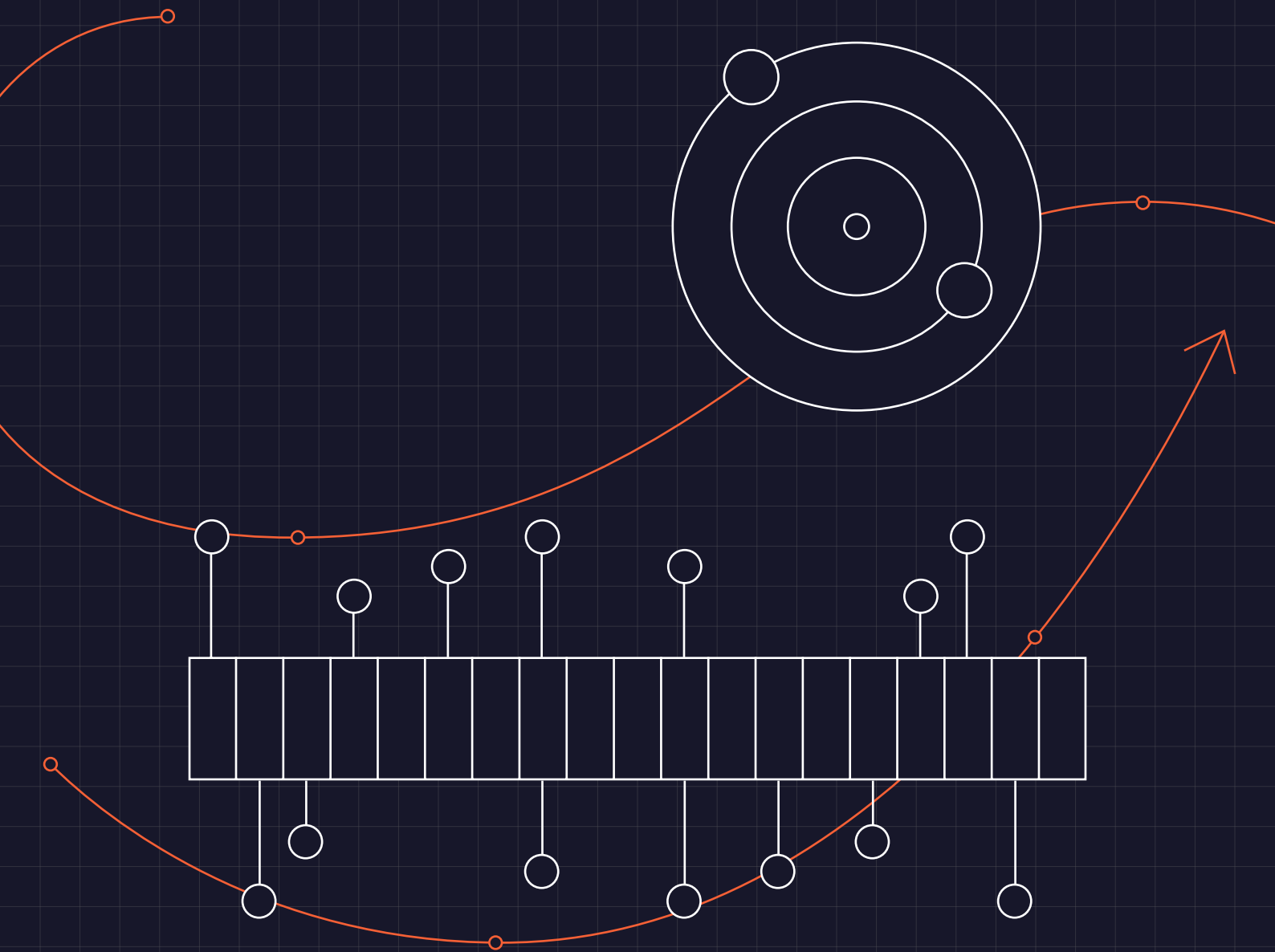


An Assessment Framework for Measuring Government AI Readiness



OXFORD INSIGHTS

Authors:
Richard Stirling,
Walter Pasquarelli
& Eleanor Shearer

Background

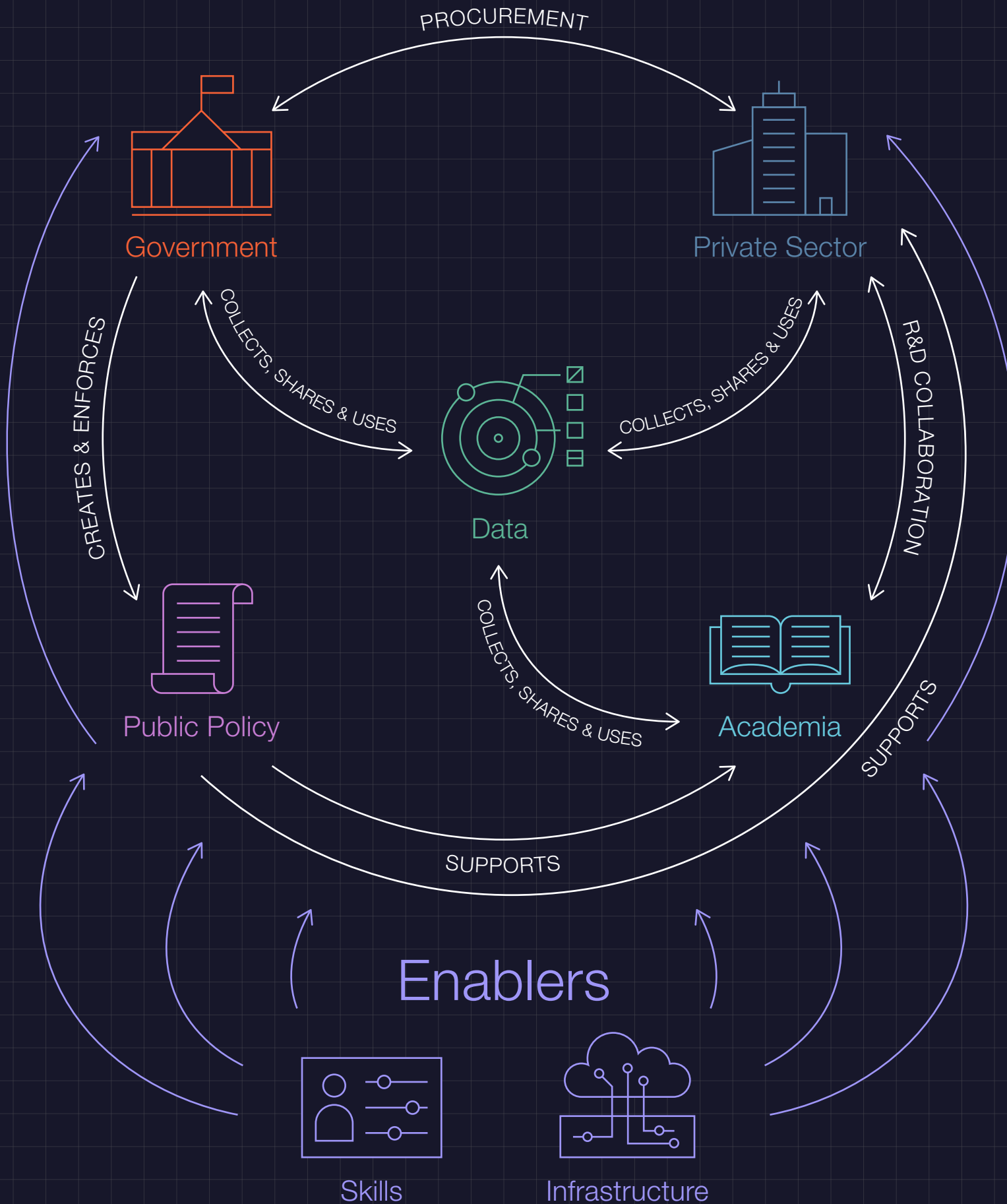
Artificial Intelligence (AI) is set to transform the way governments operate. From **mental health care for the elderly**, to **easing traffic congestion in cities**, new technologies can help improve citizens' lives. A growing number of governments are looking to build their capacity to harness AI in the delivery of their public services, as shown by the growing number of national AI strategies around the world.

In September, Oxford Insights and the International Development Research Centre (IDRC) published the **2020 Government AI Readiness Index**. The third iteration of the Index measures the government AI readiness of 172 countries. The Index is a valuable comparative tool, but it is limited in the amount of depth and local context it can provide. To rank countries, we rely on publicly available datasets, and can only use those that cover the majority of countries in the world.

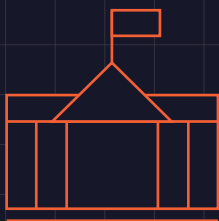
Because of these limitations, we were interested in understanding what measuring AI readiness might look like in a single country. Rather than producing a comparative ranking, we wanted to design a tool that would allow governments to assess their AI readiness in more detail. In other words, what would an assessment framework for AI readiness look like?

To answer this question, we brought together experts from a number of global development organisations, including the **World Bank**, the **OECD**, the **CAF - Development Bank of Latin America**, **Research ICT Africa** and **Knowledge 4 All**. During a workshop, participants learnt how different organisations approached the concept of government AI readiness, and worked to identify any common themes. Here we present some of the findings from the workshop.

AI Environment



We wanted to capture how the different elements in this environment interact, rather than being standalone components. We also wanted to emphasise how some elements (skills and infrastructure) are foundational, and run through every part of the environment.



Government

The government includes the various ministries, departments and public services that could make use of AI. AI readiness will depend on the government's willingness to embrace innovation, their strategic vision, their capacity for effective implementation, etc.



Public Policy

During our discussion, participants emphasised the importance of public policy levers in creating an environment in which AI can flourish. As well as policies such as digital government or AI strategies, public policies can also help support innovation in the private sector and in academia. Some participants also stressed the importance of strong government institutions for implementing particular policies.



Private Sector

In the majority of cases, AI innovation will be driven by the private sector. As well as the development of AI for commercial use, we have seen in recent years the emergence of GovTech. This is a field in which companies develop innovative products specifically for use in government. The importance of the private sector as a supplier of technology to the government means that they are a key part of government AI readiness.



Academia

Within the AI environment, academia has two functions. It is a centre for innovation, alongside (or in partnership with) the private sector. It also provides education in STEM subjects that can produce talented engineers, computer scientists and data analysts, all of whom have a role to play in developing and implementing AI in government.



Data

As AI models require large amounts of training data, data is an essential component of AI readiness. During our discussion, participants emphasised that any assessment of data must be sensitive to different levels of data collection and use - for example, the difference between data being open, being usable and being re-usable.

Participants also spoke about the need to understand data in different domains or sectors of the environment. The government, the private sector and academia may all collect and store their own data, for example. Therefore, assessing how data flows through the environment will be important.



Skills

Skills encompasses all the digital skills required to understand, engage with, build, and implement AI. Not everyone will need to be machine learning engineers for a government to be AI ready, but good skills are foundational to the implementation of AI across government. The assessment would need to take into account the different skills required across distinct areas of the AI environment. For example, the skills needed in government may be different from those needed in academia.



Infrastructure

Infrastructure is a vital precondition for AI readiness. As with skills, participants in the workshop emphasised that any assessment will need to understand how infrastructure cuts across the whole AI environment, from government to the private sector to academia. Infrastructure will involve both basic digital infrastructure such as broadband, but also more advanced elements such as cloud computing capabilities. Participants also raised the importance of assessing access to infrastructure. If citizens and businesses are prohibited by cost or urban-rural inequality from accessing high-quality infrastructure, this will hamper AI readiness.

Other Useful Reading

There are numerous other tools and frameworks that will be of use when it comes to assessing AI readiness.

The [UNESCO Recommendation on the Ethics of Artificial Intelligence](#) is an effort to provide a set of standards and principles for using AI ethically. We believe that an ethical, responsible approach to AI is essential. The ethics of AI formed an important part of our discussion. We did not necessarily feel that ethics was a component in the AI environment to be measured, but rather a set of principles that may vary with local context. These would need to guide the government, the private sector, and academia when it came to collecting and using data and building and implementing AI. We believe that the UNESCO Recommendation offers a good foundation on which to develop such principles.

The [OECD Digital Government Policy Framework](#) measures the six dimensions of digital government:

- 1— Digital by design
- 2— Data-driven
- 3— Government as a platform
- 4— Open by default
- 5— User driven
- 6— Proactiveness.

Elements of digital government of AI readiness will often intersect. Any government thinking about their AI readiness may also want to assess their digital government capacity as well. Without a strong foundation in digital government, deploying more advanced technologies will be far more difficult.

Annex: Government AI Readiness Assessment Framework

Implementation

Conduct an assessment of each element in the environment, as well as of the strength of the relationships between the elements.

Given time constraints and limits on the availability of data, it may not be possible to conduct a full assessment exactly as outlined below. Rather, this framework should be read as guidance, and any assessment will end up prioritising particular areas of focus.



Government Assessment

WHAT

Innovation capacity

Digital and data skills within government

Digital foundations

HOW

Interviews and case studies

Surveys and interviews

Scores in e.g. UN eGovernment Survey or OECD Digital Government Index

Public Policy Assessment



Does the AI / Digital Strategy have:



A clear timeline?



Measurable and realistic outputs?



A commitment to maximising the other elements outlined in this framework?

Private Sector Assessment



WHAT

Innovation impact

R&D spending

Human capital

Infrastructure (e.g. access to broadband, cloud computing, etc.)

Financial resources

HOW

Case studies

Quantitative data

Quantitative data and surveys

Surveys and interviews

Quantitative data

Academia Assessment



WHAT

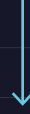
R&D spending

Research impact

Human capital

AI specialisation

Number of research centres



HOW

Case studies

Quantitative data (e.g. number of citations) and case studies

Quantitative data, e.g. number of STEM places (undergrad and PhD)

Case studies

Mapping exercise

Data Assessment



COLLECTION

CURATION

USE

IMPACT

WHAT

Can data be collected?

Can data be stored (and in the right formats)?

Can the data be used in analysis?

Has the use of data had an impact?



HOW

E.g. World Bank statistical capacity score

Assessment of available datasets

Skills assessment

Case studies for government, private sector and academia?

Strength of Relationships



GOVERNMENT & PUBLIC POLICY

GOVERNMENT & PRIVATE SECTOR

PUBLIC POLICY & PRIVATE SECTOR

PUBLIC POLICY & ACADEMIA

PRIVATE SECTOR & ACADEMIA

WHAT

Implementation of public policy by institutions.

Procurement of AI goods from the private sector

Funding and regulation

Funding and academic input into policy

Financial resources



HOW

Map of policies and implementing departments / ministries.

Assessment of procurement legislation (e.g. specific targets for SMEs / for innovation).

Quantitative data on available funding for AI.

Quantitative data on available funding.

Case studies of successful R&D collaborative efforts.

Surveys / interviews to assess effectiveness.

Surveys / interviews
Quantitative data on ICT procurement spending.

Assessment of regulatory environment.

Assessment of opportunities for academic input into policy, e.g. an AI advisory council.

Assessment of relevant initiatives e.g. incubators attached to universities.

Quantitative data on funding for relevant policies and institutions.

Case studies of success.