Meta data standards should be primarily based on the international Dublin Core model.
- Development of national level data set and centralization of Meta data of the country should be done in compliance with the interoperability standards on metadata.
- The working groups and experts should develop guidelines for XML Schemas that will be used for all new applications.
- These guidelines should include mandatory requirements for XML Schema structure and content.
- Data standards, data exchange standards, integration standards are interrelated, their compatibility and technical requirements should be considered.

Triggers for Compliance Checking

- they are planning to have organizational compliance certificate or update;
- they are planning new information systems implementations;
- they are planning to undergo upgrade or update of existing or legacy systems;
- a new version of the eGIF is released

Ethiopian National Enterprise Architecture Framework (ENEAF) & E-Governement Interoperability Framework for Ethiopia (EeGIF) : Technical Standards

- Since EA Framework is aimed to facilitate the ability of government organizations to share information, Data Standards form one of the key components of the National Enterprise Architecture Framework

Data Standards:
- Standard coding and values for data
- Standard structures and formats for data
- Standards for data exchanges

Data Exchange Components
- Character and encoding for information interchange
- Data description,
- Data exchange & Transformation
- Data Formats
- Digitization
- Data Definition for Smart Cards

Metadata and Data Standards

- Ethiopian Government Thesaurus (EGoT)
- Metadata Core
- Metadata
- Data Standards
- Metadata Technologies/standards
- Metadata Registry

Ethiopian National Data Set Master Plan Document

- Serve as a guide for implementing the ENDS project by MCIT
- Provide the architecture and framework for the Ethiopian National Datasets.
- Based on international best practices, standards and guidelines in the planning and implementation of technology and data intensive projects;
- Has identified 188 common datasets that meet the established criteria of commonality. For the purpose of facilitating implementation of ENDS these common datasets have been classified into High, Medium and Low Priority datasets

Proposes a Phased approach of Implementation

- Phase 1 [Critical Phase]
  - The basic infrastructure of the ENDS and its associated systems will be developed and deployed both at the Centre Level and in other organizations of the Government,
  - **Data management and sharing policies and procedures will be developed and deployed,**
  - ENDS Organization structure will be established and skill development and training would be initiated.
  - The 30 high priority datasets would be development and deployed during phase 1 and

Phase 2:

- Medium priority datasets would be developed and deployed
- The skill development and training activities

Phase 3:

- low priority datasets would be developed and deployed :
- The skill development and training activities

Identifies Major data Types

- **Identification/Authorization/Establishment Data Entities**
  - Example: Tax Payer Identification Number, Commercial License Certificate, Work Permit for Foreign Investors,
- **Transactional Data Entities**
  - Example: Billing Service Delivery Data, School Admissions, Hospital ER Admissions

Survey Data Entities

- **Projects, Plans, Performance, Statistics and Reports Data Entities**
  - Ex . governmental plans, performance, statistics and reports, Rules regulations
- **Look Up / Reference Data Entities**
  - E.g. List of agricultural inputs such as fertilizers, pesticides, improved seeds, etc. List of Hospitals, Schools, Citizen Service

Ethiopia Content Digitization Standard

- Digitization is the means of converting non-digital records into digital format as well as creating new documents in digital form by capturing from the real world or as a result of processing predefined digital content or data.
- Digitization Standard is a foundation for Ethiopian institutions to create and provide access to digital copies of material for the public
- Digitization standard promote interoperability, systematically organize and frame a technical solution, and effectively and efficiently achieve a high rate of consistency supported by three main sections:

Digitization Hardware: -

- electrical and electronic equipment needed to successfully perform digitization; medias used to store, retrieve and process digitized content.

Technical Specifications: -

- the acceptable file formats and equipment specifications to be used in the digitization process mainly designed to create the quality master digital copy and derivative files ensuring accessibility and future use as specified in this standard.

Metadata:

- - elements that can be added or attached to the information resources are specifically designed to meet the core obligations of government organizations to provide support, interoperability, retrieval and maintenance of digitized copies over time through descriptions, discovery, evaluation and management, and interpret the information held on a resource, or designed for human interaction.

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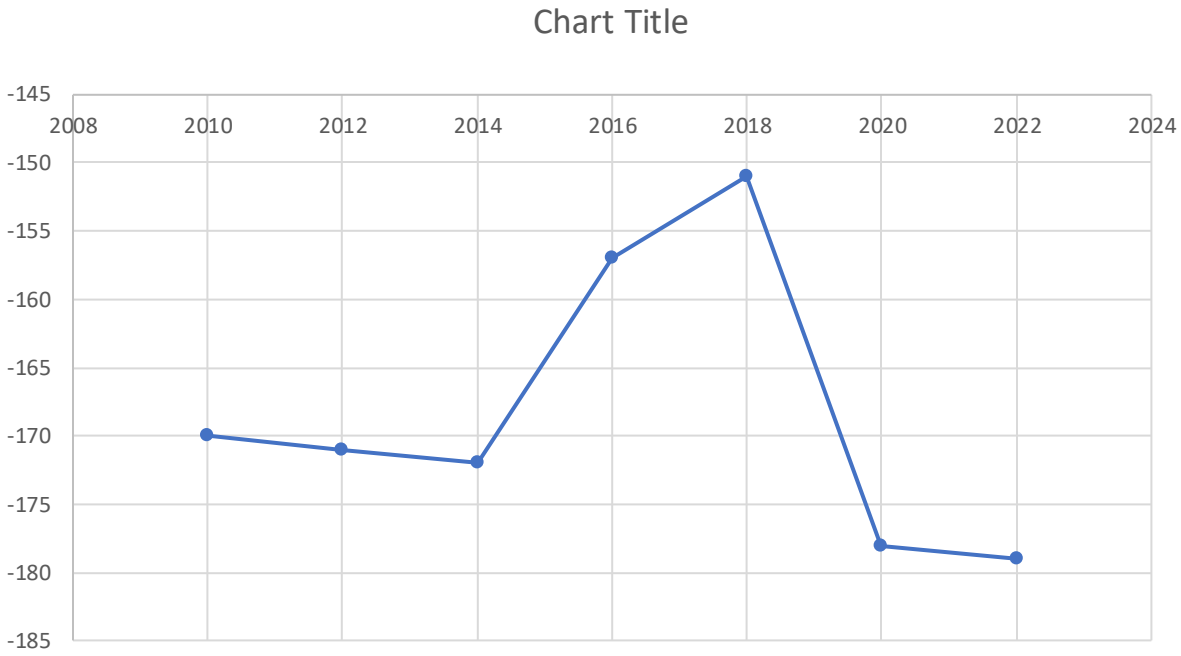
Ethiopia e-Government Ranking is decreasing from time to time relative to other countries. We should transform our approaches based on best practices and Improving Data governance shall be the first measure

EGDI =E-Government Development Index = (Online Service Index, E-participation Index, Telecom Infrastructure Index, Human Capital Index)

UNITED NATIONS
E-GOVERNMENT
SURVEY



- Data enabled Government : Data governance framework that fosters responsible data use, empowers citizens, and drives economic and social progress.
- Whole of government approach
- Digital Public Infrastructure
- Ai enabled services
- a robust and transparent national data governance framework that fosters responsible data use, empowers citizens, and drives economic and social progress.

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Intermediate Outcomes

Stronger Data Policy and Legislation:

- Implement comprehensive data protection laws aligned with international best practices.
- Establish clear guidelines for data collection, storage, use, and sharing.
- Define individual rights and obligations regarding their own data.

Enhanced Data Management and Infrastructure:

- Develop centralized data repositories and interoperable systems to improve data quality and accessibility.
- Establish data standards and protocols for consistent data collection and sharing.
- Implement robust data security measures to protect against breaches and misuse.

Increased Public Trust and Awareness:

- Launch public awareness campaigns to educate citizens about data rights and responsible data use.
- Establish independent data protection authorities to oversee compliance and address citizen concerns.
- Create mechanisms for citizen participation in data governance decisions.

Enabled Data-Driven Innovation and Development:

- Facilitate secure and controlled data sharing for research, innovation, and public service delivery.
- Foster collaboration between government, private sector, and academia to leverage data for social good.
- Support the development of data-driven solutions for economic growth, social welfare, and environmental sustainability.

Activities and Strategies

- Legislative reforms and policy development.
- Investment in data infrastructure and technology.
- Capacity building for data management and governance.
- Public education and awareness campaigns.
- Establishment of data protection and advisory bodies.
- Development of data-driven partnerships and initiatives

Assumptions and Risks

- Strong political will and commitment from government leadership.
- Stakeholder collaboration and active citizen engagement.
- Adequate resources and ongoing funding for implementation.
- Potential challenges in balancing privacy, access, and innovation.
- Risks of data misuse and breaches with evolving technologies.

Current Challenges

- data is of poor quality, lack of data security.
- not used effectively,
- no clear data management and governance policies or procedures.

- Inefficient government operations.
- Lack of transparency and accountability.
- Increased risk of fraud and abuse.
- Obstacles to innovation and economic growth.

Thank You