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The Digital Revolution: Government-led Initiatives

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The NS Initiative is intended to generate useful and usable insights to help practitioners think through challenges, and set a course adapted to their context and circumstances. After reviewing the literature on the velocity of change and the social and ethical concerns of the digital revolution, this review will now focus on government-led initiatives to keep up with the digital era.

Considering the challenges of governing in the digital era, governments do not have the luxury of waiting to act. They must set a course with imperfect knowledge in a context with a high degree of uncertainty about the shape that the digital world may ultimately take. A summary review of government initiatives in various countries indicates that the actions to date tend to follow four broad trends:

- Industry based self-regulation;
- Governmental declarations of principles and norms;
- Regulatory actions; and
- Comprehensive approaches to building a digital society.

Countries give different weight to the importance of these measures and use a combination of measures that set a distinctive trajectory.

Reliance on Industry Self-Regulation

The American approach is an example of self-regulation. In the final months of the Obama Presidency, the White House laid the groundwork for a national AI strategy aimed at increasing investment and responding to some of the challenges the digital economy may generate for society. It proposed a limited role for government in regulating AI, suggesting that government provide the infrastructure and support for R&D, and develop policy to ensure "the economic benefits are shared broadly."

The approach taken by the Trump administration thus far further limits the scope of government in regulating AI, endorsing the "free market approach to scientific discovery," and removing "barriers" to innovation. As Deputy Assistant to the

President for Technology Policy, Michael Kratsios, notes that "to the greatest degree possible, we will allow scientists and technologists to freely develop their next great inventions right here in the United States". This approach enjoys the support of big tech companies, like Google, Amazon, Facebook, Apple, Microsoft, and IBM (GAFAMI). These corporations are keen to keep the field as free from government regulation for as long as possible.

Some of these measures include hiring company ethicists, adopting codes of ethics, and establishing ethics boards, and industry self-regulatory partnerships. While these self-regulatory practices signal that the private sector is keen to lead the discussion about ethical and social challenges, this approach has serious limitations.

Government Declarations of Principles

Several governments have drafted, or are in the process of drafting, non-binding ethical principles in consultation with stakeholders and the private sector. As Dr. Aisha Bint Butti Bin Bishr, the Director General of Smart Dubai, explains, "AI regulation is needed, but that the field is

not yet mature enough to devise fixed rules to govern it. However, organisations still require guidance, and regulators still need to begin to learn how to oversee this emerging technology, but without creating restrictions that could stifle innovation."

Government declarations generally cover five broad themes: accountability, transparency, fairness, explainability, and human-centricity. The governments of Singapore and Smart Dubai provide examples of this approach.

Singapore:

In 2018, the Singapore government announced the creation of an Advisory Council on the Ethical Use of AI and Data to assist in developing guidelines around the responsible development and adoption of AI. A discussion paper on responsible development and adoption of AI was developed in consultation with industry with the goal of encouraging the private sector "to develop voluntary governance frameworks, including voluntary codes of practice."

The paper puts forward two key recommendations governing the development and adoption of AI: that decisions made by AI should be explainable, transparent and fair; and that the technology should be Human-centric, meaning that it is of benefit to humanity, and does no harm.

Smart Dubai: AI Ethical Principles and Guidelines:

In January 2019, Smart Dubai released a set of AI ethical principles and guidelines in the form of an Ethical AI Toolkit. Modelled after Google's seven AI research principles and developed in consultation with Microsoft, IBM, and Google, the toolkit was designed to guide organizations delivering AI services.

The toolkit includes an AI Ethics Self-Assessment Tool for developers and operators to evaluate their AI systems in accordance with the principles and guidelines. The toolkit is built on the understanding that as the AI field evolves so too should the ethical principles and guidelines that prescribe its development and adoption.

Regulation

Some governments consider it necessary to go beyond industry self-regulation and voluntary compliance through a declaration of principles. These governments are exploring how legislative frameworks for the development and adoption of AI could prevent harm that may be difficult to prevent through other means, or difficult to rectify later on. The most prominent example is provided by the EU with respect to privacy and personal data protection.

The General Data Protection Regulation (GDPR) of the EU

The EU introduced the General Data Protection Regulation (GDPR) in 2018 to protect people's privacy rights. It is the most comprehensive data protection law to date, shifting control of data away from technology companies and to individuals.

The GDPR also has broad territorial scope, applying to businesses located inside the EU, and those on the outside interacting with individuals within the EU. It raises the threshold for compliance for businesses, requiring greater openness and transparency around their data processing activities, imposing stricter limits on the use of personal data and penalties for non-compliance than in the past.

Estonia #KrattLaw:

Estonia is keen to establish a legal framework around AI in order to enjoy its benefits. In 2016, it established a taskforce to study the implications of self-driving

vehicles for society. Finding the study of the ethical, social and legal implications of AI within the context of traffic laws limiting, and lacking the benefit of public input, it broadened its scope. In 2017, Estonia introduced public discussion around extending legal rights to AI, and is the first county to do so.

A Comprehensive Approach to Building a Digital Society

Most if not all governments are focusing on how to reap the benefits from a digital economy and how to prepare society to successfully navigate through the changes ahead. These measures range from building digital infrastructure, supporting research, investing in skills and re-skilling, and providing support for those workers in sectors most at risk of being displaced.

Germany:

The German government has taken several actions to position Germany as a global leader in the development and use of AI technologies, a key component of which is transparent and ethical AI. In 2018, the government released a comprehensive €3 billion AI Strategy toward the development of an "AI made in Germany" label. The strategy includes investments in R&D, as well as initiatives related to developing transparent and ethical AI and responding to the changes that AI will bring to bear on the workforce.

The German government also established a commission of MPs and AI experts to investigate how AI and algorithmic decision-making will affect society, with its report of recommendations due in 2020. While these cross sector initiatives are underway, the German government's pioneering work in setting the world's first guidelines around autonomous vehicles is an example of a sectoral approach that seeks to strike a balance between harnessing the benefits

of AI while mitigating risk.

South Korea:

The government of South Korea is an example of a comprehensive approach to building a digital society. It recognized early on the potential of AI for societies searching for new solutions to some of its oldest problems, like support for aging populations. Although never publicly released, in 2007 the South Korean government drafted the world's first robotics charter to provide ethical guidelines on the respective roles and functions of manufacturers, users, owners, and robots themselves. Concerned about the social and legal issues related to human-robot interaction, especially with respect to the decision-making potential of AI, the charter specified the rights and duties of users and owners, the rights and duties of robots, and standards for manufacturers.

City of Barcelona:

The City of Barcelona is at the forefront of an emerging movement of cities rethinking the narrow technological objectives of the Smart City concept, toward a democratic, open source, and commons-based digital city built from the bottom up. At the heart of Barcelona's smart city is technological sovereignty, where the government and citizens determine the direction and use of technological innovations for a common purpose, and the digital rights of citizens. The City seeks to involve citizens in decision-making using Decidim, a free open-sourced digital platform for citizen participation.

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