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Data Standards Task Force for Digital Cooperation

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Key Points

- There is no consensus to create a global framework for managing data governance under the United Nations.
- A Data Standards Task Force (DSTF) is needed to create a single data zone where trustworthy data could circulate freely between like-minded countries.
- This proposal is aligned with the objectives of fora such as the International Grand Committee on Big Data, Privacy and Democracy (IGC).
- Canada could also spearhead the launch of the DSTF with like-minded countries through the implementation of regional free trade agreements such as the Canada-United States-Mexico Agreement (CUSMA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) or the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

Introduction

Although global data standards are urgently needed to foster digital cooperation, no organization is currently mandated to coordinate their development. In the absence of a collective will to manage data governance under a United Nations body, this policy brief proposes the creation of a DSTF. The organization would be entrusted with a dual mandate: the development of interoperability standards to create data value chains and the creation of data governance standards. The ultimate objective of the DSTF would be to help create a “single data zone,” where trustworthy data could circulate freely between participating jurisdictions sharing similar values.

Digital Cooperation Needed More than Ever

As explained in the CIGI paper *Standards for Digital Cooperation* (Girard 2020), the international community needs data standards. Interoperability standards are essential to create data value chains that string together data collection through collaborative platforms in order to generate insights and solve long-standing problems. Organizations of all sizes, whether public, private or not for profit, also need a suite of data governance standards to manage issues such as data ownership and use, security, residency, privacy and the protection of fundamental rights. Data standards are therefore needed for both operations and governance (ibid.).

About the Author

Michel Girard is a senior fellow at CIGI, where he contributes expertise in the area of standards for big data and artificial intelligence (AI). His research strives to drive dialogue on what standards are, why they matter in these emerging sectors of the economy, and how to incorporate them into regulatory and procurement frameworks. He highlights issues that should be examined in the design of new technical standards governing big data and AI in order to spur innovation while also respecting privacy, security and ethical considerations.

In addition, Michel provides standardization advice to help innovative companies in their efforts to access international markets. He contributes to the CIO Strategy Council's standardization activities and advises the Chartered Professional Accountants of Canada on data governance issues.

Michel has 22 years of experience as an executive in the public and not-for-profit sectors. Prior to joining CIGI, Michel was vice president, strategy at the Standards Council of Canada (SCC), where he worked from 2009 to 2018. At the SCC, he led the design and implementation of the Standards and Innovation program, the Climate Ready infrastructure program, the Northern Infrastructure Standards Initiative and the Monitoring Standards in Canadian Regulations project. He managed the negotiation of standardization clauses in trade agreements including the Comprehensive Economic and Trade Agreement and the Canadian Free Trade Agreement. Previously, he was director of the Ottawa office at the Canadian Standards Association, director of international affairs at Environment Canada, corporate secretary at Agriculture Canada and acting director of education and compliance at the Canadian Environmental Assessment Agency. He holds a Ph.D. and a master's degree in history from the University of Ottawa.

For many decades, international bodies were created to coordinate standards development activities in support of sectors of the economy operating across national boundaries. There are hundreds of international agencies responsible for drafting technical regulations, codes, standards and best practices. UN-mandated bodies such as the International Civil Aviation Organization, the International Maritime Organization and the Codex Alimentarius Commission are accountable for portfolios representing tens of thousands of normative documents. Demand for these global bodies came from regulators and from industry around the world. National governments made binding commitments through treaties and conventions in order to create these bodies.

However, when it comes to big data analytics, this approach appears unlikely to get support. Starting in 2002, various UN-led initiatives have been launched to determine how best to manage digital governance. In 2018, UN Secretary-General António Guterres even convened a High-level Panel on Digital Cooperation to take a fresh look at the issue. Co-chaired by Melinda Gates (Bill and Melinda Gates Foundation) and Jack Ma (Alibaba Group), the panel looked at ways to strengthen cooperation in the digital space. In its final report, the panel acknowledges the lack of global standards supporting value chains and data governance. It recognizes that standards are needed to create international digital collaboratives to support the UN Sustainable Development Goals. It states that ad hoc responses could fragment the interconnectedness that defines the digital age and that competing standards and approaches would reduce trust and discourage cooperation. Nevertheless, the report refrains from recommending the creation of a new stand-alone UN body accountable for data standards (Digital Cooperation 2019).

The growing battle for technological supremacy between the United States and China is partly to blame for the current stalemate in global data standards development. Progress has stalled due to US disengagement, and in the face of significant progress made by China in influencing the content of global standards in all sectors of the economy. There is a generalized perception that US participation in global standard-setting bodies related to fifth-generation (5G) and other digital technologies has declined considerably over the years (SOS International 2018). US participation

has been further restricted since May 2019, when the US Department of Commerce added China's Huawei to its export control regulation Entity List (Rubio 2020). Given this disengagement trend, one can understand the lack of appetite on the part of US authorities to support the creation of a new UN body focusing on data governance.

DSTF

This policy brief proposes an alternative to the status quo, the creation of a new institution named the DSTF. It would be similar in structure to the Internet Engineering Task Force. The DSTF would be entrusted with a dual mandate: enabling the development of interoperability standards to create data value chains; and accountability for the development of data governance standards. The ultimate objective of the DSTF would be to create the required architecture for a "single data zone," where data can circulate freely between participating jurisdictions.

Digital cooperation will involve the creation of complex data value chains. Just as with traditional supply chains for tangible products, each segment of a given data value chain will have specific roles, which will have to be described and categorized. In addition, data will go through a life cycle from creation to disposal, which will also have to be described and categorized.

We should anticipate that many standards and specifications will be required to properly frame data value chains. The DSTF could create new systems and approaches to meaningfully involve a broader range of stakeholders, including regulators and civil society. Codes, standards, guidelines, best practices and model technical regulations will be required to cover both the technical and the governance layers.

The structuring of the DSTF would need to reflect the new realities of the digital age. Classical forms of governance do not apply. Technology moves so fast that by the time decision makers gather to prepare, discuss, approve, ratify and implement a convention or new agreement, the landscape has changed entirely. Analog policy making will not work in a digital world. In order to be responsive, the DSTF would need to develop standards a lot faster than the two to three years

generally required in traditional standard-setting bodies. Once developed, one would expect some of the standards to be "evergreen," that is, to be updated on an ongoing basis in order to reflect new technologies and approaches and remain relevant. Traditional standard-setting bodies require a published standard to be reviewed every five years, which does not reflect the fast pace of change in the intangible economy.

Ontology, Semantics, Definitions and Terminology

When industrial sectors were mostly vertical in nature, standards development organizations developed standards in silos. As a result, a multiplicity of domain-specific semantics, including product terminology, classification and properties, were created and maintained, sometimes for many decades. With digitization, information is being generated and exchanged across sectors. This leads to a demand for universal semantics, which should follow a common ontological foundation. Big data analytics are, by definition, higher-level functions and will need to be based on a common ontology. It is a prerequisite for interoperability.

Interoperability Standards for Data Value Chains

The internet and the World Wide Web will provide the infrastructure backbone on which data value chains will be built. As outlined in a recent CIGI policy brief entitled *Standards for the Digital Economy: Creating an Architecture for Data Collection, Access and Analytics*, data value chains are composed of three segments: data collection and grading; data access, sharing and storage; and data analytics and solutions (Girard 2019). Detailed standards, specifications and guidance are needed to achieve interoperability and make it possible for data collected in one data collaboration platform to be used by another within the single data zone. As technology evolves quickly,

data value chain standards should be updated as needed and a preference may be given to organizations that commit to evergreen standards.

Data Collection and Grading

Digital cooperation projects will require data from a multiplicity of sources in order to be successful. Existing data sets in analog format will be used in addition to digitized data sets stored in various databases in different formats. With the deployment of 5G technologies, digital collaboratives will increasingly rely on streaming data from Internet of Things (IoT) devices, industrial sensors, cameras, clickstreams, servers and user app activity. Metadata standards will be required to provide information about the characteristics of the data collection apparatus and about data set attributes. These will be needed in order to precisely describe the features of available data sets; to categorize and apply a grade to the data to make inferences about its quality; and to label data sets and ensure they are tagged with appropriate intellectual property and copyright mechanisms for traceability. Sensor data containing personal information, such as biometric data, facial recognition, emotion detection, fingerprints and iris scans, will need to be managed differently and will require their own sets of standards.

Data Access, Sharing and Storage

This second segment of the data value chain is needed to make data accessible. It will serve as the interface to connect data sets with data users. New data collaboration platforms will be created to manage and track data flows on behalf of the participants making data available. And they will manage data access for artificial intelligence (AI) and machine-learning organizations looking to generate new insights. Depending on the needs and constraints of participating organizations, the operations of this segment could be decentralized across a supply chain (for example, through data access models based on credentials) or centralized by physically pooling available data into data lakes, commons, trusts, marts, pools, libraries and so on. Standards will be required to describe and frame these different data access methods.

In addition to choices about data access modalities, interoperability issues will have to be addressed by data access organizations. Central to interoperability is the choice of appropriate application programming interfaces (APIs) to allow

for data transmission, use and tracking. Standards will be needed to set the performance requirements of APIs to be used in the single data zone and to ensure interoperability between platforms.

Data Analytics and Solutions

This third segment of activities will be undertaken by a number of organizations from civil society, governments, academic and research organizations, and small and medium-sized enterprises engaged in AI and machine learning. Analytics functions could operate in a central location in an “IoT lab” in order to foster collaboration between participants. They could also operate in a decentralized way, with each organization negotiating appropriate access rights to data in order to access data and determine how best to use it.

By relying on IoT labs or commercialization incubators as vehicles for generating data insights, supply chain participants would be able to articulate to AI specialists the most urgent problems that need solutions. They could provide guidance on data availability and quality, and test solutions and insights as they are developed. Organizations engaged in data analytics will need standards to ensure that algorithms and solutions respect applicable regulations and ethical guidelines, and that they are seen as trustworthy.

Data Governance Standards

Advances in digitization allow organizations to gather and store more data, enabling smarter and quicker decisions, but they are also giving rise to a new series of issues. How do organizations collect and distribute the right data at the right time? How should organizations deal with data ownership and copyright? How should personal information be treated? What rules should organizations follow regarding data residency and routing? What are acceptable practices for the use of automated decision systems that rely on AI?

Although some of these issues can be handled solely by organizations, many will ultimately be framed by governments through enabling laws, regulations and policies. As regulators are not equipped to keep pace with rapid technological advancement, the DSTF would create technical committees and working groups to develop and maintain the necessary foundational data governance standards. These standards would frame how digital cooperation initiatives and

big tech platforms operate in the single data zone. The technical committees would be composed of representatives from governments, industry, civil society and academics.

Creating the Right Alliance

In the absence of a global commitment to regulate data governance, there is little appetite among stakeholders to create a new global data standards coordination body. However, it may be possible to begin through a regional approach by creating the right alliance composed of jurisdictions sharing similar values. In a paper entitled *A Plurilateral “Single Data Area” Is the Solution to Canada’s Data Trilemma*, CIGI senior fellows Patrick Leblond and Susan Ariel Aaronson propose the creation of an International Data Standards Board. The organization would initially cover Canada, the European Union, the United States and Japan but could expand to other nation-states. It would be accountable for devising common technical and governance standards. The standards would ensure a high degree of trust in the data-driven economy among individuals, consumers, workers, businesses and governments, so that all forms of data could flow freely across borders. The International Data Standards Board would also be responsible for monitoring the single data zone. Regular assessments would determine if participating member states were in compliance with the standards (Leblond and Aaronson 2019).

Robert Fay, managing director of digital economy at CIGI, also recently proposed the creation of a data governance body with a broad mandate. In a recent essay entitled “Digital Platforms Require a Global Governance Framework,” Fay proposes a new organization structured like the Financial Stability Board (FSB). The FSB, created after the 2008 financial crisis, was given a mandate by the Group of Twenty to “promote the reform of international financial regulation and supervision” with a role in standard setting and in promoting members’ implementation of international standards (Fay 2019). The proposed Digital Stability Board (DSB) would be composed of a plenary body, which would set objectives and oversee the work of the board. It would consist of officials from the countries that initially join the organization. It would work with standard-setting bodies, governments and policy makers, regulators, civil society and the big tech platforms themselves via a set of working groups with clear mandates

that would report back to the plenary. Funding would come from its member countries alongside voluntary donations and in-kind contributions via participation in the DSB working groups. It could report to the IGC. The IGC, made up of a diverse set of 12 countries and more than 400 million citizens, has been active in investigating the behaviour of the Facebook, Amazon, Apple, Microsoft, and Google (known as FAAMG) platforms, including their role in disseminating fake news (ibid.).

The creation of the DSTF could also support the implementation of regional trade agreements. For example, Meg King and Jake Rosen of the Woodrow Wilson Center recently proposed the creation of a North American Technology Trust. The body would focus on six converging technologies that will play an outsized role in the coming century: AI, cybersecurity, quantum computing, biotechnologies, robotics and autonomous vehicles, and space-based technologies. It would “inspire a concerted, multi-front campaign of education, investment, research and development” (King and Rosen 2019, 2) to counterbalance the growing clout of China in the digital space. As the authors noted, “With no judgment on which we might prefer, a world operating technologies espousing Chinese values will look very different than one operating technologies built with Western norms in mind” (ibid.). Creating a technology trust would help codify existing networks and relationships under the umbrella of a broader regional strategy leveraging the best each nation has to offer. Provisions embedded in CUSMA mandating the free flow of data across borders, disallowing mandates for data localization and encouraging each government to make its data open and machine-readable can open the door to broad-based data sharing between jurisdictions.¹ And large data streams are necessary to properly train algorithms (King and Rosen 2019).

Another possible approach could be the creation of the DSTF under the auspices of other regional trade agreements such as CETA or the CPTPP. Regarding CETA, the e-commerce chapter establishes an ongoing dialogue for important international e-commerce issues, including the verification of online identities, the treatment of spam and the protection of consumers and businesses from online fraud. It may be possible

¹ See www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cusma-aceum/text-texte/toc-tdm.aspx?lang=eng.

to engage parties on the need for data governance standards through that mechanism.² The CPTPP also contain clauses protecting the free flow of information across borders and minimizing data localization requirements, while preserving the right of parties to protect data for compelling public policy purposes. The agreement maintains measures to protect users from the unauthorized disclosure of their personal information in order to build trust. The CPTPP also encourages governments to adopt open data policies.³

Looking Forward

In the absence of a UN-mandated organization to coordinate the development of global data standards, nation-states that share similar values should consider creating a mechanism to enhance digital cooperation. The proposed DSTF could set the stage for the creation of a single data zone among participating jurisdictions. Standardized data collaboration platforms, sourced with multiple data sets from participants, could shed new light on persistent problems and benefit humanity.

Acronyms and Abbreviations

5G	fifth-generation
AI	artificial intelligence
APIs	application programming interfaces
CETA	Canada-European Union Comprehensive Economic and Trade Agreement
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CUSMA	Canada-United States- Mexico Agreement
DSB	Digital Stability Board
DSTF	Data Standards Task Force
FSB	Financial Stability Board
IGC	International Grand Committee on Big Data, Privacy and Democracy
IoT	Internet of Things

² See www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/text-texte/toc-tdm.aspx?lang=eng.

³ See www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/tpp-ptp/text-texte/14.aspx?lang=eng.

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