Keeping Pace with Digital Transformation

National Data Agencies Perspectives

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WTIS: 30 Years of Collaborative Innovation

- Strong Institutional Arrangement to advance methodological improvements under ITU leadership.
  - Since 1996, a series of meetings serving as a platform for developing international standards and methodologies.
  - The Expert Group on Telecommunication/ICT Indicators (over 1100 members) and the Expert Group on ICT Household Indicators (over 800 members) are institutional pillars in standard-setting.
- Steadfast Political Support through World Summit on the Information Society, Geneva Plan of Action, Internet Governance Forum, and Global Digital Compact.

Global Efforts in ICT Methodological Development

Central Pillar since 2004:
Partnership on Measuring Information and Communication Technologies for Development:

Statistical Commission
Thirty-sixth session
1-4 March 2005
Item 7 (f) of the provisional agenda*
Activities not classified by field: information and communication technologies statistics

Report of the Partnership on Measuring Information and Communication Technologies for Development

Note by the Secretary-General

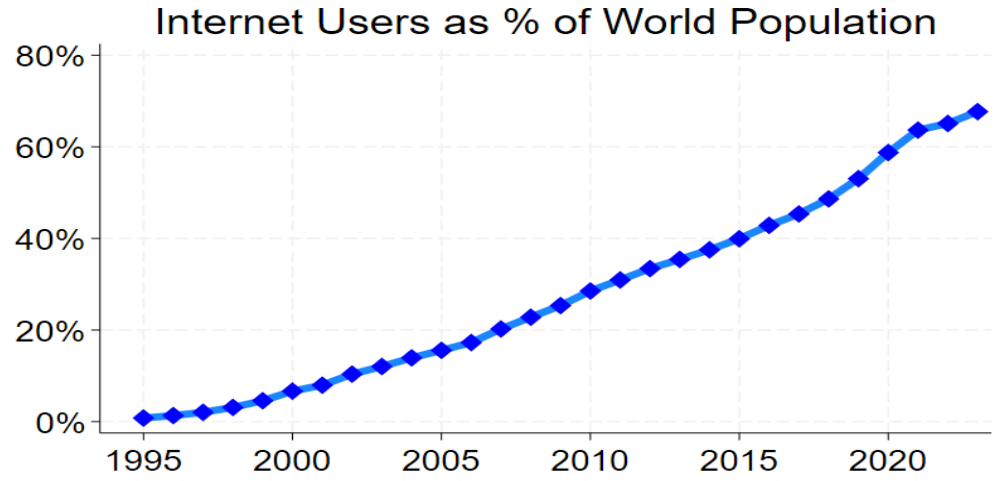
The Secretary-General has the honour to transmit to the Statistical Commission the report of the Partnership on Measuring Information and Communication Technologies for Development. The report is transmitted to the Commission in accordance with a request of the Statistical Commission at its thirty-fifth session.[a] It is presented to the Commission for information.

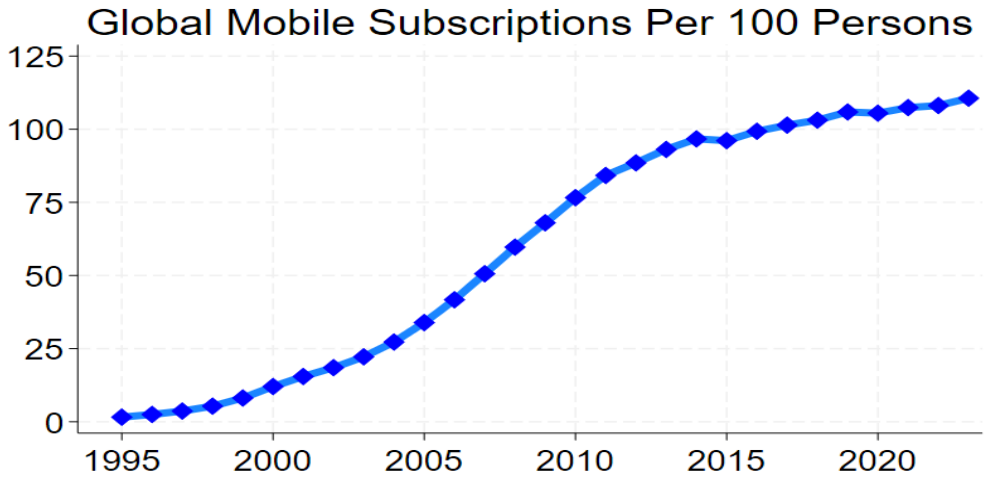
Are We Keeping Pace with Digital Transformation?

Pace of digital transformation extremely fast. Fourth Industrial revolution has fully arrived. Major advances in digital infrastructure and associated transformations in economy and society.

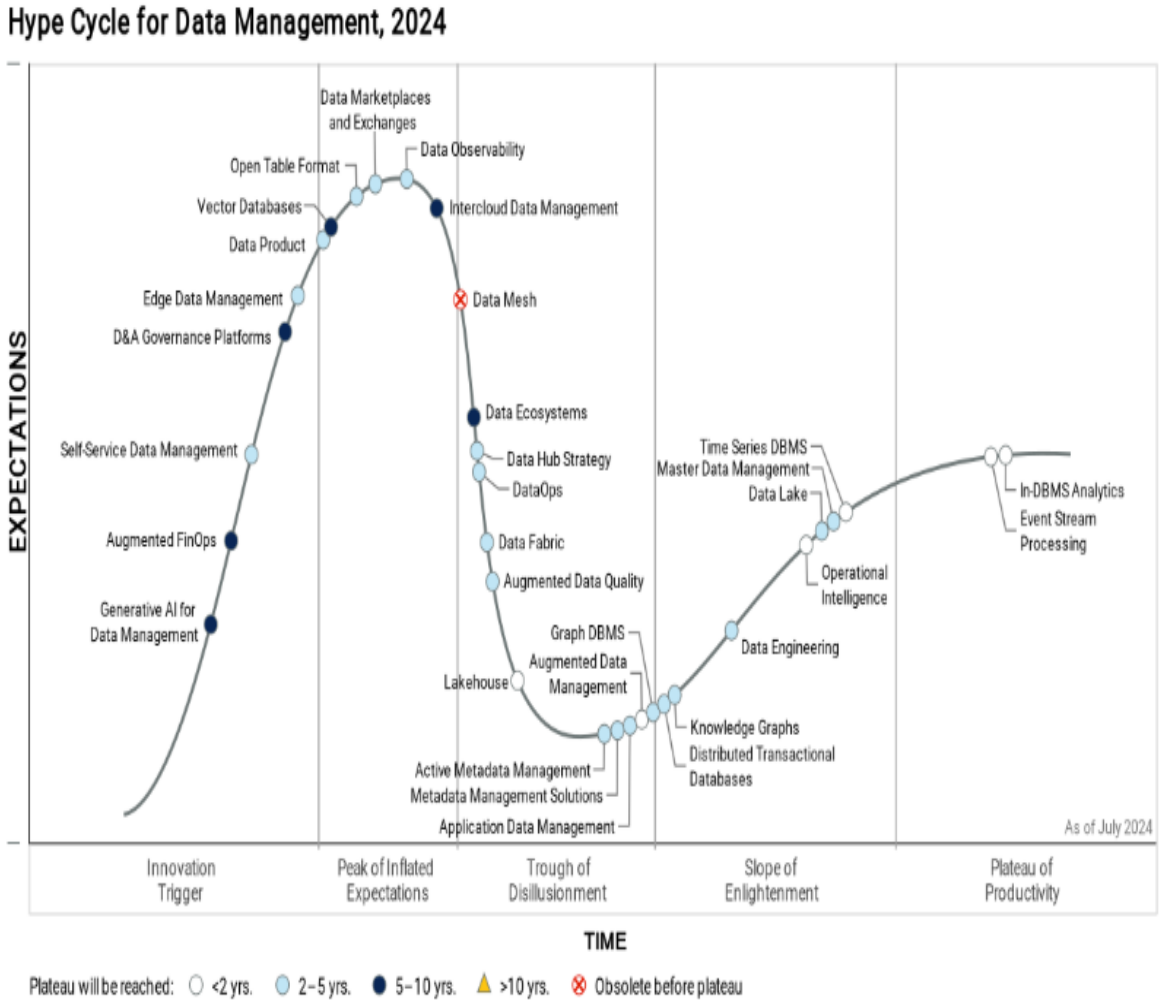
Are we, the National Data Agencies, keeping pace with the speed of the transformation?

Are 60 core indicators proposed in 2024 adequate? What else should we do? Are we tracking new indicators?





Hype Cycle and Rapid Changes in Digitalization



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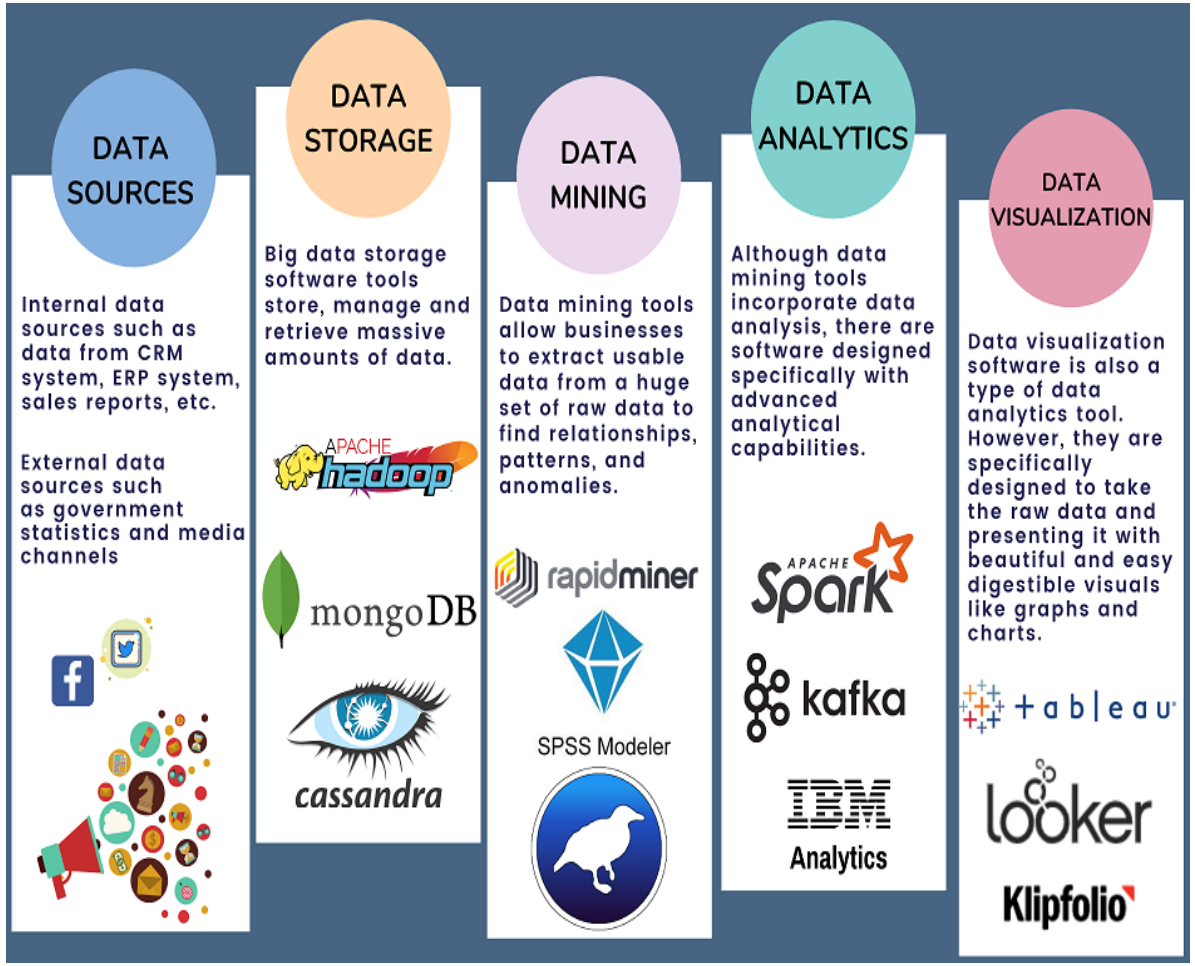
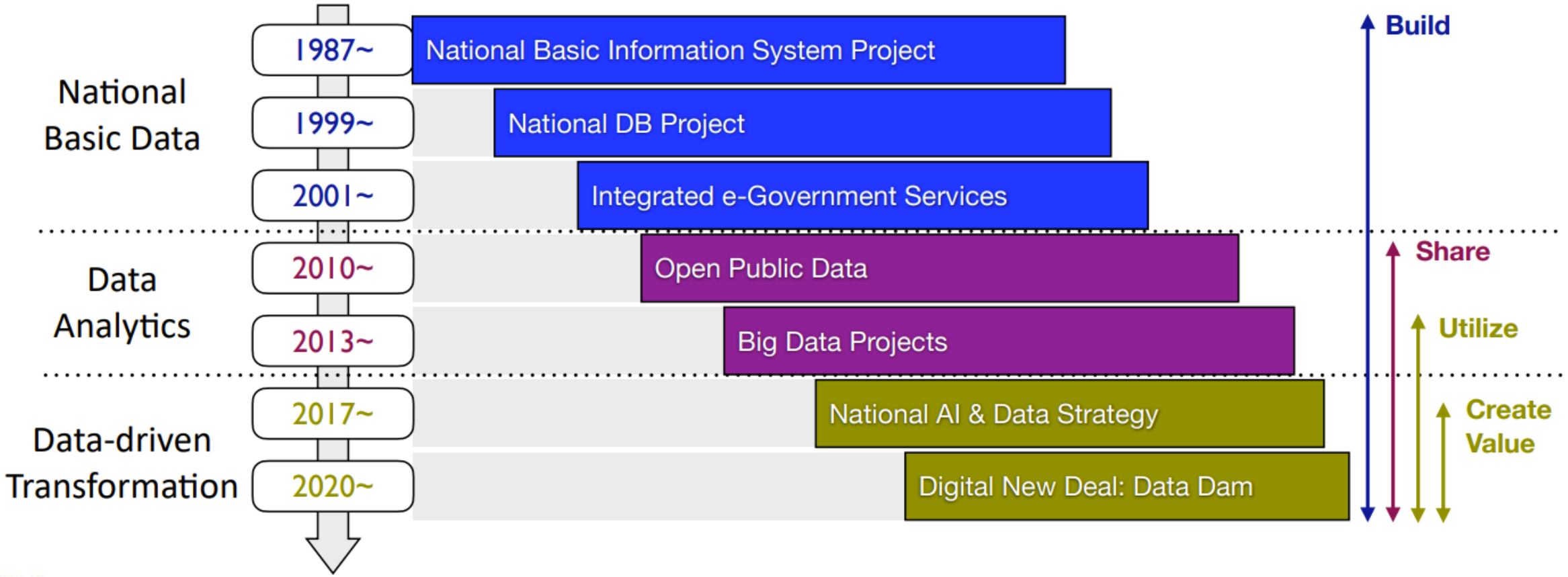


Intellspot

Korea's Data Strategy

- **Decades-long consistent data strategies have been implemented across all the administration since 1987**

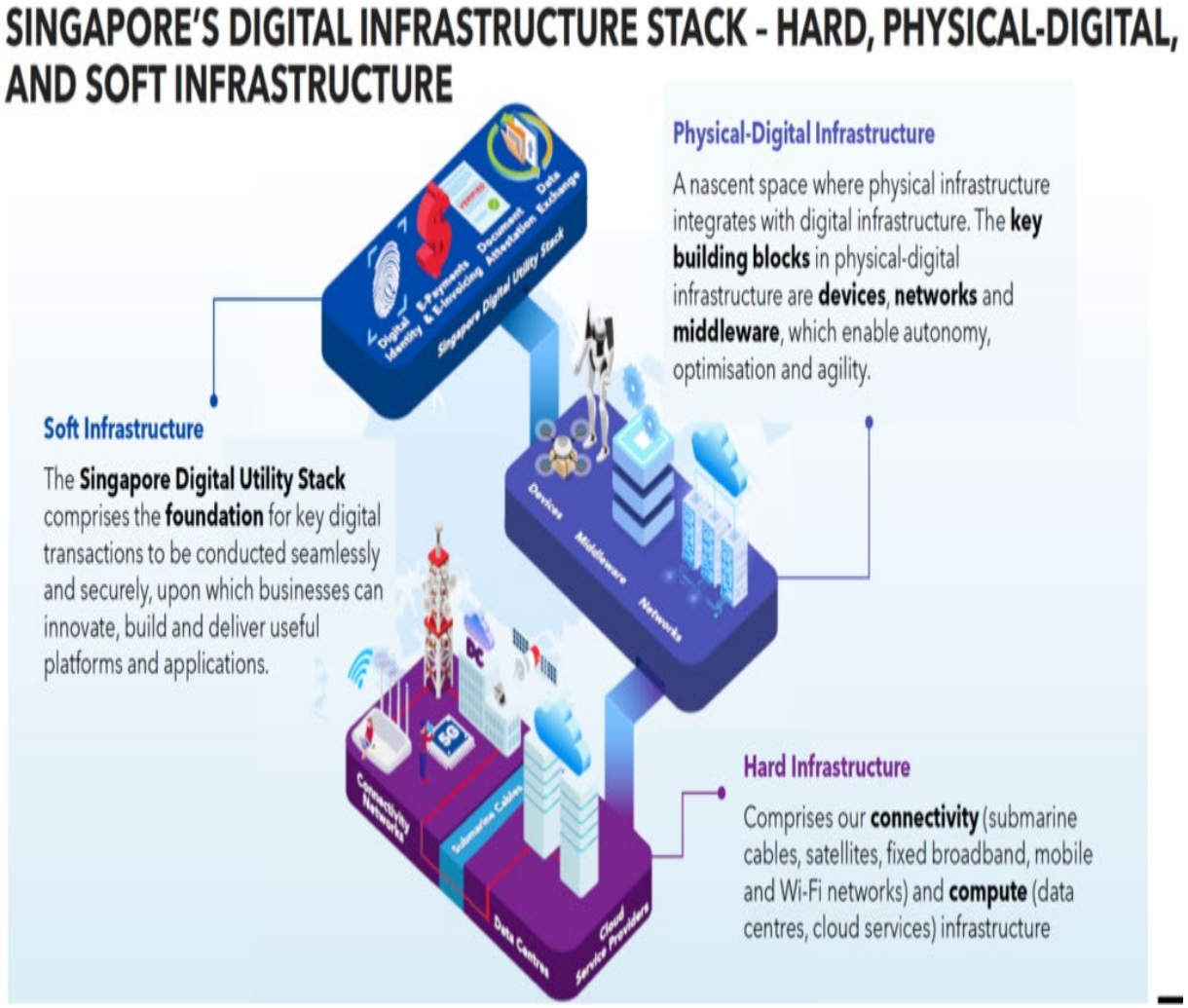


Irreversibility of Digital Transformation

- Digital Public Infrastructure becomes as important as roads and bridges; digital connectivity becomes a part of life.

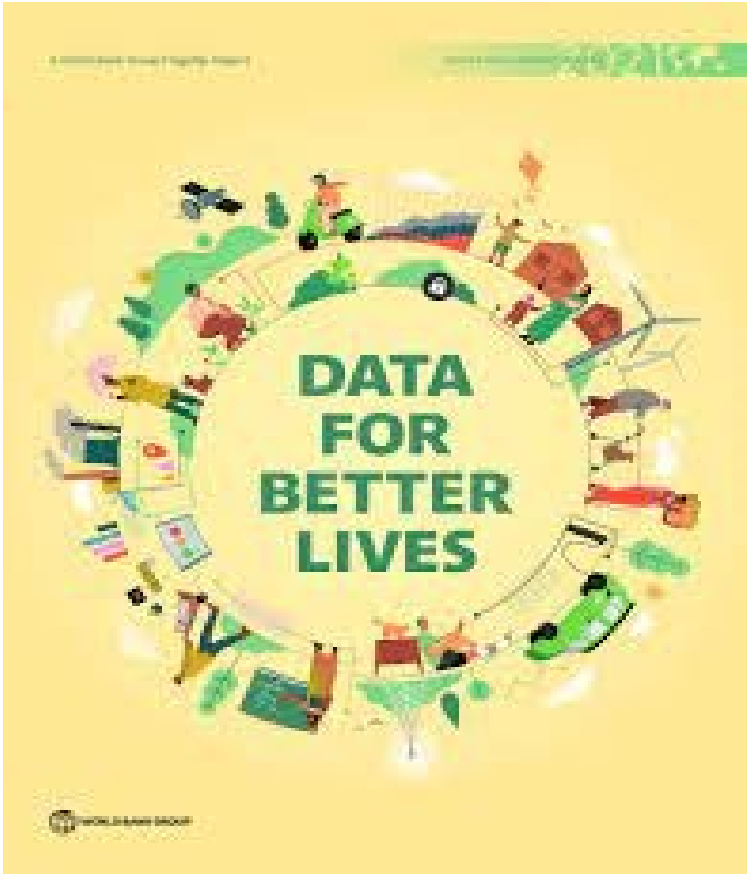
- Digital economy is a new driving force in the socioeconomic development.

- Digital transformation has equal impact on social life, shaping our health and well-being.



National Data Agencies Perspectives

- There is a strong mandate for national data agencies to improve their monitoring and analytics performance.
- How could we take advantage of ever-improving digital infrastructure?
- What are the emerging issues; how can we capture new ICT indicators faster?
- How could we function more effectively in the digital data ecosystem?



Improving Data Capture through Digital Networks

Case Study: Singapore

- Singapore established national broadband network for high-speed internet access in 1996.

- Digital platforms established for trade declarations and citizen information.
  - 1989: World's first national single window for trade declaration
  - 1999: eCitizen portal for integrating citizen data using digital identity

- Further enhancements over time in many aspects of national digital infrastructure

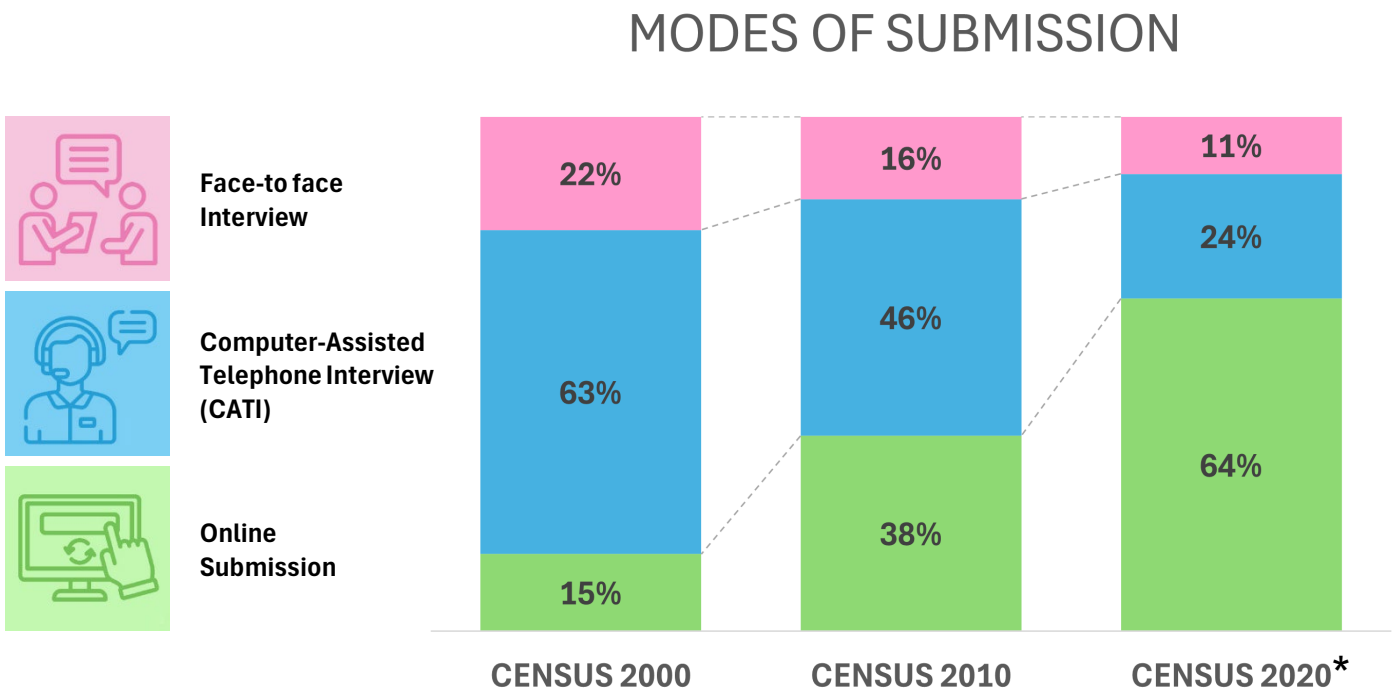
Internet-based Data Collection

Multi-Mode Data Capture since 2000

- Cater to varied profile and needs of population while balancing resource considerations
  - Online Submission via Self-Enumeration
  - Phone Interview through hotline using Computer-Assisted Telephone Interview (CATI)
  - Face-to-face Interview with field interviewers using Tablets

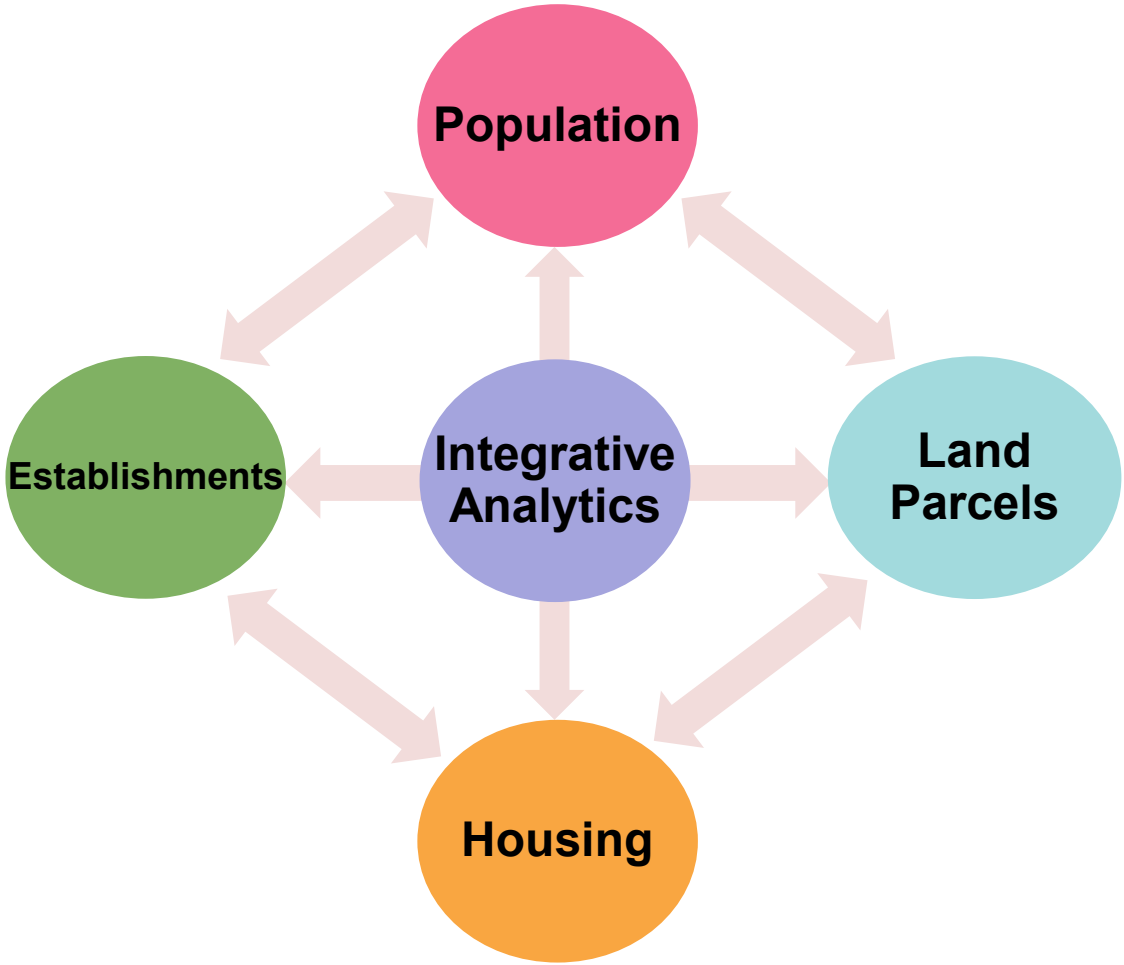
Adoption Rate by Mode of Submission

- Response via Online Submission increased steadily with higher internet penetration rate and computer literacy
- Online submission constituted more than 60% of all responses for 2020

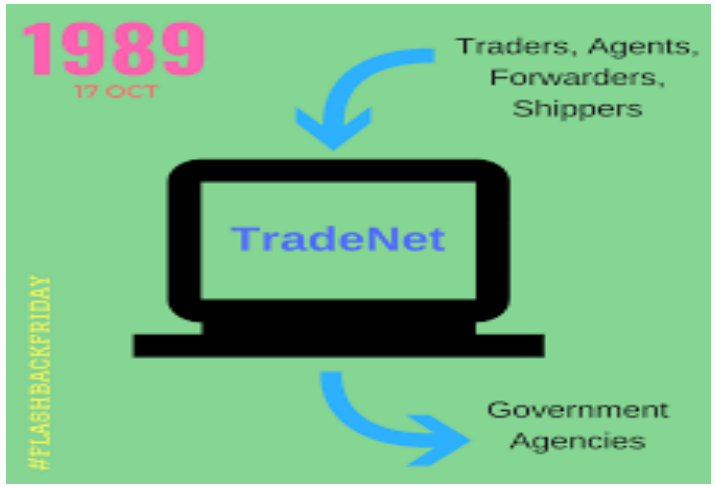


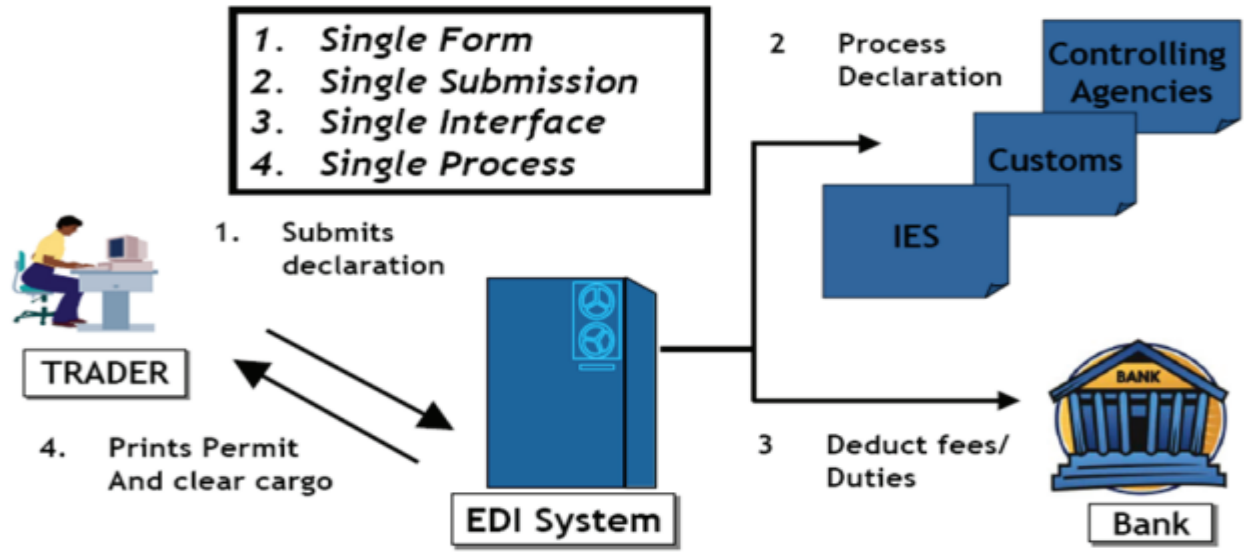
Source: Department of Statistics Singapore

Integrated Core Data Infrastructure



TRADENET facilitates collection of Trade Data





Subsequent Add-ons:

TradeTrust

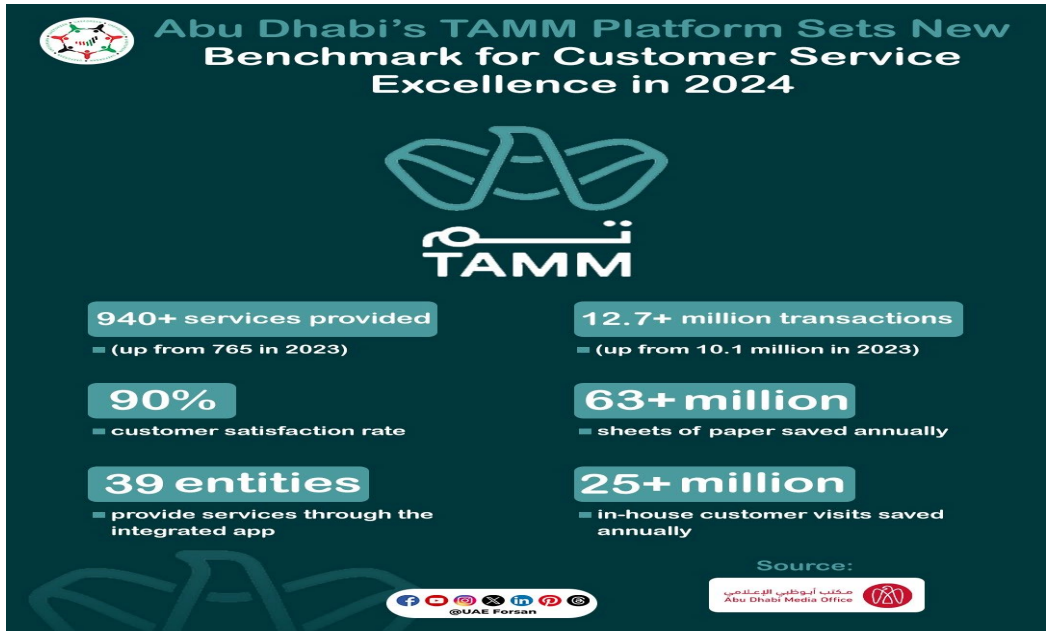
Data Exchange through API: APEX

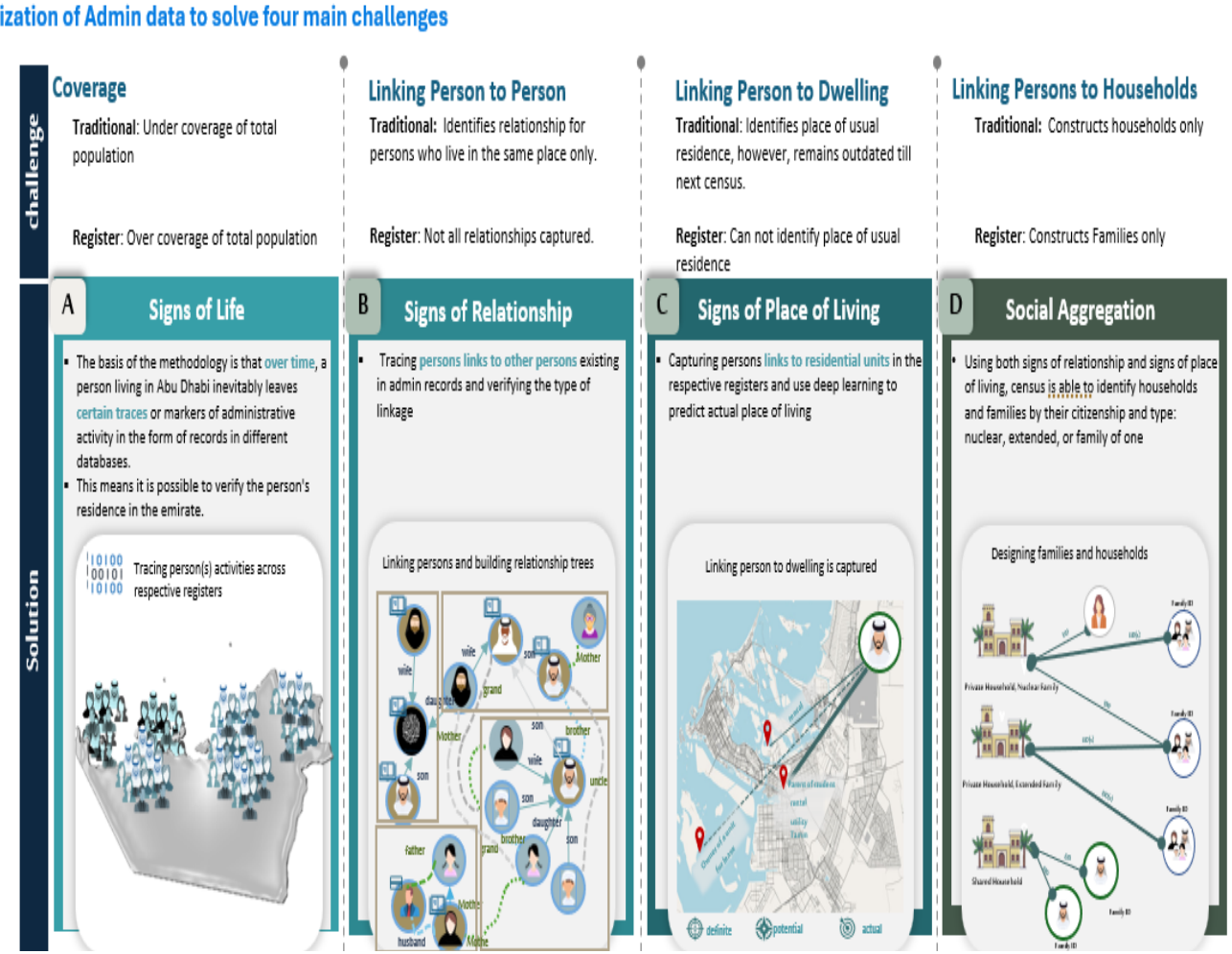
- Digital data exchanges supported by legal frameworks such as The Public Sector (Governance) Act and The Electronic Transactions Act.
- APEX enables government and approved entities to share data via APIs, and allows consuming services to access approved APIs.
- Data exchange facilitated by the identification of authoritative data (single source of truth) in government databases. Further supported by uniformed data standards and formats.
- An important element of Digital Public Infrastructure.

Abu Dhabi's Innovative 2024 Census

TAMM is the central platform for Abu Dhabi Government services. Residents access everyday vital services across Healthcare, Housing, Education, Citizenship, Residency and much more.

Every service provided for individuals is a dataset used for census.





Deployment of AI as the next frontier

- Major efforts underway to leverage AI/ML in statistical operations as productivity tools.
- Promising results in improving coding and classification processes. Could extend to the entire data management process.
- AI/ML holds great potential in advancing knowledge generation through advanced analytics.
- Costs and sustainability a major concern in AI/ML operations.

	Highly impactful	Moderately impactful	Slightly impactful	Not impactful at all	Not sure	Average score
Data collection and processing	6	17	15	1	2	2,72
Data analysis	8	17	13	3	0	2,73
Dissemination and communication	13	16	9	2	0	3,0
Coding and IT development	21	15	4	0	1	3,43
Other administrative tasks	8	14	12	3	4	2,73

UNECE

Rising Disparity in Digital Infrastructure

- There is great disparity in infrastructure development, with consequent impact on deployment of advanced data capture methods.
- Digital infrastructure, especially DPI, directly impacts a country's competitiveness.
- We will see greater divergence in how data agencies manage digital data resources and the sophistication of their data management systems.
- No clear solution how to address this disparity.

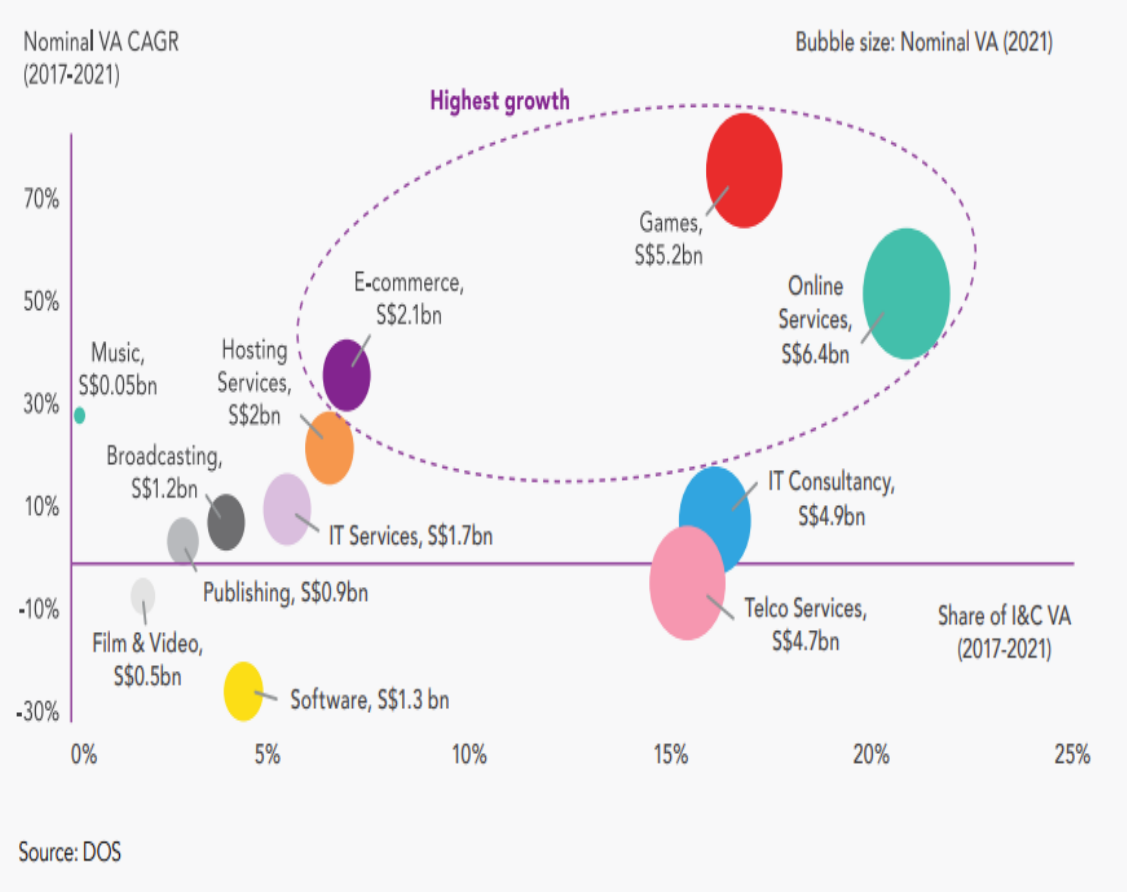
AI preparedness Index 2024, IMF

Emerging Issue:
Measuring Digital Transformation

- Efforts are underway to better measure Digital Economy through Digital Economy Satellite Accounts.

- Aggregated estimates may not be as useful as sectoral basic statistics, as industries undergoing rapid transformation.

- Emerging issues deserve close attention.



Emerging Issue:
Monitoring Cross-Border Data Flows

- With cross-border data flows becoming more prominent, there is a need to monitor unregulated export of national data and help promote domestic value-adding data processing activities.

- Monitoring data flows facilitate the assessment of digital economy integration and inter-dependency.

- In particular, capturing the value of data flows and the digital services that enable such flows enhances understanding of the digital economy.

Emerging Issue:
The API Economy and DIPs

- APIs and DIPs are the engines of the digital economy. APIs are everywhere, powering every digital interaction. Are we tracking these new engines of growth?

- API Economy: Core drivers of new business models and economic value. APIs are building blocks that allow applications systems to communicate, share data, and work together as a cohesive whole. Numerous APIs are developed; critical interface across systems.

- Digital Intermediation Platforms, relying on APIs, are highly important in facilitating various transactions offering a variety of services. They enable businesses, particularly MSMEs, to access wider markets, enhance efficiency, and evolve new business models.

- We need to understand the number and impact of the APIs and DIPs.

Enhancing Data Governance
Integrating Horizontal and Vertical Mandates

- Multiple agencies involved in monitoring digital transformation.
- Horizontal mandates: National Infrastructure, Data privacy, AI and data regulations, DPIs, API development.
- Vertical mandates: social and economic sectors from well-being to jobs, transport and economy.
- Need strong coordination to manage and integrate various data assets and developed a uniformed data platform for sharing and analytics.

Singapore		
Data Strategy		*Smart Nation Initiative, 2014*
Legal Framework	**Personal Data Protection**	*Personal Data Protection Act, 2012*
	Government Data Sharing Authorization	*Public Sector (Governance) Act, 2018*
Technical Interoperability Standards Mandatory for Government Entities		*Open APIs for G2G/G2B/G2C services*
Institutions for Data Strategy, Governance and Stewardship		*Smart Nation Office, Government Data Office, Trusted data Centres, Ministry of Digital Economy*

Coordinating Data Custodians and Stewards

Data Custodians perform specific data management roles, including managing data collection processes, quality assurance mechanisms, and storage and retrieval procedures.

They serves as Single Source of Truth (SSOT).

Operating principles:

- Quality assurance at source
- Data privacy at source
- Data and knowledge as a service

Data Stewards performs a professional function over and about the data production processes. They assess and promote the usage of data, identify shortcomings in the data system, and strive to meet the need and trust of users.

Advancing Data-as-a-Service

- Priority tasks:
  - Defining and managing the ecosystem of ICT statistics
  - Re-aligning data capture instruments and channels
  - Ensuring smooth data flow across data ecosystem
- Key enablers:
  - Data, analytics, and knowledge as a service
  - Strengthening legal and administrative mandate in data governance
  - Professional services in data stewardship
  - Strengthening human resource capabilities, from data scientists to data engineers

Conclusion

- A new world of possibilities, with new data sources, product lines and improved productivity;
- Use of technology will intensify rapidly. Incorporating Data Analytics and Complex Systems will help governments to advance knowledge generation;
- Government agencies must adopt new responsibilities and acquire new capabilities. New business models are required to implement data-as-a-service.